NATIONAL OCEANOGRAPHY CENTRE

England & Wales · Charity number 1185265

Details

Other names	NOC
Status	Registered
Legal form	Charitable company
Company number	11444362
Registered	2019-09-11
Register	View on the Charity Commission register

Contact

Address	National Oceanography Centre Waterfront Campus European Way Southampton SO14 3ZH
Phone	02380596666
Website	www.noc.ac.uk

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Activities

Objects: THE COMPANY'S OBJECTS ARE RESTRICTED SPECIFICALLY, IN EACH CASE ONLY FOR THE PUBLIC BENEFIT TO:4.1.1 THE ADVANCEMENT OF SCIENCE, IN PARTICULAR ENHANCING THE SCIENTIFIC KNOWLEDGE AND UNDERSTANDING OF OCEANOGRAPHIC SCIENCES, AND THE OCEAN AND ITS INTERACTION WITH THE EARTH SYSTEM, AND FACILITATING THE USE AND APPLICATION OF THAT KNOWLEDGE AND UNDERSTANDING, PARTICULARLY BY:4.1.1.1 UNDERTAKING AND CAUSING TO BE UNDERTAKEN RESEARCH INCLUDING THROUGH TECHNOLOGY DEVELOPMENT, EXPERIMENTATION, ANALYSIS, LONG-TERM OCEAN OBSERVATION, MONITORING, MAPPING, SURVEY AND MODELLING OF A HIGH INTERNATIONAL STANDARD AND DISSEMINATING THE USEFUL RESULTS OF RESEARCH;4.1.1.2 PROVIDING ACCESS TO SCIENTIFIC RESEARCH AND TECHNOLOGY DEVELOPMENT FACILITIES AND INFRASTRUCTURE INCLUDING RESEARCH SHIPS AND OTHER MEASUREMENT PLATFORMS AND SYSTEMS TO THE OCEAN SCIENCE COMMUNITY;4.1.1.3 OBTAINING, MANAGING, CURATING AND PROVIDING ACCESS TO DIGITAL DATA, SAMPLES AND OTHER SPECIMENS;4.1.1.4 BEING THE UK NATIONAL FOCUS FOR OCEAN SCIENCE, EXERCISING LEADERSHIP FOR AND PROMOTING CO-OPERATION WITH THE WIDER UNITED KINGDOM SCIENCE COMMUNITY, AND PROVIDING NATIONAL AND INTERNATIONAL VISIBILITY AND EXPERT REPRESENTATION FOR OCEANOGRAPHIC SCIENCES;4.1.1.6 INNOVATION OR BY ENCOURAGING AND SUPPORTING INNOVATION;4.1.2 THE ADVANCEMENT OF EDUCATION IN OCEANOGRAPHIC SCIENCES, AND THE OCEAN AND ITS INTERACTION WITH THE EARTH SYSTEM AND RELATIONSHIP WITH PEOPLE, PARTICULARLY BY:4.1.2.1 CONTRIBUTING TO THE EDUCATION (PARTICULARLY POSTGRADUATE HIGHER EDUCATION), TRAINING AND DEVELOPMENT OF THE NEXT GENERATION OF SCIENTISTS, ENGINEERS, TECHNOLOGISTS INCLUDING THE SUPERVISION OF POSTGRADUATE RESEARCH STUDENTS;4.1.2.2 SUPPORTING THE BUILDING OF MARINE RESEARCH SCIENTIFIC AND TECHNICAL CAPACITY IN OTHER COUNTRIES AROUND THE WORLD;4.1.2.3 COMMUNICATING WITH AND ENGAGING WITH THE PUBLIC IN RELATION TO OCEAN SCIENCE AND TECHNOLOGY THROUGH SEMINARS, TALKS, LEAFLETS, PAPERS AND OTHER MEANS;

Activities: NOC is a marine science research and technology institution which undertakes integrated sea level science, coastal and deep ocean research and technology development. NOC contribute to the advancement of scientific knowledge of the ocean and support education and training of scientists, engineers and marine professionals and engaging the public with the science of the ocean and its implications.

Classification

- **How:** Makes Grants To Organisations, Provides Buildings/facilities/open Space, Provides Advocacy/advice/information, Sponsors Or Undertakes Research
- **What:** Education/training, Arts/culture/heritage/science
- **Who:** Other Charities Or Voluntary Bodies, Other Defined Groups, The General Public/mankind

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Geography

- Antigua And Barbuda
- Argentina
- Austria
- Bangladesh
- Belize
- Cambodia
- Canada
- Cape Verde
- Chile
- China
- Dominica
- Falkland Islands
- Fiji
- Germany
- Grenada
- Guyana
- India
- Indonesia
- Jamaica
- Kenya
- Kiribati
- Madagascar
- Malaysia
- Mauritius
- Mozambique
- Namibia
- Netherlands
- Northern Ireland
- Norway
- Papua New Guinea
- Samoa
- Scotland
- South Africa
- Spain

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- Tanzania
- Thailand
- Tonga
- Tuvalu
- United States
- Vanuatu
- Vietnam
- Throughout England And Wales

Finances

Period end	Income	Expenditure	Assets	Employees
2024-09-30	£86,213,000	£81,640,000	£31,846,000	722
2023-09-30	£85,401,000	£85,202,000	£27,273,000	673
2022-09-30	£78,717,000	£74,093,000	£27,074,000	647
2021-09-30	£67,141,000	£66,760,000	£23,734,000	638
2020-09-30	£80,573,000	£57,585,000	£23,353,000	653

Trustees

Name	Role	Appointed
David Jeremy Darroch	Chair	2022-10-01
Clare Mary Petre Harbord		2024-05-08
David Keith McSweeney		2024-04-08
Dr HOSEIN KHAJEH-HOSSEINY		2025-01-07
John Francis Clarke		2025-02-19
Professor Lisa Maureen Collins		2025-02-20
Professor Sir Ian Lamont Boyd		2019-06-25
Rebecca Jane Munro		2025-09-11
Sir MICHAEL DIXON KBE BSC		2024-03-01

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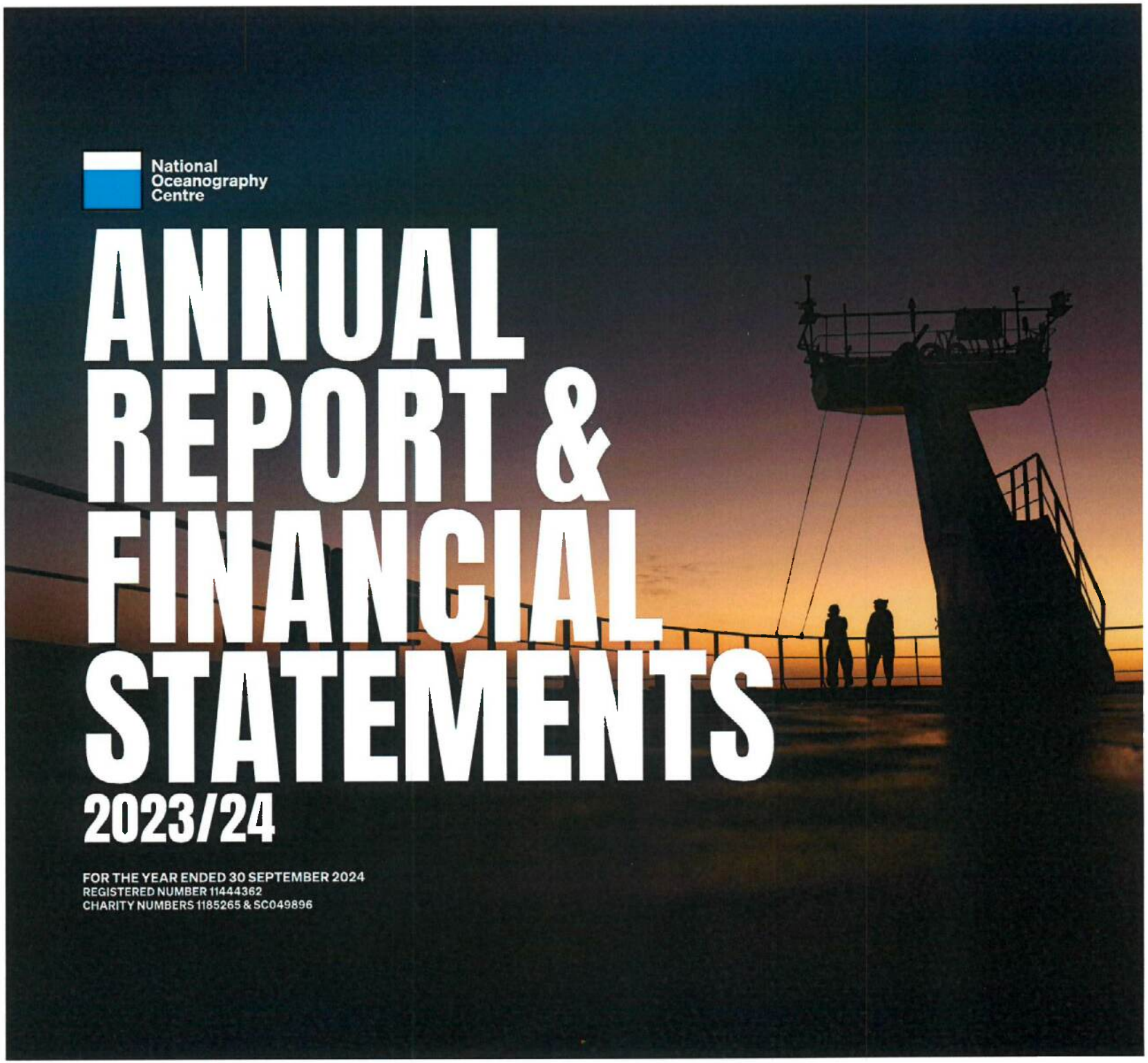
NATIONAL OCEANOGRAPHY CENTRE

England & Wales - Charity number 1185265

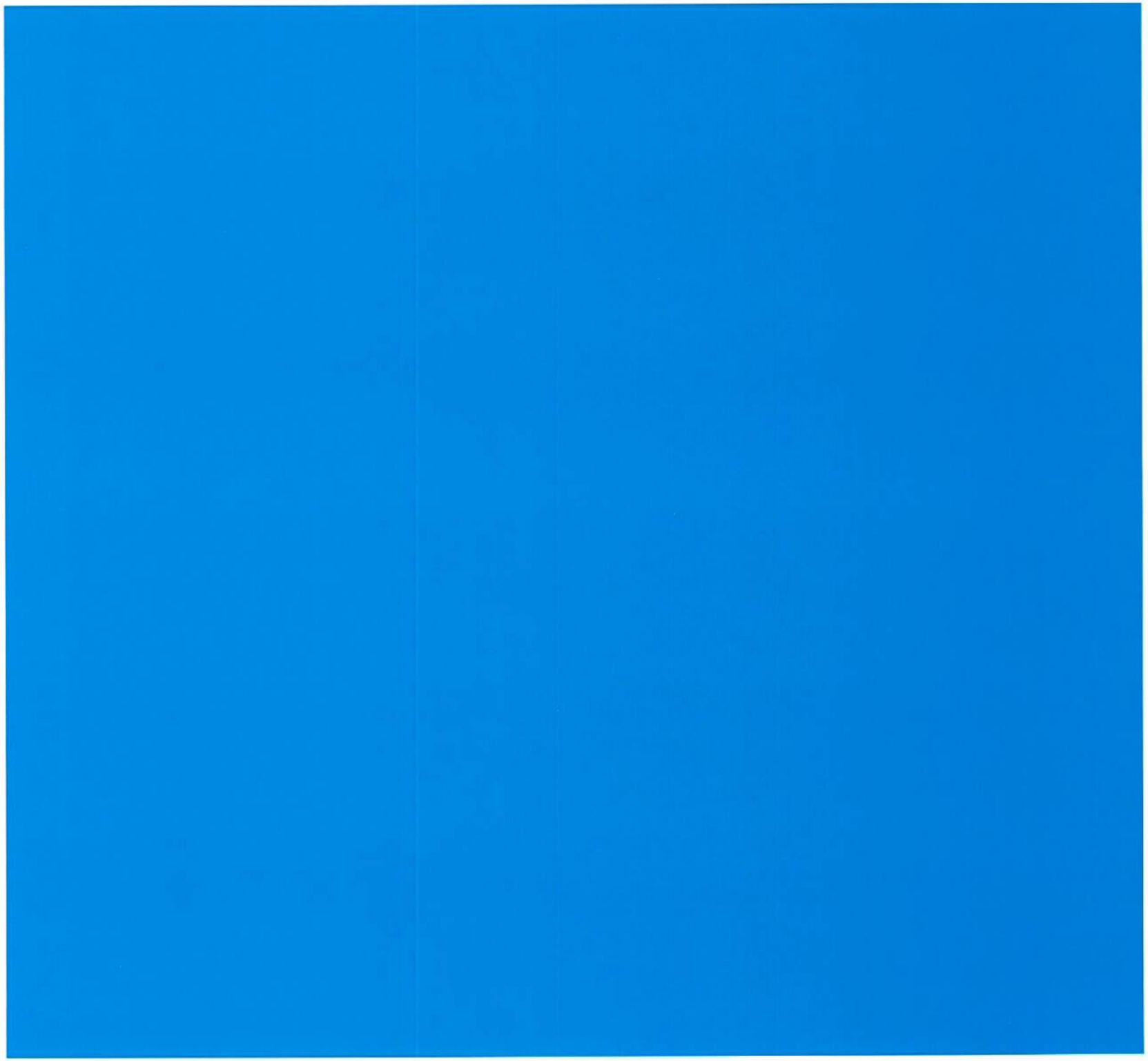
Accounts

National Oceanography Centre

ANNUAL REPORT & FINANCIAL STATEMENTS 2023/24



FOR THE YEAR ENDED 30 SEPTEMBER 2024
REGISTERED NUMBER 11444362
CHARITY NUMBERS 1185265 & SC049896



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A NEW ERA FOR NOC

FOREWORD BY THE CHAIR OF TRUSTEES

Our planet is a blue planet, most of it is covered by ocean. Yet so much of the ocean is yet to be discovered and fully understood.

As Chair of the Trustees of the National Oceanography Centre, I'd like to thank the staff and stakeholders of NOC for their dedication and commitment in making this another successful year and for ensuring that NOC continues to be one of the world's leading oceanography institutions.

Our work has continued to explore, educate and enthuse all on the enormous opportunities that the ocean brings, and the value in the sustainable use of its' resources. It's a critical time for marine research, and the role of the ocean in mediating our climate and supporting all life on Earth is ever clear.

This year represents the beginning of a new era for NOC, with a number of significant appointments. Within the Trust Board we are delighted with the successful appointment of three new Trustees, strengthening our knowledge and understanding of the communities and landscapes that we work with and engage. David McSweeney, Sir Michael Dixon and Clare Harbord each bring with them a wealth of experience in business, government, finance, science and engagement and we all very much look forward to working with them as we continue to support NOC on this journey.

In April 2024 we announced the appointment of Dr John Siddorn as Chief Executive. I am delighted with the appointment of John as CEO as he brings a strong track record of leadership in innovation for ocean research and will keep pushing the frontiers of science and innovation. Then in June 2024 Professor Penny Holliday was appointed as Chief Scientist – a critical role as we continue to understand planet Earth and inspire future generations to develop further knowledge and understanding.

As the UN Decade of the Ocean approaches its' mid-way point it's a good opportunity to take stock and consider how far we've come, and how far we have to go. The United Nations General Assembly proclaimed in 2017 that "the ocean holds the keys to an equitable and sustainable planet" and "understanding the variability of the ocean and the related impacts on our society will be of vital importance, if we want both nature and humankind to thrive". Governments all over the world accept the importance of the ocean and the science required to understand its' impact. Collaboration and partnerships are critical for us to tackle these global issues collectively. It's time now for all of our actions to be led by the scientific evidence that research provides us with, and I invite you to support NOC as we continue to push the boundaries of our understanding.

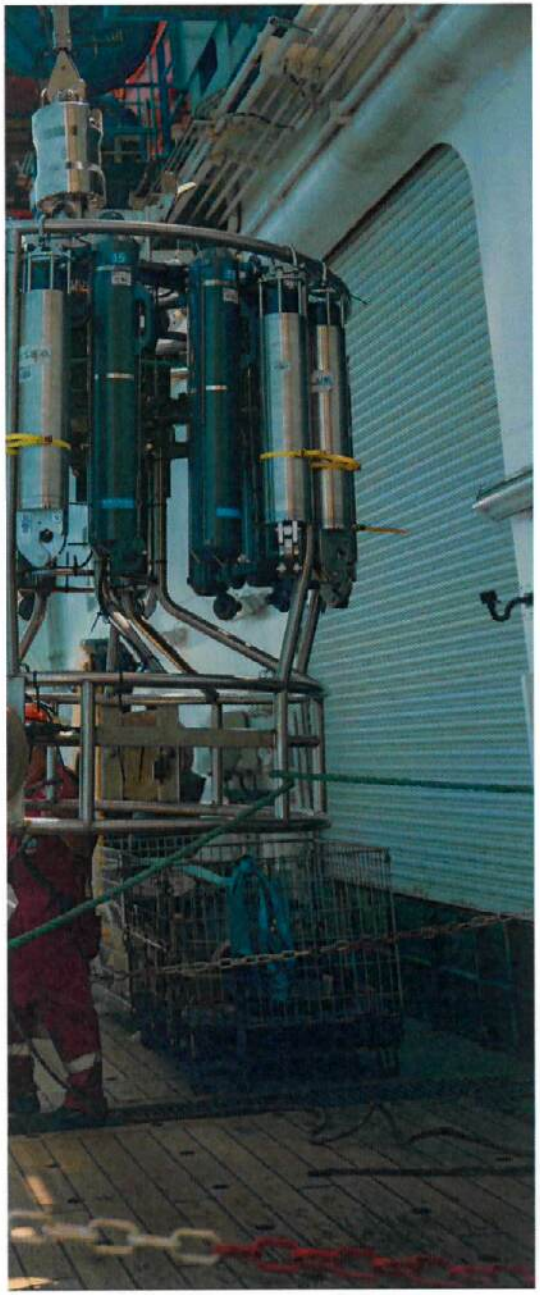
SIR JEREMY DARROCH

The 20th anniversary expedition of researching the Atlantic Meridional Overturning Circulation (AMOC)

197 RESEARCH PAPERS PRODUCED

84% GOLDEN OPEN ACCESS 166 TOTAL

1% GREEN OPEN ACCESS 1 TOTAL



REPORT OF THE CHIEF EXECUTIVE

As Chief Executive I am pleased to present the National Oceanography Centre's 2023/2024 Annual Report and reflect on our achievements and challenges of the past year.

I took on the leadership of NOC in April 2024 and I am very excited to have been given this opportunity at such an important time for the organisation, as we continue to grow from strength to strength. When joining the organisation in 2020 as Associate Director, the passion and expertise of the staff of NOC struck me as one of our key strengths, and this continues to be what I consider our strongest asset – our people.

It is now unquestioned that the ocean plays a critical role in planetary health, as stated by the Intergovernmental Oceanographic Commission "it feeds us, protects us and absorbs more than 90% of the excess heat generated by global warming. It is an inestimable source of economic, social and cultural wealth – 3 billion people depend on marine and coastal biodiversity for their livelihoods". Whilst the importance of the ocean is globally well accepted, the majority of the ocean remains unmapped, unexplored and poorly understood. Here lies the role of science and innovation – it isn't just about opportunities and solutions, but also about understanding the risks and helping society to prepare for the challenges ahead. Working with governments, NGOs, industry and partners across the world, we turn research and technological innovation into real action for some of the world's biggest challenges.

The stories within this annual report demonstrate the enormous breadth of science we have delivered over the past twelve months – although much of our research stretches far beyond 12 months. This year we celebrated the 20th anniversary expedition of researching the Atlantic Meridional Overturning Circulation (AMOC), as part of its RAPID programme. This makes the RAPID-AMOC array one of the longest running, continual sustained deep-ocean observation arrays in the world – and as we have demonstrated in recent years, long-term evidence is critical in understanding the current and potential changes in the global climate system.

So much of our work is for public good; from helping to protect coastal communities, food security and livelihoods, to advancing carbon adaptations that could limit the levels of climate change for generations to come. The case studies within this report demonstrate the depth and breadth of this, from marine monitoring using our autonomous vehicles and innovative technology and the use of earth observation data and digital twinning technology to transform environmental science, to the discovery of hundreds of new benthic organisms and the analysis of microplastics in Antarctica. We see our existing and new partnerships as a vital element to our success, and by bringing together world-leading expertise and innovation we are tackling some of the biggest global challenges humans have faced.

Interwoven with all our science we consider our engagement role seriously, demonstrated through our events such as our annual Westminster parliamentary reception, public and school open days at the Southampton site and our events in Greenland and Iceland with the public, academic and diplomatic audiences. We understand that the impact of our work stretches across all audiences and we strive to ensure it is accessible and meaningful for all.

Looking ahead it continues to be a challenging landscape for all in terms of funding for research and at NOC we are highly focused on the impact of our work and the opportunities we can bring to both the economy and society. We continue to focus on our partnerships and commercial collaborations and build on our foundations as an independent research institute. I thank every one of the NOC team for their contributions towards our achievements over the past year and I look forward to tackling the next challenges with my esteemed colleagues as we demonstrate the expertise that NOC can bring.

DR JOHN SIDDORN

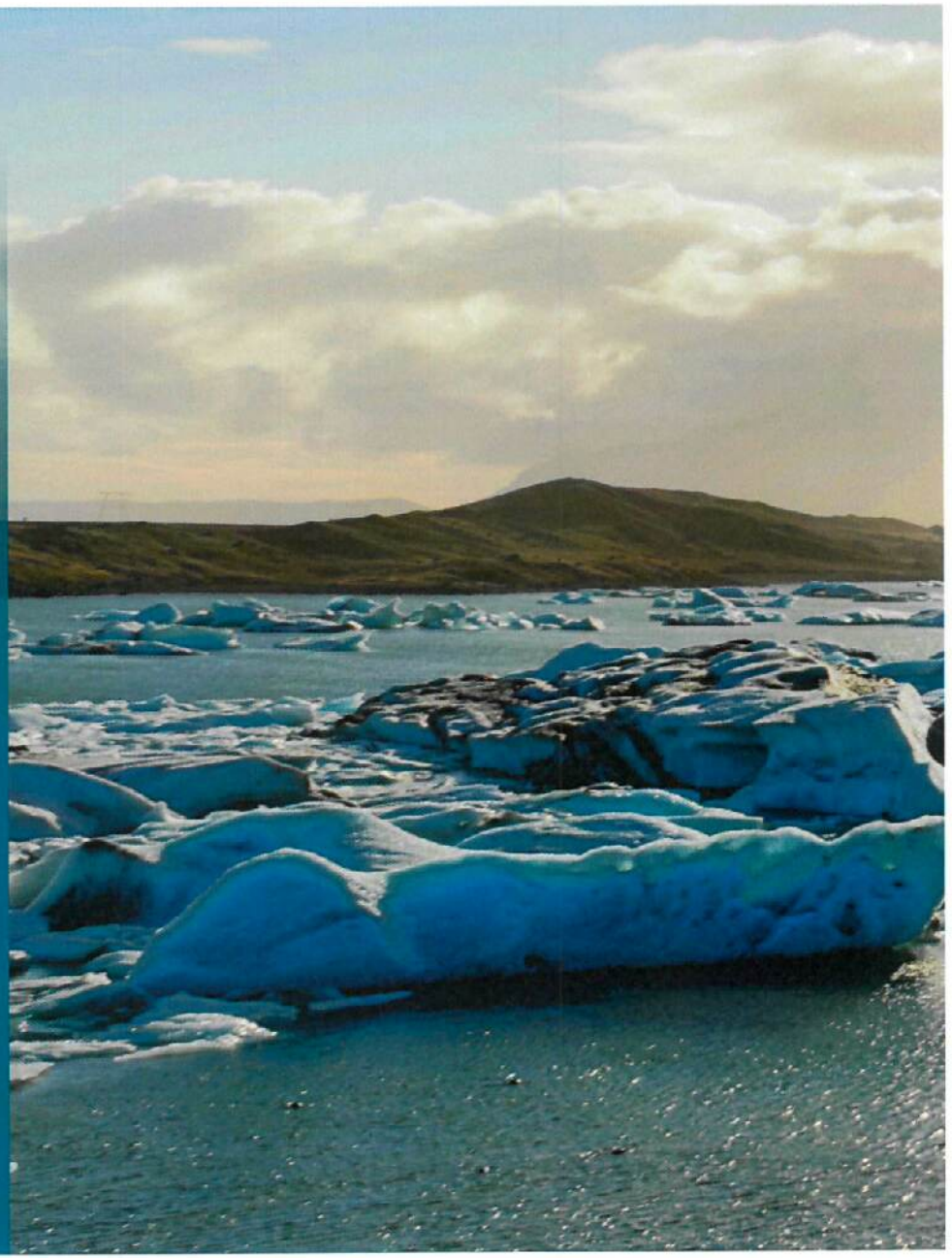
CHAIN REACTION

STORY SPOTLIGHT

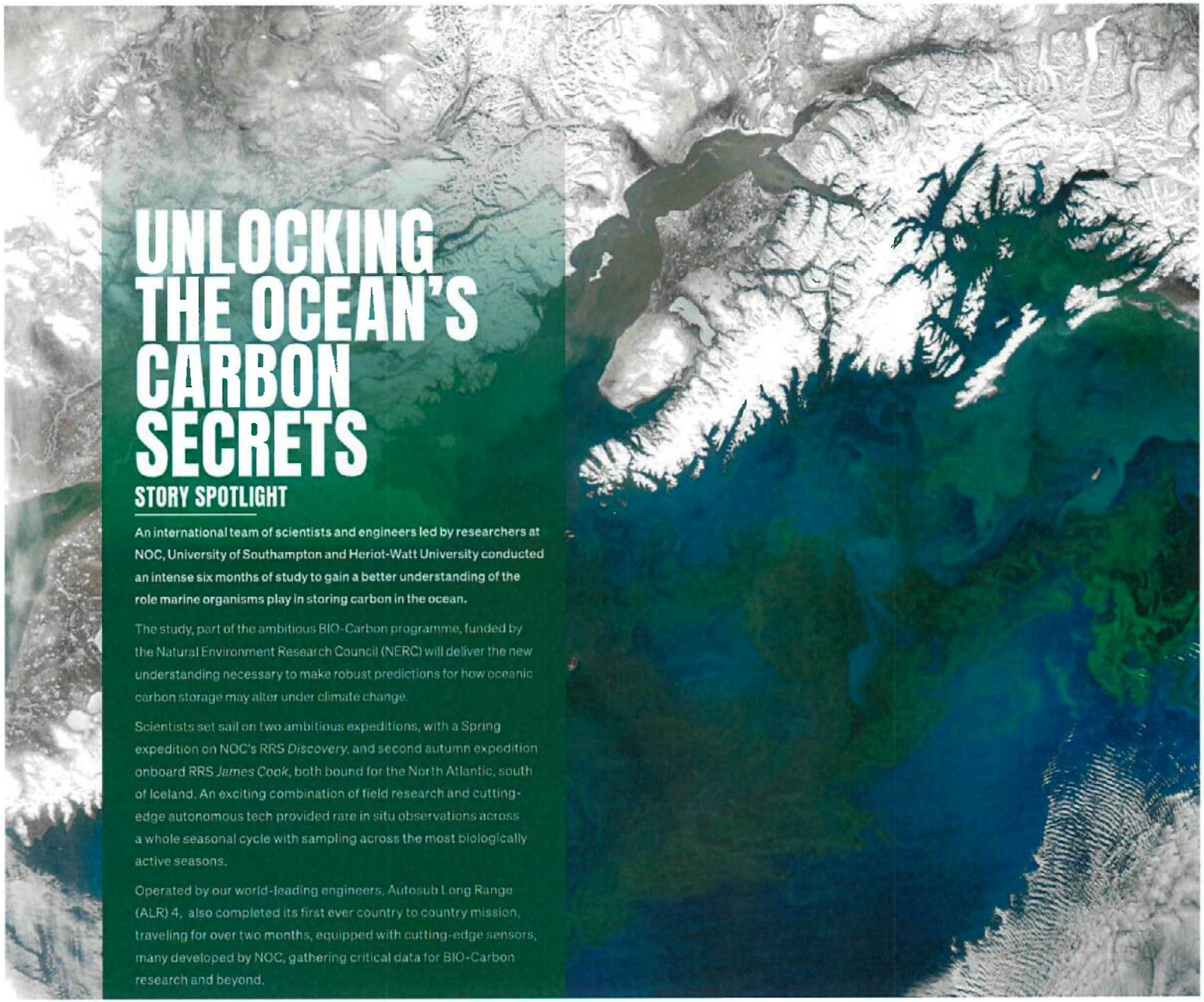
Our scientists discovered a chain of events that lead to hotter and drier European summers, suggesting that European summer weather can be predicted months or even years in advance. The paper, published in Weather and Climate Dynamics, proposes that melt-water in the North Atlantic starts a chain of events

Melting sea ice and glacial ice are a growing source of freshwater to the North Atlantic. With increases in ice melt, the study suggests that European heatwaves and droughts will become more frequent and intense in future. The warming over Europe after strong freshwater releases in the North Atlantic will add to the warming already happening because of climate change, by causing weather patterns to shift.

The research findings demonstrate the importance of ocean observations, to ensure climate models capture all physical processes required to make accurate weather predictions. This study is a step forward for improving models, which will enable industries and stakeholders to plan ahead for specific weather conditions, such as adapting agricultural methods to be more resilient, predicting fuel usage, and bracing for flooding events.



"The location and strength of melt water occurrences in the North Atlantic in winter provide valuable clues about the location, strength and character of European weather anomalies in the subsequent summers."
DR MARILENA OLTMANNS
LEAD AUTHOR & RESEARCH SCIENTIST
NATIONAL OCEANOGRAPHY CENTRE
2,475
PIECES OF MEDIA COVERAGE
72
NEWS STORIES PUBLISHED ON OUR WEBSITE
4,416
OCEAN NEWS EMAIL SUBSCRIBERS
81,446
TOTAL SOCIAL MEDIA AUDIENCE
21.52%
ENGAGEMENT RATE



UNLOCKING THE OCEAN'S CARBON SECRETS

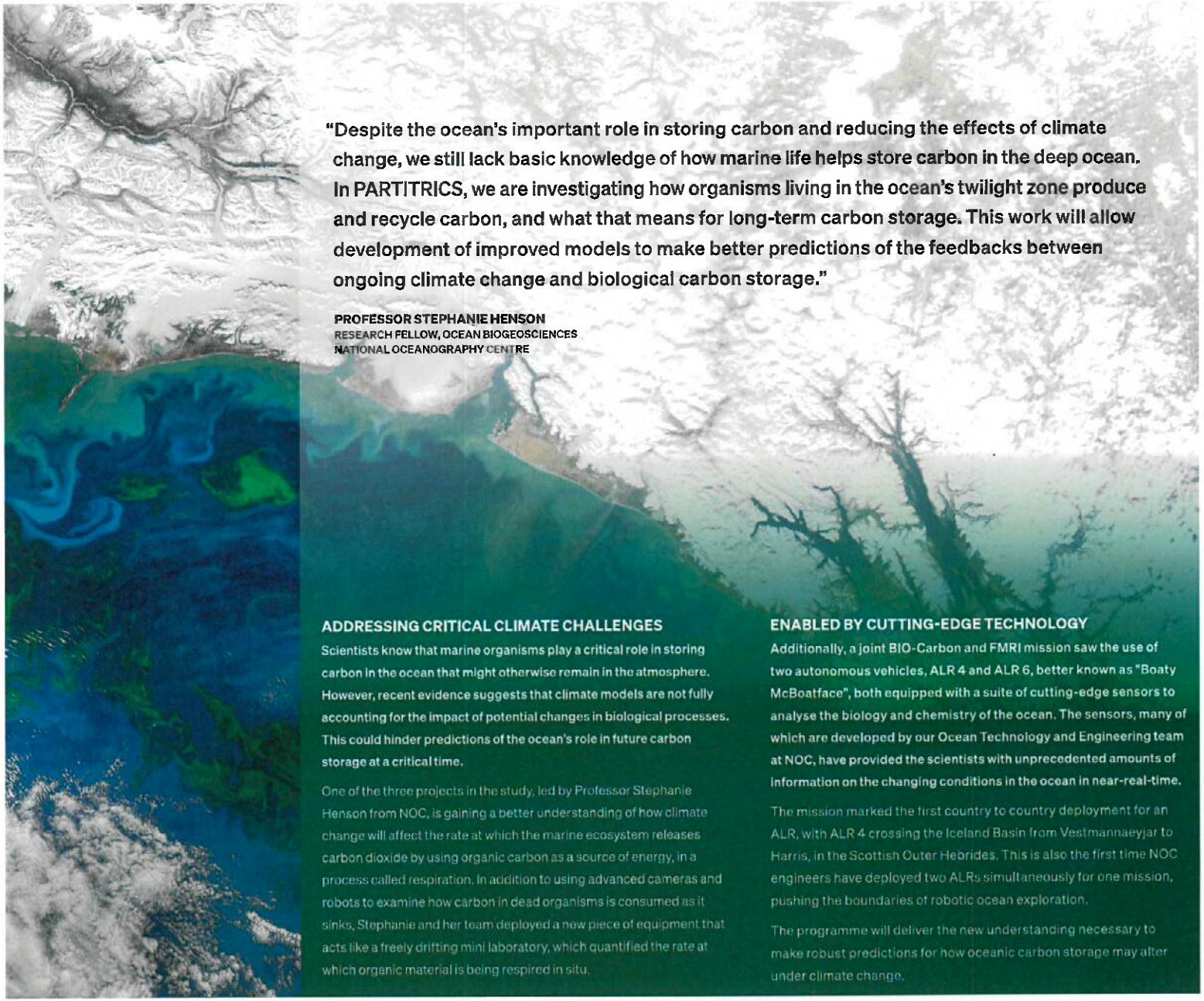
STORY SPOTLIGHT

An international team of scientists and engineers led by researchers at NOC, University of Southampton and Heriot-Watt University conducted an intense six months of study to gain a better understanding of the role marine organisms play in storing carbon in the ocean.

The study, part of the ambitious BIO-Carbon programme, funded by the Natural Environment Research Council (NERC) will deliver the new understanding necessary to make robust predictions for how oceanic carbon storage may alter under climate change.

Scientists set sail on two ambitious expeditions, with a Spring expedition on NOC's RRS *Discovery*, and second autumn expedition onboard RRS *James Cook*, both bound for the North Atlantic, south of Iceland. An exciting combination of field research and cutting-edge autonomous tech provided rare in situ observations across a whole seasonal cycle with sampling across the most biologically active seasons.

Operated by our world-leading engineers, Autosub Long Range (ALR) 4, also completed its first ever country to country mission, traveling for over two months, equipped with cutting-edge sensors, many developed by NOC, gathering critical data for BIO-Carbon research and beyond.



"Despite the ocean's important role in storing carbon and reducing the effects of climate change, we still lack basic knowledge of how marine life helps store carbon in the deep ocean. In PARTITRICS, we are investigating how organisms living in the ocean's twilight zone produce and recycle carbon, and what that means for long-term carbon storage. This work will allow development of improved models to make better predictions of the feedbacks between ongoing climate change and biological carbon storage."

PROFESSOR STEPHANIE HENSON
RESEARCH FELLOW, OCEAN BIOGEOSCIENCES
NATIONAL OCEANOGRAPHY CENTRE

ADDRESSING CRITICAL CLIMATE CHALLENGES

Scientists know that marine organisms play a critical role in storing carbon in the ocean that might otherwise remain in the atmosphere. However, recent evidence suggests that climate models are not fully accounting for the impact of potential changes in biological processes. This could hinder predictions of the ocean's role in future carbon storage at a critical time.

One of the three projects in the study, led by Professor Stephanie Henson from NOC, is gaining a better understanding of how climate change will affect the rate at which the marine ecosystem releases carbon dioxide by using organic carbon as a source of energy, in a process called respiration. In addition to using advanced cameras and robots to examine how carbon in dead organisms is consumed as it sinks, Stephanie and her team deployed a new piece of equipment that acts like a freely drifting mini laboratory, which quantified the rate at which organic material is being respired in situ.

ENABLED BY CUTTING-EDGE TECHNOLOGY

Additionally, a joint BIO-Carbon and FMRI mission saw the use of two autonomous vehicles, ALR 4 and ALR 6, better known as "Boaty McBoatface", both equipped with a suite of cutting-edge sensors to analyse the biology and chemistry of the ocean. The sensors, many of which are developed by our Ocean Technology and Engineering team at NOC, have provided the scientists with unprecedented amounts of information on the changing conditions in the ocean in near-real-time.

The mission marked the first country to country deployment for an ALR, with ALR 4 crossing the Iceland Basin from Vestmannaeyjar to Harris, in the Scottish Outer Hebrides. This is also the first time NOC engineers have deployed two ALRs simultaneously for one mission, pushing the boundaries of robotic ocean exploration.

The programme will deliver the new understanding necessary to make robust predictions for how oceanic carbon storage may alter under climate change.

"Changes in the Arctic environment are already affecting our planet including the UK, through sea-level rise, changes to our climate and weather patterns, and threats to our shared biodiversity and Blue Economy. Opportunities for collaborative discussions such as those in Greenland this summer to tackle priority marine science challenges in the Arctic are more important than ever."

DR JO HOPKINS
SCIENCE LEAD FOR THE 'NOC IN THE ARCTIC' MISSION
NATIONAL OCEANOGRAPHY CENTRE

A SUMMER OF ARCTIC ENGAGEMENT

STORY SPOTLIGHT

This summer marked an extraordinary season of collaboration and engagement in the Arctic, where UK-led initiatives deepened scientific understanding and fostered diplomatic relationships across the region. Through our global class research vessels, the RRS *Discovery* and RRS *James Cook*, we engaged with Arctic communities, science institutions, and diplomatic bodies in Iceland and Greenland, ahead of ambitious research expeditions.

This began when 10 ambassadors to Iceland and 25 senior diplomats from the diplomatic community in Reykjavik were hosted onboard RRS *Discovery*, organised and supported by the British Embassy and British Ambassador to Iceland, Bryony Mathew.

Welcomed by Captain Stewart Mackay and the British Ambassador, the ambassadors had a tour of the ship, giving them unique insight into life at sea and facilitating important discussions on the latest research happening in the surrounding ocean.

RRS *JAMES COOK* IN NUUK

In August, alongside the British Embassy in Denmark, we opened our research vessel RRS *James Cook* to the Greenlandic public and science community during a stop in Nuuk. Approximately 160 visitors were welcomed by Captain James Gwinnell and crew to explore the vessel.

Our scientists and Royal College of Art representatives engaged with locals, discussing ocean science around Greenland and its societal importance. The event also fostered collaborative discussions between NOC, the British Embassy in Copenhagen, the Greenlandic science community, and the Government of Greenland, focusing on UK-Greenland science collaboration. Researchers explored new opportunities for tackling marine science challenges, highlighting synergies and novel uses of NOC platforms.

NEXT STOP REYKJAVIK

RRS *James Cook* then embarked on an ambitious expedition from Greenland to Reykjavik, kicking off a year of intensive study that will bring a new understanding of how much carbon is stored by the biological carbon pump in the Labrador Sea, a key region of carbon storage in the North Atlantic. As part of this mission, the ship will return to Nuuk in the summer of 2025. The return visit will provide a great opportunity for UK-Greenlandic collaboration, building on ideas and connections made during this visit.

The biological carbon pump stores large quantities of carbon dioxide (CO_2) in the deep ocean. Without this process, scientists think atmospheric CO_2 concentrations could be 50% higher than they are even now. NOC scientists are deploying autonomous technologies including Argo Floats, underwater gliders and imaging systems to gather crucial data that will be used to inform climate models, improving our understanding of how the world will respond to climate change. Representatives from the UK's Royal College of Art were also onboard during the sailing to test the performance of their time-lapse cameras at sea.

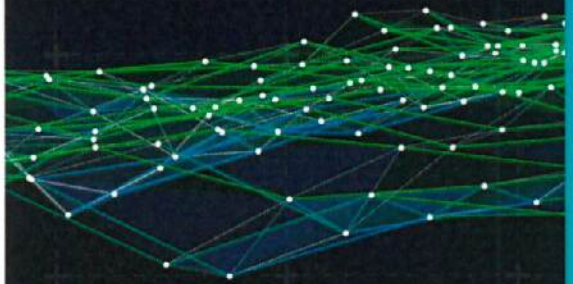
INSPIRING THE NEXT GENERATION

Later in the summer, the British Embassy to Iceland held their 'Future Careers' event onboard the RRS *James Cook*, inspiring the next generation of ocean scientists and mariners. Hosted by the ship's Captain and crew, Icelandic University students and Embassy officials toured the global-class research vessel and learned about the diverse career roles available at sea. Ocean scientists also engaged with attendees about their upcoming ambitious expedition to the Iceland Basin, connecting global scientific efforts with local communities.

Our engagement in the region showed that there is great interest from local communities and Arctic science ecosystems in engaging, paving the way for closer collaboration with our Arctic neighbours.

"This is a great opportunity to add value to an existing dataset. SPLASH builds on a previous wave overtopping project CreamT. It will use the observations made available through the British Oceanographic Data Centre (BODC) to develop Machine Learning tools. At the same time satellite image analysis techniques will be developed to demonstrate how different sources of coastal observations can be combined to better understand variability in coastal wave hazard."

DR JENNY BROWN
SPLASH PROJECT, COASTAL OCEANOGRAPHER
NATIONAL OCEANOGRAPHY CENTRE



HARNESSING DIGITAL TWIN TECHNOLOGY

STORY SPOTLIGHT

Five innovative projects launched this year will harness the potential of digital twinning technology to transform environmental science. The projects, led by NOC, University of Cambridge, University of Hull and University of Plymouth, will share a total of £2.8 million in funding delivered by the Natural Environment Research Council (NERC) as part of the Twinning Capability for the Natural Environment (TWINE) programme.

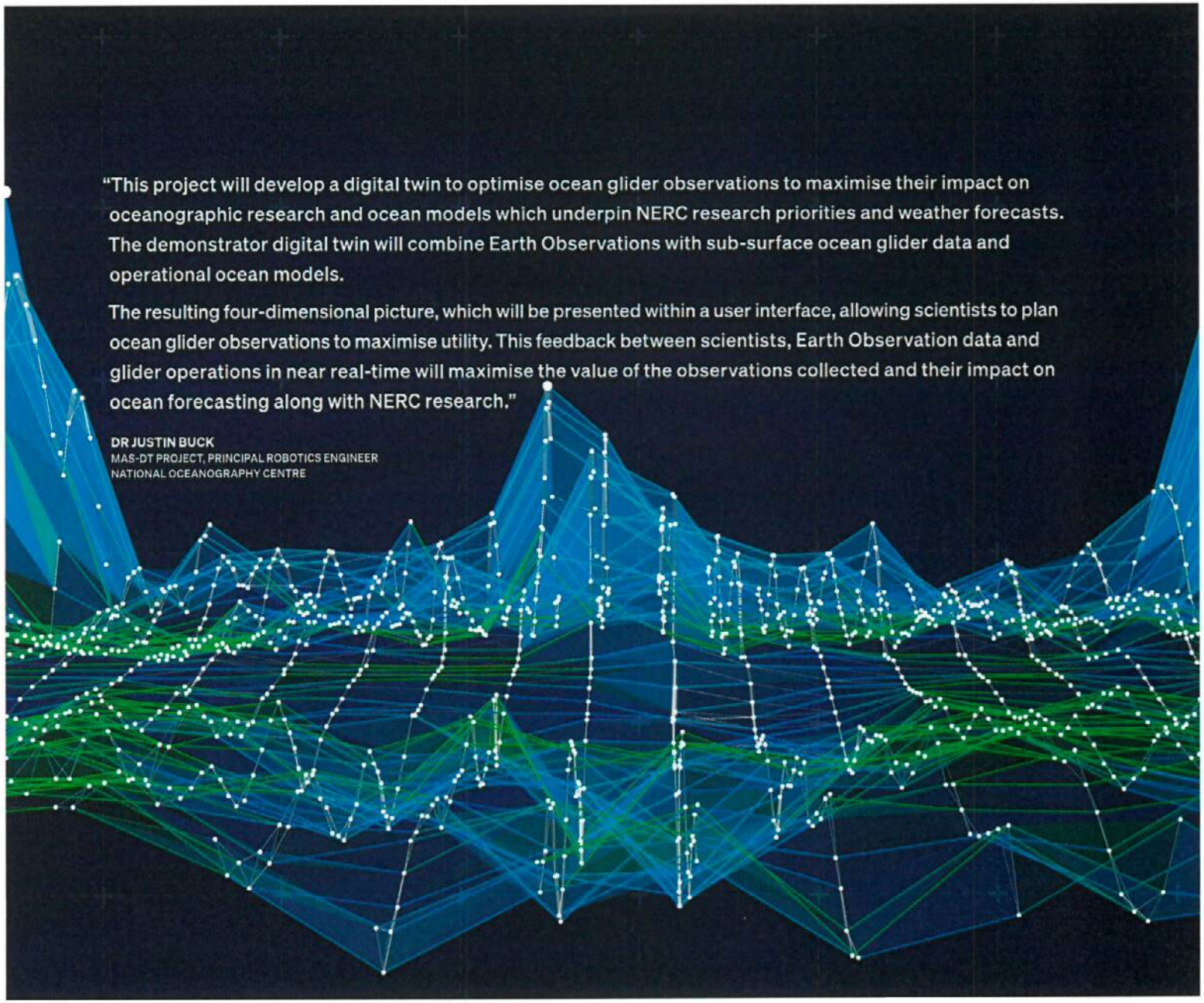
The digital twin pilot projects will demonstrate how research using Earth observation data and emerging digital twinning technologies can transform environmental science across priority areas including climate change, biodiversity and ecosystems, and natural hazards.

NOC will lead the MAS-DT project that looks at ocean glider observations for ocean models which underpin weather forecasts. NOC will also contribute expertise to two more of the TWINE funded projects, SyncED-Ocean and SPLASH.

Synchronising Earth observation and modelling frameworks towards a digital twin ocean (SyncED-Ocean) is led by Matthew Palmer, Plymouth Marine Laboratory. This project will deliver a digital twin pilot demonstrator that combines data from satellite Earth observations and marine autonomous robots for assimilation to marine system models to provide an optimised virtual coastal ocean ecosystem. It will focus on significantly improving the current predictive capability of harmful algal blooms (HABs) and their subsequent impacts on ocean oxygen concentration in UK coastal areas, both of which present serious risk to ocean health, biodiversity and productivity.

SPLASH: digital approaches to predict wave hazards is led by Nieves Valiente, University of Plymouth. This project will create a digital twin of a wave overtopping in order to build a deployable coastal warning tool that predicts wave hazards. This allows us to better understand how processes such as wind, tides, coastal sheltering and swells interact across an area to change the coastal wave hazard. The ultimate aim is to transform weather and climate research and improve operational hazard management to increase UK resilience.

The TWINE programme is part of a £200 million portfolio of 17 Earth observation investment package (EOIP) projects which were announced in November 2022.


"This project will develop a digital twin to optimise ocean glider observations to maximise their impact on oceanographic research and ocean models which underpin NERC research priorities and weather forecasts. The demonstrator digital twin will combine Earth Observations with sub-surface ocean glider data and operational ocean models.
The resulting four-dimensional picture, which will be presented within a user interface, allowing scientists to plan ocean glider observations to maximise utility. This feedback between scientists, Earth Observation data and glider operations in near real-time will maximise the value of the observations collected and their impact on ocean forecasting along with NERC research."
DR JUSTIN BUCK
MAS-DT PROJECT, PRINCIPAL ROBOTICS ENGINEER
NATIONAL OCEANOGRAPHY CENTRE

SUPPORTING A HEALTHY AND PRODUCTIVE OCEAN

Support sustainable development protecting the ocean's future health

In a world where the ocean holds the key to both economic prosperity and environmental stability, NOC is a dedicated steward, working to strike this vital balance. From fisheries to shipping and from renewable energy to tourism, marine-based industries offer vast economic potential. However, this potential comes with a profound responsibility.

We aim to facilitate the sustainable growth of these industries while safeguarding the very ecosystems that underpin their existence. We provide the evidence and experience that empower decision-makers, industries and communities to make informed choices. Better informed, they can propel marine-based economies forward for the benefit of people, without compromising the future health of our oceans.

REVOLUTIONARY REMOTE SENSING TECHNOLOGIES

The health of our ocean is vital for the survival and well-being of all life on our planet. TechOceanS, an EU-funded project coordinated by NOC, is creating new remote ocean sensing technology to support ocean conservation and monitoring.

The project has developed and demonstrated nine innovative technologies that could revolutionise how we understand ocean biology, chemistry, and plastic pollution.

Among these ground breaking solutions are five advanced sensors, two high-tech imaging systems for studying seabed and pelagic life, as well as plastics. There's also a cutting-edge sampler designed to collect particle samples and a novel AI-driven image processing method that compresses data and transmits information more efficiently.

To bring these technologies to life, the team tested and integrated them across a range of platforms at the Plocan facility in Gran Canaria. Here, seven of the newly developed technologies were combined and integrated into four different autonomous vehicles, including two of NOC's cutting-edge Autosub Long Range (ALR) better-known as Boaty McBoatface.

This also provided a unique, hands-on learning experience for a diverse group of students and technicians from ODA (Official Development Assistance) states. They supported with the preparation and management of the deployments, gaining invaluable, multidisciplinary training that blended theory with real-world application.

NOC is a pioneer of ocean technology – pushing the boundaries of endurance and capability each time we make a deployment.

Two Autosub Long Range (ALR) vehicles being prepared in the Plocan facility, Gran Canaria

© Plataforma Oceánica de Canarias

AUTONOMOUS MARINE MONITORING

Working with the University of Southampton (UoS) and the Department for Environment, Food and Rural Affairs (Defra), we demonstrated the potential for using autonomous underwater vehicles with innovative imaging technology to meet UK Government marine monitoring ambitions.

An Autosub Long Range (ALR), deployed from shore with a UoS "BioCam" three-dimensional seafloor imaging system, completed a fully autonomous survey of the Central Fladen Nature Conservation Marine Protected Area (MPA) in the northern North Sea. Using BioCam, geo-referenced, colour corrected conventional still images and corresponding seafloor texture and microtopographic maps were generated.

Using an ocean robot without the use of a research vessel reduced costs, supported net zero goals and generated higher quality seafloor mapping data and photography, comparable to ship-deployed systems.

The project, part of Defra's Marine Natural Capital and Ecosystem Assessment programme, also helps deliver the "Big Data" needed by data-driven machine learning tools to map and assess our marine natural capital and the benefits it provides.

TOXIC ALGAE DETECTION BREAKTHROUGH

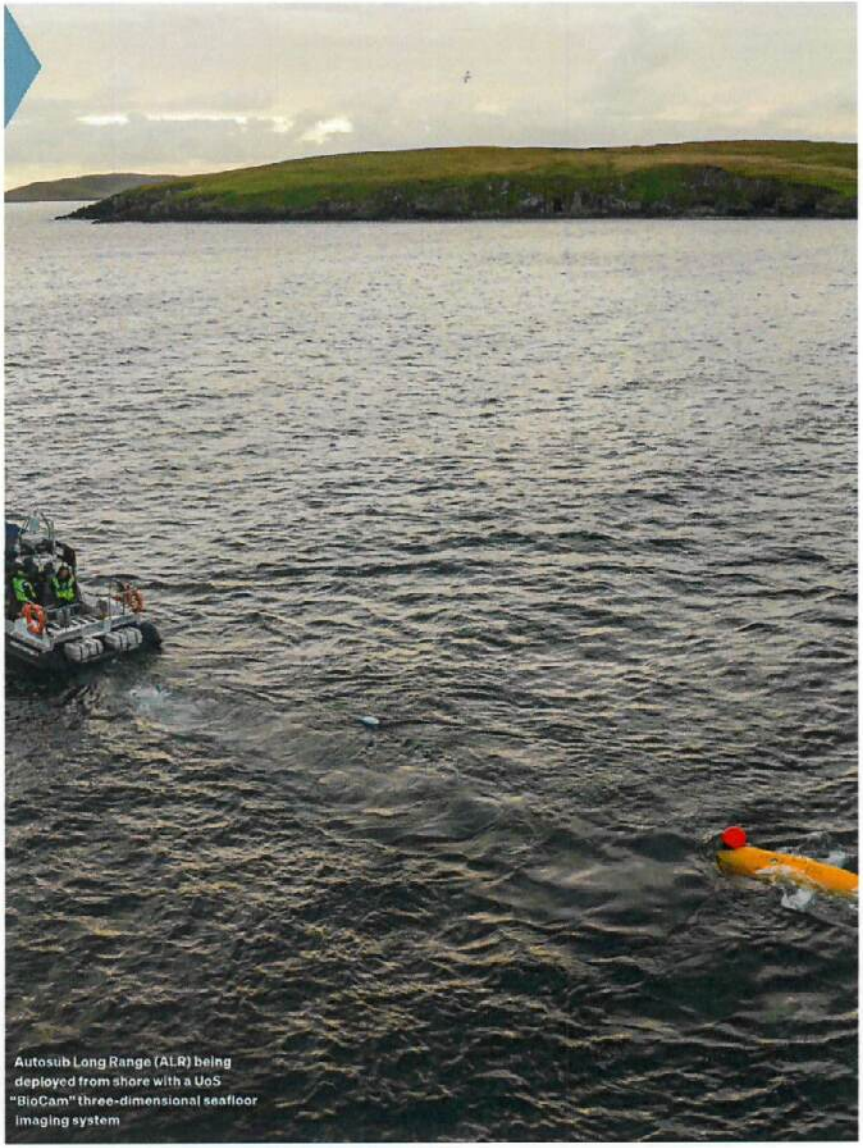
Our scientists developed a faster way to test for toxic algae, helping local authorities to mitigate the risks to people, seafood producers and wildlife.

The new method, based on novel environmental DNA testing, where water is tested for organisms' DNA, is faster and more accurate than traditional methods of identifying algae. It also helped validate new artificial intelligence (AI) driven models for predicting the occurrence of harmful algal blooms earlier.

This includes Dinophysis, which produces a toxin that can enter the food chain when near seafood production areas and attacks human digestive systems, causing pain and sickness.

Testing was carried out in 2021 – 2022 in St Austell Bay, Cornwall, famous for its seafood and for being a hotspot for toxic marine algae.

We worked in collaboration with Cornwall Port Health Authority, the University of Glasgow, the University of Exeter and Cefas.



Autosub Long Range (ALR) being deployed from shore with a UoS "BioCam" three-dimensional seafloor imaging system

NOC produced a short animation to explain AMS, available at youtu.be.com/WpmZyfW-2Qw

STEMM-CCS will be pioneering sub-seafloor CO_2 release near a platform in the UK North Sea

AUTONOMOUS MONITORING SERVICE

Our world-leading scientific research combined with our unique proven engineering capabilities in autonomous underwater vehicles and seabed landers, has enabled us to develop a new turn-key solution for carbon capture storage (CCS) monitoring.

This solution, known as Autonomous Monitoring Service (AMS), utilises our own intelligent seabed landers for points of special geological interest that require continuous monitoring. This ensures maximum environmental protection for any offshore CCS activity with the potential addition of autonomous vehicle technology for wide area monitoring and additional scientific sensing capabilities.

ADVANCING OFFSHORE CARBON CAPTURE & STORAGE (CCS) MONITORING

2023 saw the successful conclusion of a major international demonstration advancing offshore CO_2 storage, a crucial capability for mitigating future climate change. Project Greensand injected CO_2 into disused North Sea oil and gas wells for long-term storage, marking the world's first cross-border storage of CO_2.

NOC played a crucial role in this project through development and demonstrations of its CO_2 monitoring technology. In a previous EU-funded project, STEMM-CCS, NOC developed advanced chemical sensors for pH and total alkalinity, key parameters which can detect the presence of dissolved carbon in the sea, and showed that these can be used to monitor CO_2 storage facilities offshore. For Project Greensand, this monitoring system was further developed to operate longer and with lower power consumption, which is essential for sustained deployment.

This project underscores our pivotal role in advancing monitoring solutions critical to the success and safety of offshore CCS, and illustrates NOC's strength in developing technology for both scientific research and which supports market-driven climate change mitigation efforts.

INVESTING IN APPLIED SCIENCE

Our trading subsidiary NOC Innovations has continued to invest in applied scientists, with seven now in the team.

This included, as part of our BORA Blue Ocean Research Alliance® with Subsea7, a high-impact project looking at Grey Trigger fish populations in Southern Brazil. It also saw blue carbon evaluations for Allonby Bay, part of a Department of the Environment, Food, and Rural Affairs Highly Protected Marine Areas pilot, with NOC analysing cores from the bay for carbon sediment stocks and showing that it's possible to assess the rate of carbon deposition within Highly Protected Marine Areas (HPMAs).

EYES IN THE OCEAN

In partnership with Subsea7, we launched the BORA Blue Ocean Research Alliance®'s Eyes in the Ocean (EITO) project, which utilizes advanced ROV technology to explore uncharted ocean depths. Leveraging Subsea7's unique operational access, the project captures detailed footage of marine life in remote locations, providing critical data for scientific analysis.

Our scientists analyse these observations, contributing valuable insights into the diversity, distribution, and behaviour of elusive marine species. Building on the legacy of the SERPENT project, EITO is expanding our understanding of deep-sea ecosystems, with the potential to inform future marine policy and global scientific research.

The Eyes in the Ocean (EITO) project utilises Subsea7's advanced ROV technology to explore uncharted ocean depths

SECURING AGAINST MARINE RELATED DISASTERS

Protect people and economic infrastructure from marine-related disasters

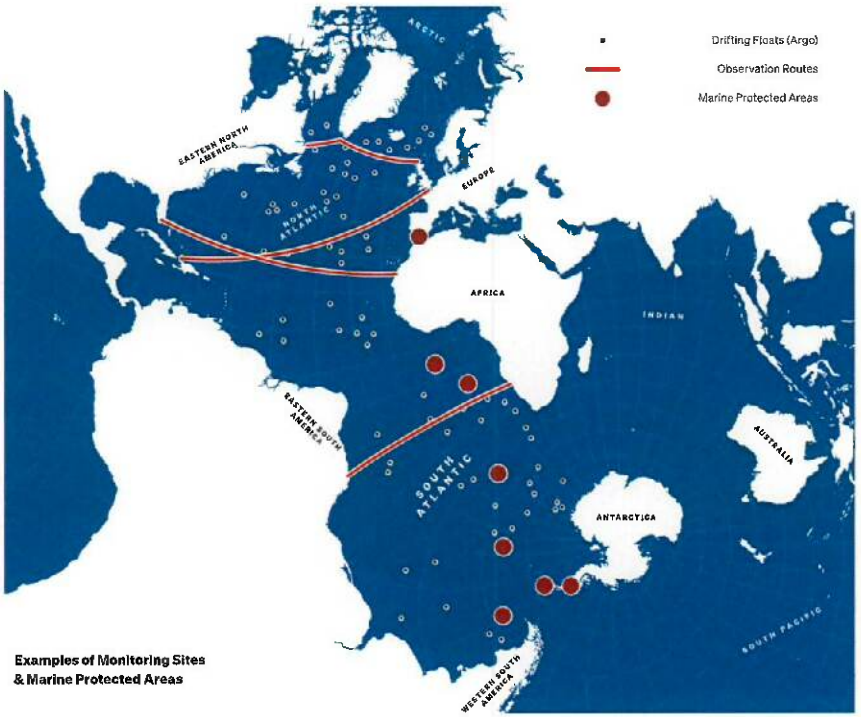
As our environment changes the risks to human lives and economic infrastructure is growing.

We act to safeguard coastal regions and marine-dependent industries against a wide spectrum of marine-related disasters, from formidable storms and tsunamis to the dangers posed by rising sea levels and coastal erosion.

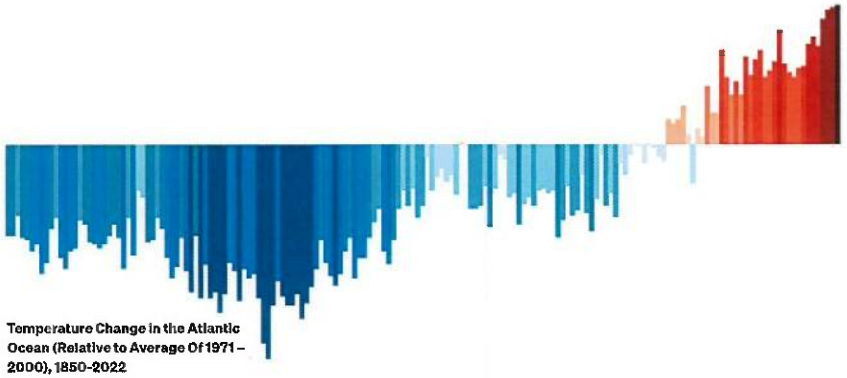
Our goal is to empower communities and industries with the tools and knowledge they need to prepare for potential disasters, but also to respond effectively and recover swiftly.

We achieve this through a multifaceted approach using the latest research, data-driven forecasting and innovative solutions that strengthen resilience and protect lives and livelihoods.

SEA



Examples of Monitoring Sites & Marine Protected Areas



Temperature Change in the Atlantic Ocean (Relative to Average Of 1971 – 2000), 1850-2022

LEADING NATIONAL CAPABILITY

Our ground breaking Climate Linked Atlantic Sector Science (CLASS) project completed in March 2024. The six-year, Atlantic-focused programme's goal was to evaluate how climate change and human exploitation impact the ocean. The results are extensive contributions to our understanding of the Atlantic Ocean system.

CLASS delivered sustained ocean observation, world-class model development to predict future oceanic conditions and use of state-of-the-art technologies to gather highly precise ocean data.

Critical knowledge gaps around ocean variability, climate regulation and ecosystems services were addressed while analyses were performed on the ocean's response to climate change and human activities, with more than 600 related publications to date.

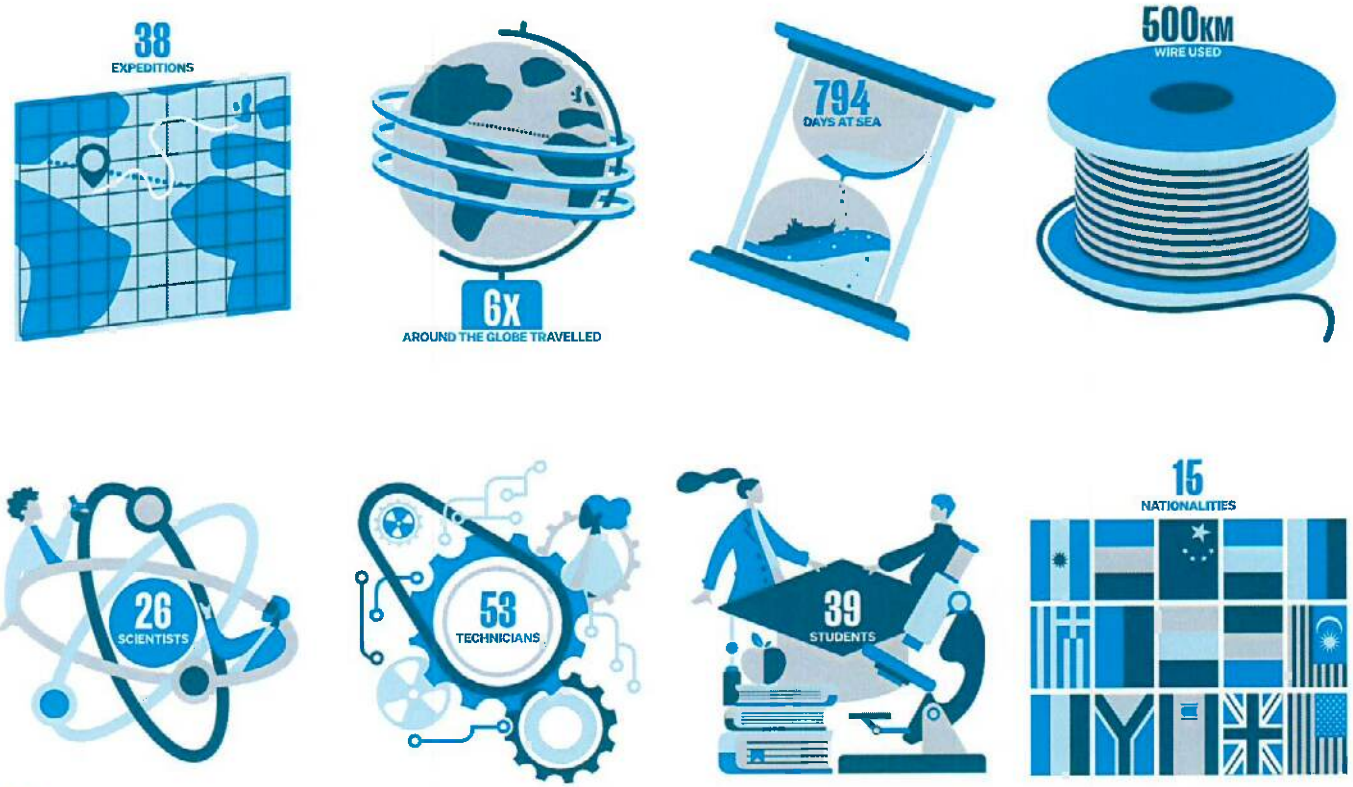
Key collaborators on the NERC-funded project were the Scottish Association for Marine Science (SAMS), Plymouth Marine Laboratory (PML), as part of Marine National Capability underpinning activities.

Its success has driven the new, NERC-funded Atlantic Climate and Environment Strategic Science (AtlantiS) programme.

AtlantiS, in collaboration with SAMS, PML and the Marine Biological Association, will continue to deliver sustained ocean observations, supporting national and international research and policy.

This includes responses to key climate change effects such as marine heatwaves, sea level rise and increasing storm intensity, as well as supporting the UK's ambition for healthy, biologically diverse and resilient marine environments, a sustainable blue economy and keeping communities safe from natural hazards.

As part of the AtlantiS programme, NOC will deliver next-generation climate, ocean and coastal modelling for predicting and understanding environmental change and deploy new technologies to further enhance autonomous ocean observing capabilities, supporting UK lower-carbon goals and expanding observing capability.



20 YEARS OF RAPID

This year marked the 20th anniversary expedition of our Atlantic Meridional Overturning Circulation (AMOC) research, part of the RAPID programme. The AMOC, a crucial current system in the Atlantic Ocean, significantly impacts climate patterns. Without an effectively operating AMOC, we will likely experience increasingly extreme weather systems, with the potential to impact everyone on the planet. This makes our AMOC observing arrays, crucial in continuously improving understanding and prediction of the potential impacts of an AMOC slow down or collapse.

This milestone expedition onboard the RRS *Discovery*, in collaboration with the University of Miami and the National Oceanic and Atmospheric Administration (NOAA), serviced the RAPID-AMOC 26°N array, one of the world's longest-running deep-ocean observation arrays, deployed in 2004. Throughout these 20 years, the array has transformed our understanding of AMOC variability and its effects on climate and weather.

A RAFOS Float being deployed as part of the Overturning in the Subpolar North Atlantic Program (OSNAP)

10 YEARS OF OSNAP

Scientists from NOC and the Scottish Association for Marine Science (SAMS) celebrated a decade of monitoring the Atlantic Meridional Overturning Circulation (AMOC) as part of the Overturning in the Subpolar North Atlantic Program (OSNAP), focuses on the AMOC component flowing through the Rockall Trough and Iceland Basin.

Marking the 10th anniversary of OSNAP array data, it represents a significant international effort to understand AMOC changes. This voyage was also the first under the new AtlantiS programme, which studies the ocean's role in climate change mitigation. Departing from Aberdeen on July 3 and arriving in Reykjavik on July 28, the expedition recovered and redeployed instruments measuring ocean properties and currents. The expedition utilised new technologies, including lab-on-chip sensors and advanced telemetry, to enhance our data collection and remote monitoring capabilities.

EMPOWERING THE NEXT GENERATION FOR FLOOD MITIGATION

We are playing an integral role in a new NERC-funded FLOOD Centre for Doctoral Training, supported with £2.6 million NERC funding.

The centre, co-directed by NOC's Professor Jenny Brown, will educate the next generation of PhD students with a better understanding of flooding using advanced monitoring and new forms of computer modelling, artificial intelligence and machine learning to map and forecast future flooding risks.

This will drive a talent pool of environmental experts invested in protecting against rising river, rainfall and sea levels and make the UK – where one in six households are in flood-prone areas – more resilient to flooding.

The FLOOD centre includes experts from the universities of Southampton, Bristol, Loughborough and Newcastle, NOC, UK Centre for Ecology and Hydrology and British Geological Survey.

It also has an additional 37 partner organisations across the UK, from local and national government to water, energy and infrastructure companies, finance and (re)insurance companies and charities.

FLOOD CDT will educate the next generation of PhD students to map and forecast future flooding risks

Advanced NOC-operated underwater gliders are dramatically improving North Sea data collection

ADVANCING WEATHER FORECASTING

A collaboration with the Met Office is helping to improve the accuracy of weather forecasting and generate better analyses of the state of the North Sea utilising our advanced ocean modelling.

By using advanced NOC-operated underwater gliders, the three-year project is dramatically improving North Sea data collection and enabling key data, such as salinity and temperature data to be sent to the Met Office in near real-time for weather and ocean forecasts, vital for vessels operating in the North Sea.

The data is also fed, daily, into Met Office forecast models and is part of a wider programme to increase how much observational data is available for use in models run on their new supercomputer, supporting continuous forecast improvement efforts.

Stephen Woodward, Engineering Manager, said:

"The data gathering potential of gliders is a key driver for this project which will, in time, support decision making in vital UK services, including search and rescue, counter-pollution and ocean biodiversity."

CONTRIBUTING CRITICAL CLIMATE DATA

We contributed to the prestigious Bulletin of the American Meteorological Society's Annual State of the Climate Report, led by NOAA's National Centers for Environmental Information. This report, involving over 530 scientists from 60 countries, provides a comprehensive overview of Earth's climate.

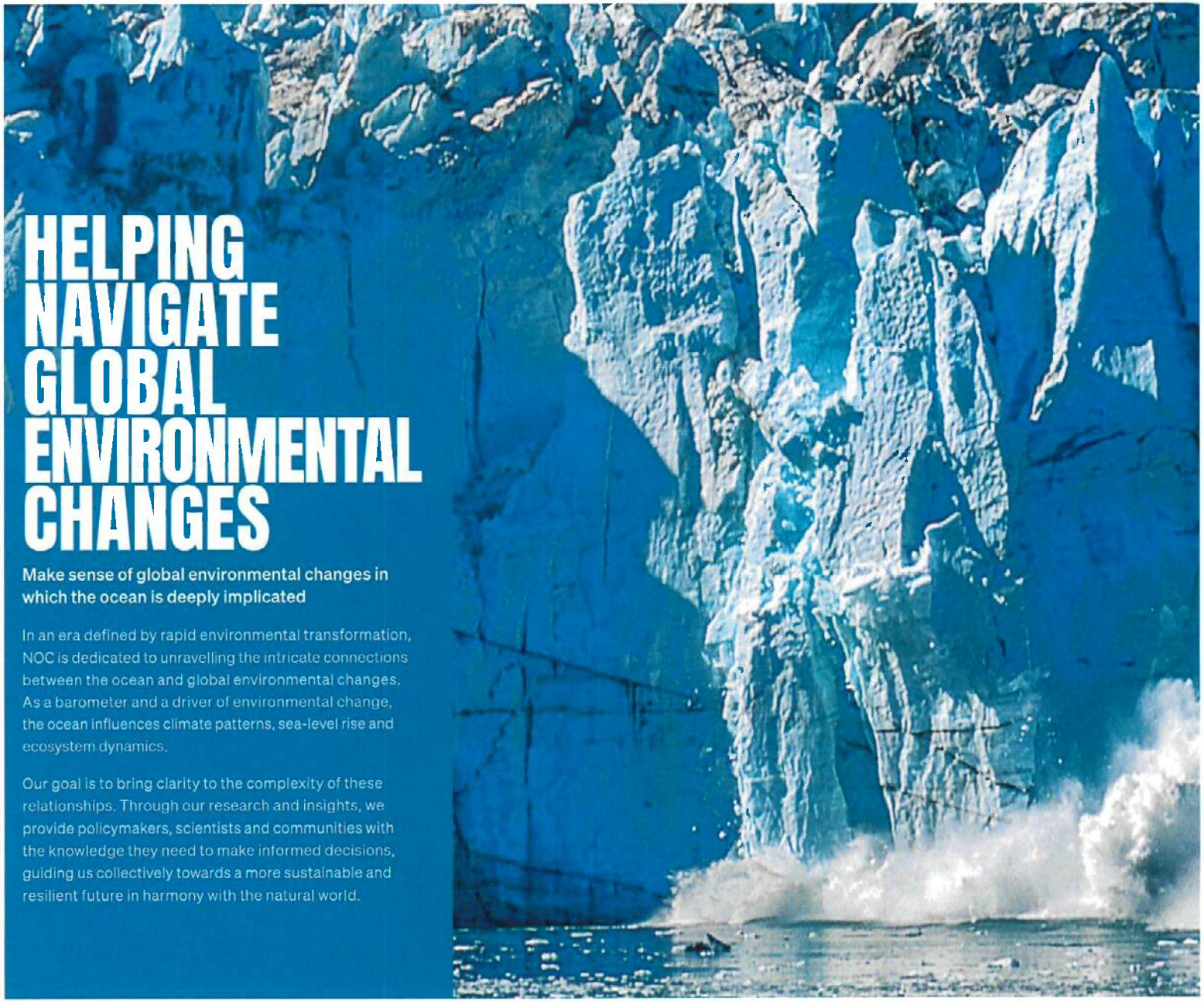
Our contribution included a unique marine air temperature dataset derived from 140 years of ship-based records. This meticulously quality-controlled dataset, regularly updated by our scientists, offers a critical perspective on modern climate change by placing contemporary data in the context of the past century, enriching our understanding of anthropogenic impacts on the global ocean.

HELPING NAVIGATE GLOBAL ENVIRONMENTAL CHANGES

Make sense of global environmental changes in which the ocean is deeply implicated

In an era defined by rapid environmental transformation, NOC is dedicated to unravelling the intricate connections between the ocean and global environmental changes. As a barometer and a driver of environmental change, the ocean influences climate patterns, sea-level rise and ecosystem dynamics.

Our goal is to bring clarity to the complexity of these relationships. Through our research and insights, we provide policymakers, scientists and communities with the knowledge they need to make informed decisions, guiding us collectively towards a more sustainable and resilient future in harmony with the natural world.



An example of a hydrothermal vent which are commonly found on the seafloor along mid-ocean ridges

UNDERSTANDING DEEP-SEA WEATHER

Sustained ocean observations by NOC scientists revealed that deep ocean currents are more complex than previously thought.

The study, published in Nature Geoscience, used data from 34 deep sea moorings, deployed over four years in up to 2,500 m water depth offshore Mozambique.

They showed that currents sped up, slowed down, changed direction and sometimes reversed direction completely, depending on the varying and uneven surfaces and features on the ocean floor.

The results challenge previous models, which suggested that these currents would be continuous and steady.

The findings will help improve the understanding of how sediment, including life sustaining nutrients, carbon, microplastics and other pollutants, are transported and accumulate around the planet.

Better understanding of how deposits have ended up where they are can also help provide important clues about the potential impacts of future ocean changes.

HYDROTHERMAL VENT DISCOVERY

With partners at the universities of Plymouth and Southampton and British Antarctic Survey, we found that hydrothermal vents could provide a vital source of nutrients for phytoplankton in the Southern Ocean.

In research published in Nature Communications Earth & Environment, we showed that the nutrients iron and manganese are released in boiling water from hydrothermal vents deep underwater and can reach the ocean surface where phytoplankton live.

This helps boost a critical component of the Earth's carbon cycle because these phytoplankton use carbon dioxide from the atmosphere to grow and then trap it in the ocean.

The remote Southern Ocean, where the NERC-funded study was carried out, is known to have a critical shortage of these nutrients, suppressing how fast phytoplankton use and store carbon dioxide. Understanding this natural source of these metals helps to assess the impact of proposed climate interventions such as artificial ocean fertilisation.

UNCOVERING SEAFLOOR BIODIVERSITY

A NERC-funded expedition aboard the RRS *James Cook* explored the abyssal Pacific seafloor, particularly the Clarion Clipperton Zone (CCZ), as part of the SMARTEX project. This research, endorsed by the UN Ocean Decade, involved scientists from NOC, the Natural History Museum and several other institutions. They used advanced technologies, including Autonomous Underwater Vehicles (AUVs) and robotic systems, to study the biodiversity of this remote area.

The team collected biological and geochemical samples as well as hundreds of thousands of images to identify new species and understand deep-sea ecosystems. The expedition also mapped the area, studied deep-water ocean circulation and investigated animal recolonisation. This work provided crucial baseline data for conservation and management of potential impacts to this area.

OCEAN CARBON DYNAMICS

Our scientists discovered a significant time difference in the rate of particles sinking to the ocean floor, a key factor in understanding how the ocean can combat climate change.

The data, collected at the Porcupine Abyssal Plain Sustained Observatory (PAP-SO) in the Northeast Atlantic, highlights the critical role of the upper ocean ecosystem in carbon sequestration. Located nearly 5000 meters deep, 300 miles southwest of Ireland, PAP-SO has been monitoring oceanic changes since 1989. The research shows that the ecosystem's structure, not just plant growth rates, significantly impacts how carbon is stored.

This discovery is crucial for understanding the Biological Carbon Pump, which helps the ocean absorb about 30% of human carbon emissions. PAP-SO's ongoing observations, supported by a specially designed buoy and sensors, allow scientists to detect changes, inform policy, and advance climate change mitigation efforts.

An Amperima sea cucumber captured at ~4000 m, grazing on sediment covering the seafloor

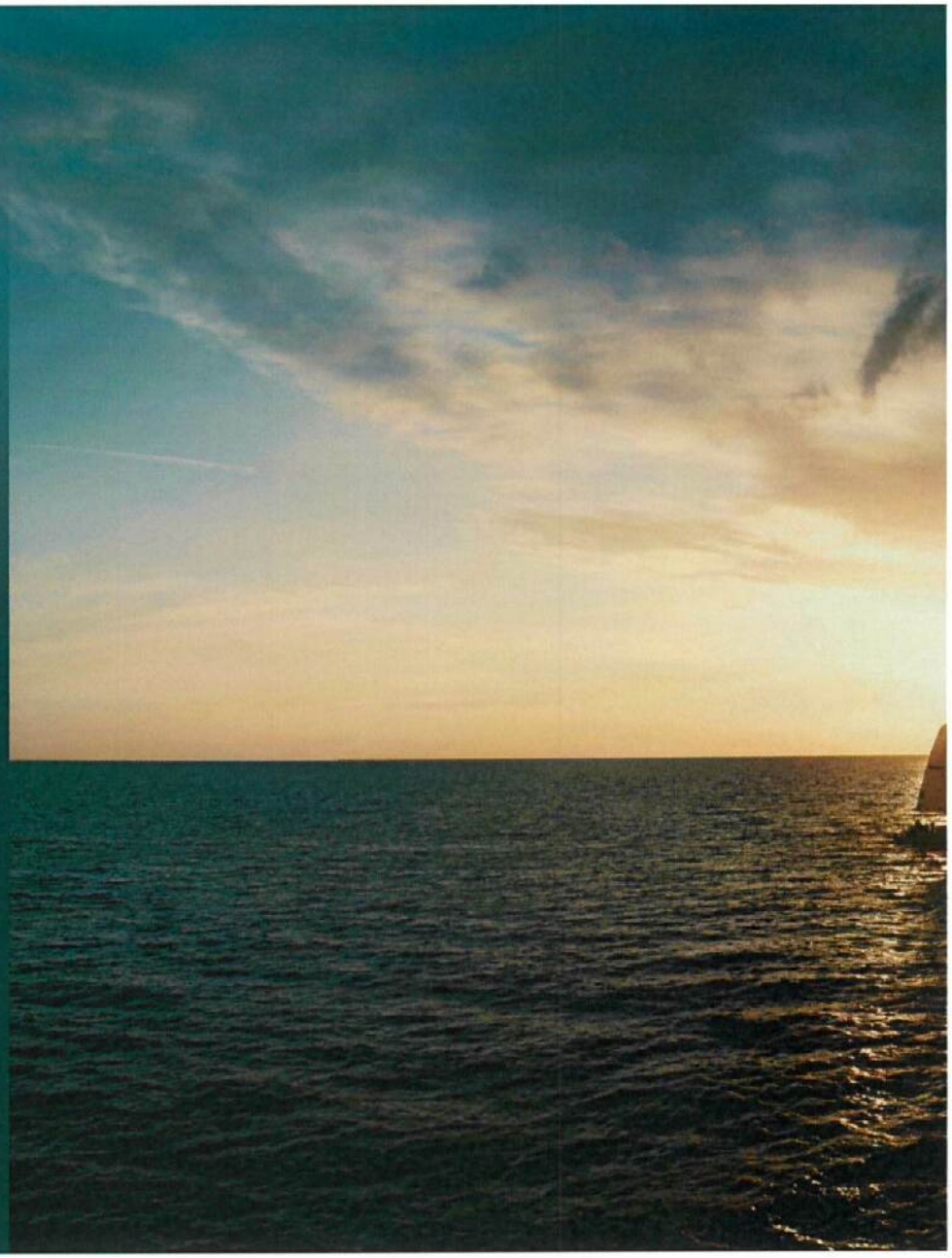
Porcupine Abyssal Plain Sustained Observatory (PAP-SO) moorings being deployed off RRS *Discovery*

RAISING OCEAN AWARENESS AROUND THE WORLD

Educate humankind to understand scientific evidence about the ocean's role in our lives

Our one ocean is not merely a distant realm, it is an integral part of our daily lives, influencing weather patterns, regulating our climate and providing sustenance for billions. As a leading ocean research organisation, we provide scientific evidence to inform discussions, evoke wonder and enhance awareness of the ocean's immense significance.

Our expert researchers, engineers and ambassadors engage with diverse stakeholders, from local community groups and schools to national and international change makers, to foster a deeper understanding of the ocean's profound impact on our world.



OCEAN OPEN DAY

We were delighted to welcome visitors back to our Southampton site for on-site open day events on June 8, World Ocean Day, marking our first since 2019 due to the effects of COVID-19.

Over two days, we opened our doors to local schools and the wider public to inspire, empower and spread awe about the ocean, its importance in our lives and what we're doing to help protect it and the benefits it brings to us.

During the hugely successful schools open day, 25 teachers and 190 pupils, aged 9-13, from twelve primary and secondary schools, engaged with exhibits around the building, with lots of opportunities for them to get hands on and interactive.

Teachers' comments included:

> "It was amazing and has created permanent positive change amongst our pupils. We have so many ideas in moving forward and are so grateful to have been included in this visit. Our children came straight back and asked to create a new Responsible Role 'Oceanographers'."

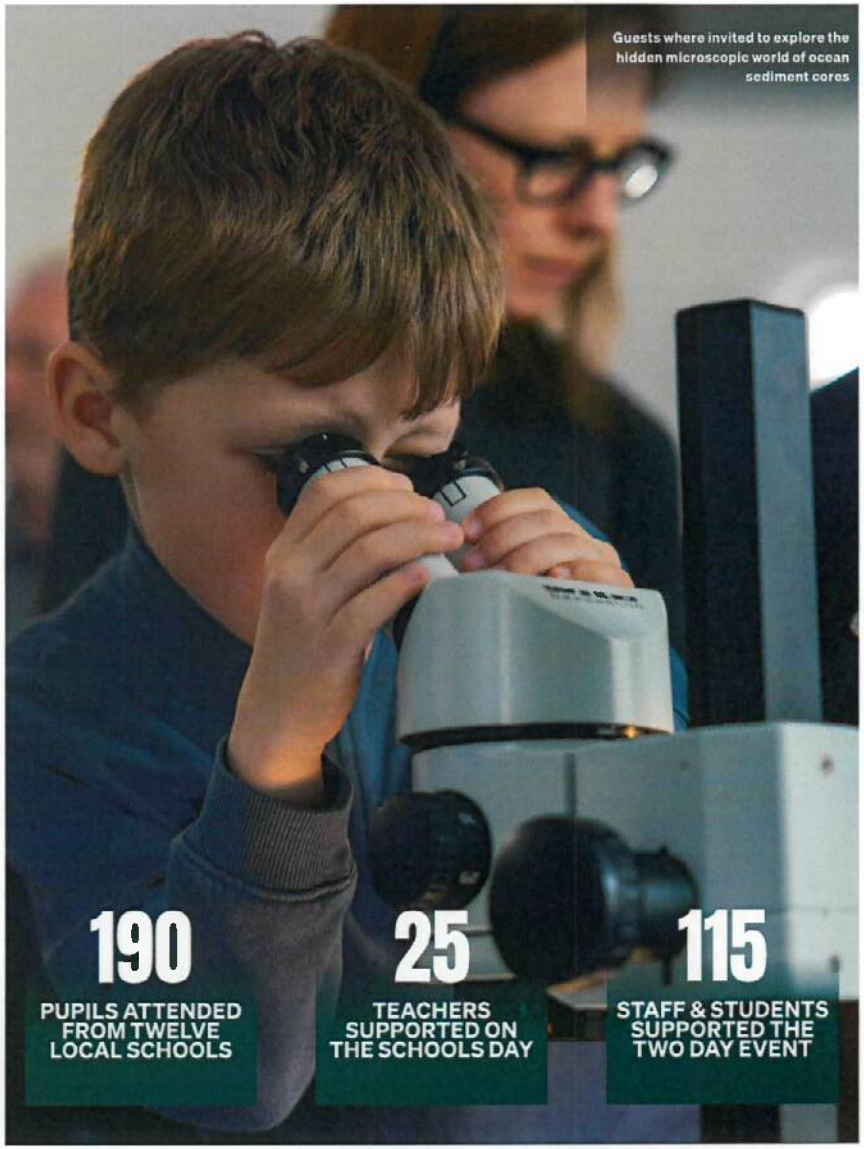
During the wider public open day, attended by 1,300 people, we had seventeen exhibits across six locations.

Autosub Long Range (ALR) attracted huge interest, as did the exhibits on Discovering the Deep (ROV), the Discovery Collections, Marine Geohazards, and life on board a research ship. The public also showed keen interest in the need for climate change, pollution, biodiversity and habitat loss research.

The event was a success thanks to support from 115 NOC staff and students during both days and many others in the days and weeks before the open days.

1,300+
OCEAN OPEN DAY ATTENDEES ACROSS TWO DAYS

17
UNIQUE EXHIBITS ACROSS SIX LOCATIONS



Guests where invited to explore the hidden microscopic world of ocean sediment cores

OCEAN ROBOTS UNDER THE SPOTLIGHT AT POP23

We were thrilled to feature in Protecting Our Planet Day 2023 (POP23) in November. The event offered a full day of inspiring climate talks, interactive activities and effective solutions, across life on Earth and in space, to thousands of learners around the UK.

Senior Robotic Systems Engineer Matt Kingsland reported on the most recent travels of ALR, and how it is working hard to monitor and protect the UK's cold-water corals. The segment, part of the "Protecting our Ocean" session, reached an incredible 54,696 learners, including 51,600 young people and 3,096 adults.

54,696
LEARNERS REACHED DURING THE SESSION

94%
OF THOSE REACHED WERE YOUNG PEOPLE

Protecting Our Planet Day (POP) is an inspiring live-streamed event taking place every November

Chief Scientist Professor Penny Holliday appearing on our award winning podcast, Into the Blue

FIRST PODCAST MINI-SERIES

Our award-winning podcast, Into the Blue, launched its first ever mini-series this year diving deep into the subject of the Atlantic Meridional Overturning Circulation (AMOC). Guests from universities from across the UK and some of our own scientists, including Chief Scientist Professor Penny Holliday, came together to educate listeners about what the AMOC is, how we observe it and the consequences of its decline on the climate over four episodes.

The series was met with a positive reception and featured some of the podcast's most popular episodes, especially on YouTube where we gained over 8,000 views. As our audience continues to grow Into the Blue's third season, launched this summer, promises to be bigger and better than ever with new guests and subjects.

31,900
TOTAL PODCAST VIEWS AND LISTENS

INSPIRING COLLABORATION FOR OCEAN ACTION

We hosted our third parliamentary reception, titled "Ocean Challenges, Ocean Solutions", at the House of Commons, to discuss the ocean research and innovation needed to protect our ocean, planet and people.

The event saw leading experts from NOC come together with ocean stakeholders from across a wide range of industries, government and academia to facilitate vital discussion, innovative partnerships and collaboration for ocean action.

Across the key topics of climate change, biodiversity loss and pollution, lively conversation explored the importance of research in informing solutions for our ocean and climate, and the vital collaboration needed across sectors for this research to translate into action.

The work of the All-Party Parliamentary Group (APPG) for the Ocean was also presented, including the launch of the group's second inquiry report on the "Future of Ocean Technology" and the APPG's support of the Biodiversity of Areas Beyond National Jurisdiction Treaty.

SCIENCE BURSARY

We have continued to host the collaborative West P&I Science Bursary to empower students and early career researchers in the field of marine science or oceanography.

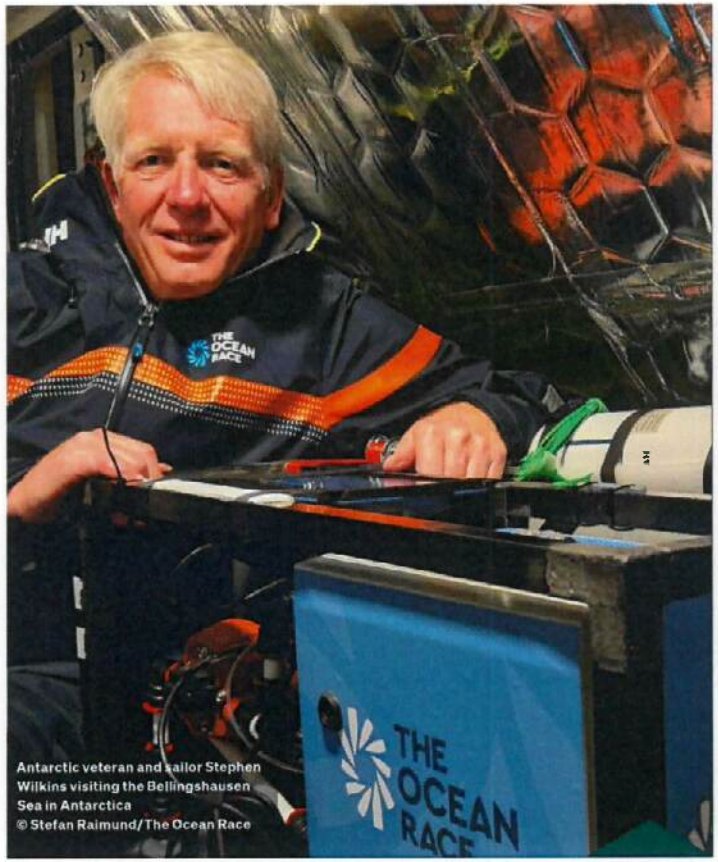
Students selected for the latest round of the bursary receive six months' support from world-leading NOC scientists Dr Alice Horton, Dr Claire Evans, Dr Vanessa Monteleone, Dr Tillys Petit, Dr Sophie Clayton and Dr Sourav Sahoo.

Holly Evans, Head of Strategic Partnerships at NOC, said:

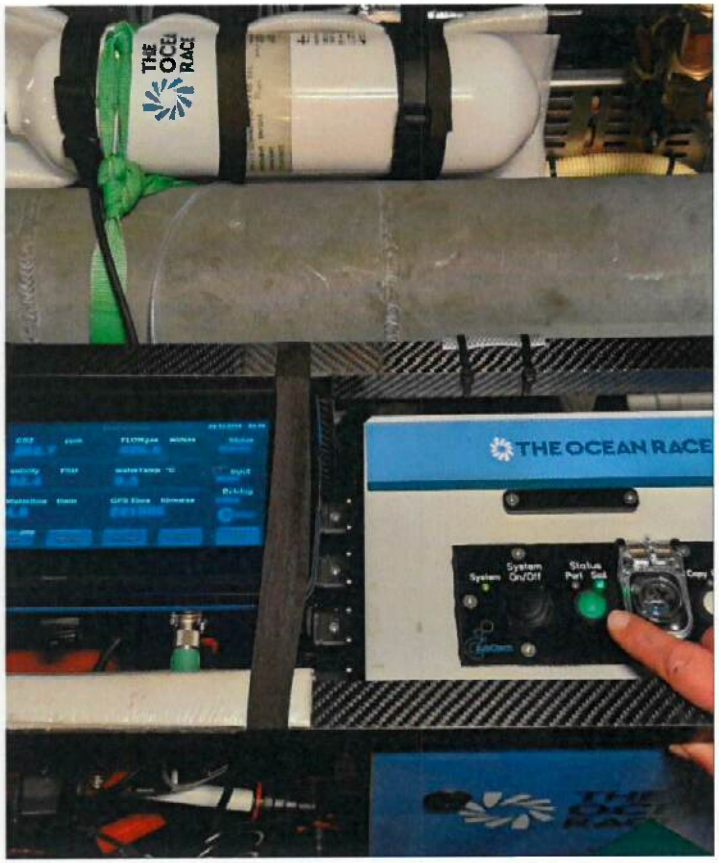
> "We have a vital role to play in supporting the next generation of ocean scientists and this is a great opportunity for the students as well as the mentors."

The bursary, led by NOC's Dr Ben Moat, has been made available through the generous support of West of England P&I Club, a leading insurance provider to the global maritime industry.

Dr John Siddorn hosting "Ocean Challenges, Ocean Solutions" at the House of Commons



Antarctic veteran and sailor Stephen Wilkins visiting the Bellingshausen Sea in Antarctica
© Stefan Raimund/The Ocean Race



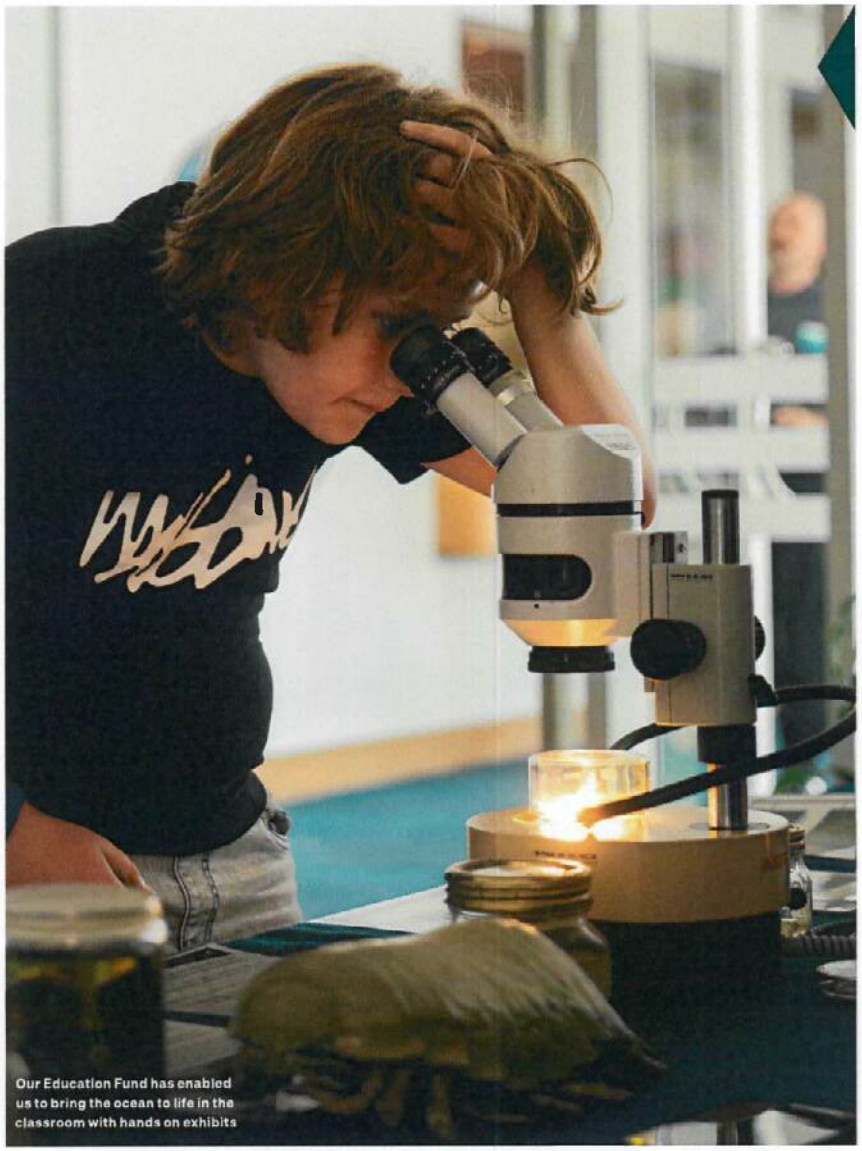
MICROPLASTICS MISSION

We supported a pioneering collaborative science mission to undertake the first analysis of tiny microplastics (down to 30 microns) in Antarctica. Using a sailing yacht designed for polar expeditions, Antarctic veteran and sailor Stephen Wilkins visited the Bellingshausen Sea in Antarctica, spending two months amidst the ice, capturing 60 water samples – 40 while sailing and 20 while anchored.

Our scientists then helped to analyse the samples to understand the number, size and chemical composition of microplastics present using cutting-edge analytical techniques.

The project was driven by The Ocean Race, on which NOC is a scientific collaborator, with the goal of understanding the abundance, characteristics, sources, fate and impacts of microplastics – crucial for our understanding of the risks these contaminants pose to the unique Antarctic ecosystem.

The Ocean Race is contributing scientific data to the Ocean Decade Odyssey project, an endorsed Project of the UN Decade of Ocean Science for Sustainable Development.



Our Education Fund has enabled us to bring the ocean to life in the classroom with hands on exhibits

NEXT GENERATION OF OCEAN GUARDIANS

This year, we launched our Education Fund, enabling businesses and philanthropists to support the education future ocean lovers. Supporting NOC's education projects will inspire future generations of ocean scientists and explorers, bring STEAM (Science, Technology, Engineering, Arts and Mathematics) learning to life through the expertise of scientists and engineers from diverse disciplines, create essential resources for both national and international communities, offer leading support for early career researchers and postgraduates, and safeguard the future of our oceans.

We play an important role in education and training future generations of scientists and informed citizens. If we want to see our ocean and our planet thrive, we must make sure our children understand our ocean and are empowered to shape its future.

Our education work brings STEAM learning to life for children and young adults, connecting them to the wonders of the ocean and the exciting careers that it provides. As well as providing leading training and development for our community of postgraduates and early career researchers.

CPD RECOGNITION

A training course developed by the Marine Environmental Data and Information Network (MEDIN) 'Marine Data Management, Governance and the MEDIN tool set' has been granted Continuing Professional Development (CPD) recognition by the internationally renowned Institute of Marine Engineering, Science and Technology (IMarEST). The accreditation serves as a testament to the course's quality and relevance in fostering expertise among professionals engaged in marine data management and governance.

This endorsement is set to have a positive impact on participants. Professionals completing the course will now earn CPD points, enhancing their professional profile and demonstrating their commitment to keeping up with industry advancements. This recognition also positions the course as a valuable resource for organisations seeking to invest in the continuous development of their marine data management personnel.

ENHANCING SEDIMENT ANALYSIS CAPABILITIES

Our British Ocean Sediment Core Research Facility (BOSCORF) has proudly welcomed the Itrax FleXRay X-ray fluorescence sediment core scanner, providing the only one in the UK capable of handling both wet and dry sediment samples. This advanced scanner builds on our history with Itrax core scanners, which have been in use here since 2004, contributing to over 300 scientific papers, including 100 in high-impact journals.

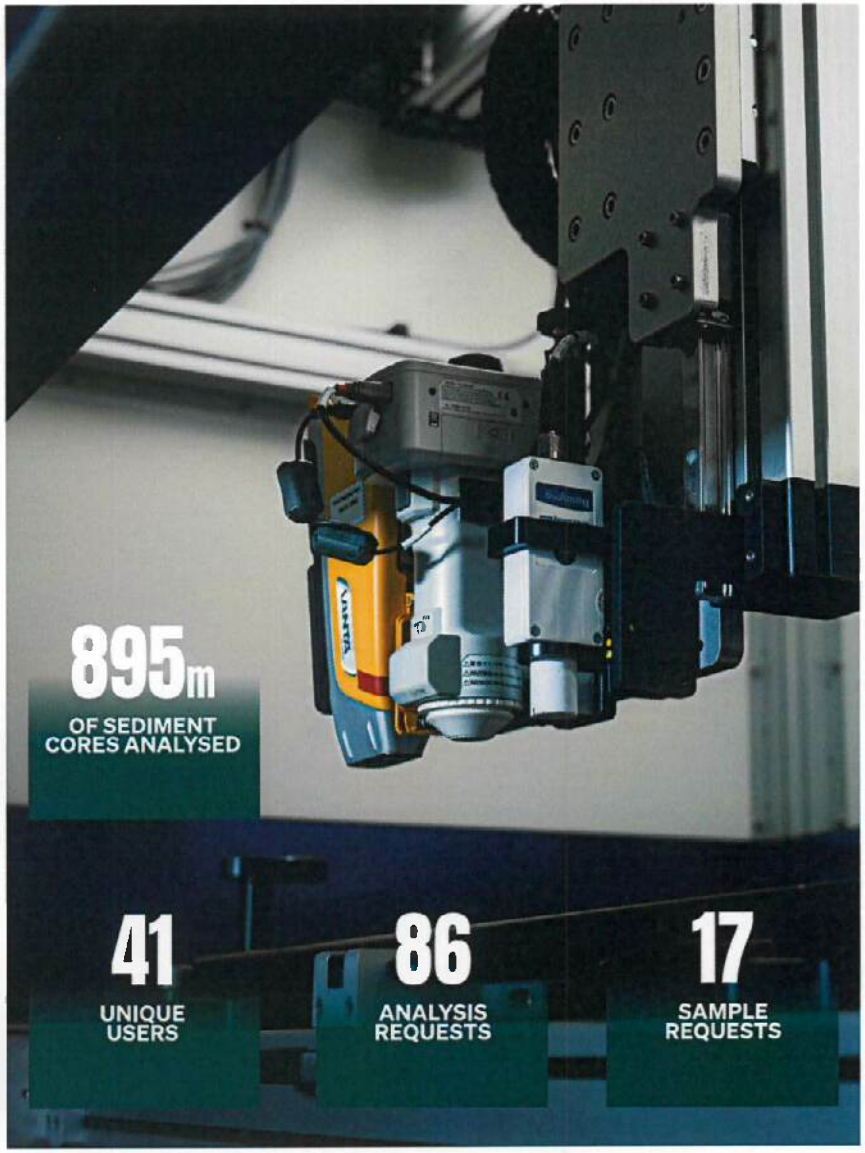
The new FleXRay can measure a wide range of elements, from aluminium to uranium, at resolutions as fine as 200 micrometres up to 1 centimetre. This makes it vital for high-resolution studies, pollution analysis, and sediment provenance assessments. This marks another step in our commitment to offering top-tier analysis techniques to UK and international scientists.

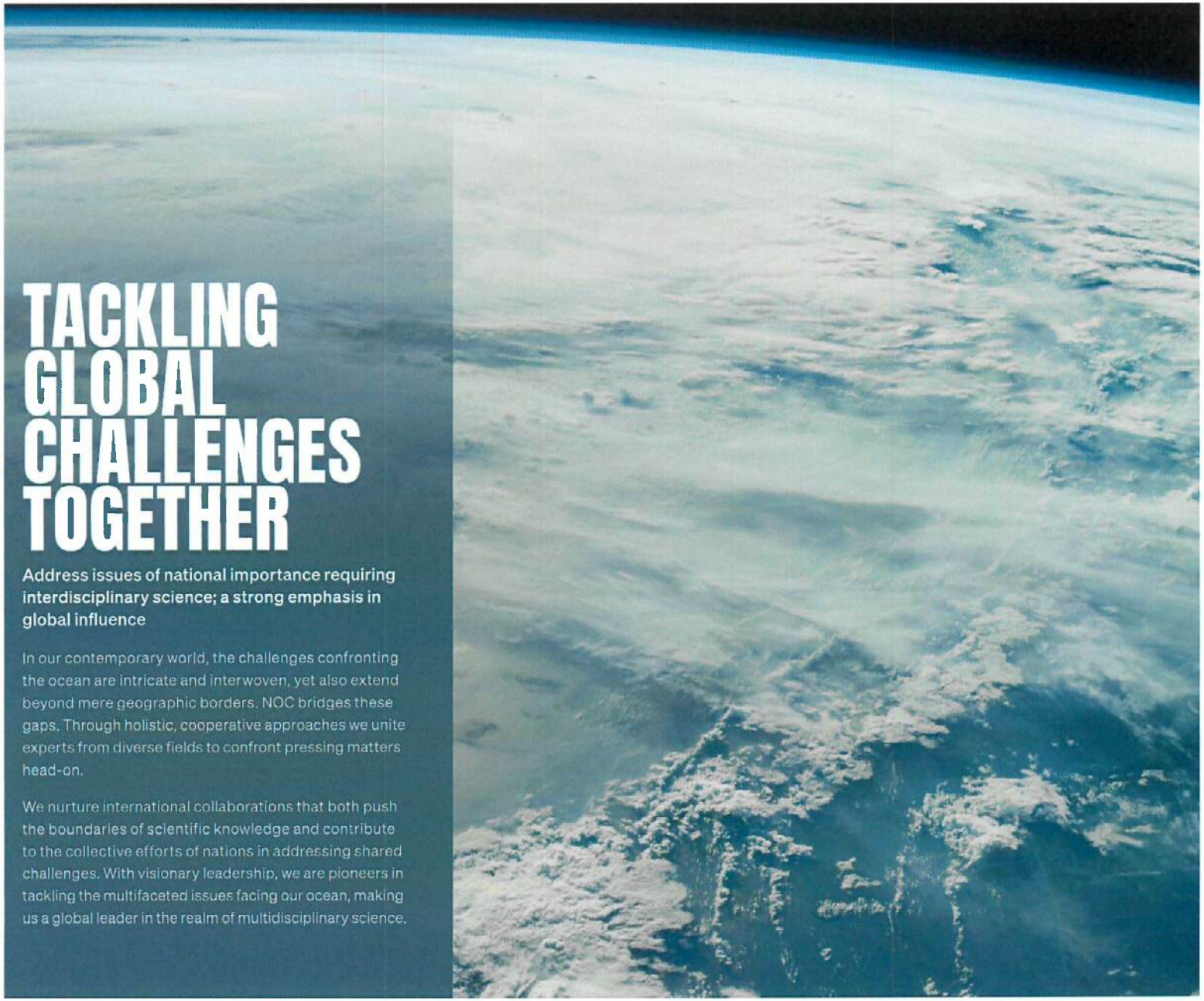
3,732
SEDIMENT CORES APPROXIMATELY

377
SUBSAMPLES COLLECTED

642
HOURS OF ANALYSIS

21
INSTITUTES





TACKLING GLOBAL CHALLENGES TOGETHER

Address issues of national importance requiring interdisciplinary science; a strong emphasis in global influence

In our contemporary world, the challenges confronting the ocean are intricate and interwoven, yet also extend beyond mere geographic borders. NOC bridges these gaps. Through holistic, cooperative approaches we unite experts from diverse fields to confront pressing matters head-on.

We nurture international collaborations that both push the boundaries of scientific knowledge and contribute to the collective efforts of nations in addressing shared challenges. With visionary leadership, we are pioneers in tackling the multifaceted issues facing our ocean, making us a global leader in the realm of multidisciplinary science.

Alan Evans and Jess Allen hosting the Ocean Pavilion at COP28, working with our partners to highlight the need for improved ocean observations

UNITED ON THE GLOBAL STAGE

We attended the 28th Conference of the Parties (COP28) to the United Nations Framework Convention on Climate Change (UNFCCC). As one of the world's leading centres of expertise on the ocean's interaction with climate, we partnered with leaders in ocean science, engineering, and policy to host the Ocean Pavilion

We joined partners of the Ocean Pavilion and associated stakeholders to call on world leaders to support and foster efforts to greatly expand and improve ocean observations worldwide to provide a basis for understanding ongoing natural and anthropogenic change and for planning mitigation and adaptation strategies.

Our delegation also led and participated in several key COP events, discussing hot ocean topics including new Greenhouse Gas Removal Pathways, stressing the need for rapid and rigorous scientific assessment of different approaches.

UN OCEAN DECADE DITTO

Our scientists were prominent at the UN Decade for Ocean Science Digital Twins of the Ocean (DITTO) summit in Xiamen, China. The summit brought to scientists, technologists and users from around the world and resulted in the Xiamen Statement.

GRAND SCIENCE CHALLENGES

NERC's Future Marine Research Infrastructure (FMRI) programme, hosted at NOC, is making headway in developing a business case for investment in marine research infrastructure. Its initial focus is a Science Requirements Framework, "Marine Science in 2040", to shape recommendations, to be delivered at the end of 2025, for future, impactful and sustainable infrastructure.

FMRI also recruited a team of 15 Grand Challenge Champions to lead conversations around five grand science challenges, held roadshow workshops across the UK, as well as virtual meetings and conversations with key stakeholders, with a draft framework due to be presented at the Challenger Conference in September (2024).

FMRI is delivering strategic investment in large-scale, research infrastructure providing access to world class capabilities

SUPPORTING THE UN OCEAN DECADE DIGITAL INFRASTRUCTURE

The Marine Environmental Data and Information Network (MEDIN), hosted at NOC, has now made all the data described on its centralised web portal accessible to the UN Ocean Decade digital infrastructure, Ocean InfoHub.

Accessible ocean data is critical in developing our understanding of global environmental changes. This step has significantly improved the findability of UK marine data, supporting MEDIN's ethos of 'measure once, use many times.' Now, any data archived with an accredited MEDIN data centre, such as our British Oceanographic Data Centre (BODC), can be accessed from Ocean InfoHub.

This milestone has made MEDIN the biggest contributor to this globally important digital infrastructure to date and is another example of MEDIN providing global leadership in this area.

161
DATA DEPOSITS RECEIVED

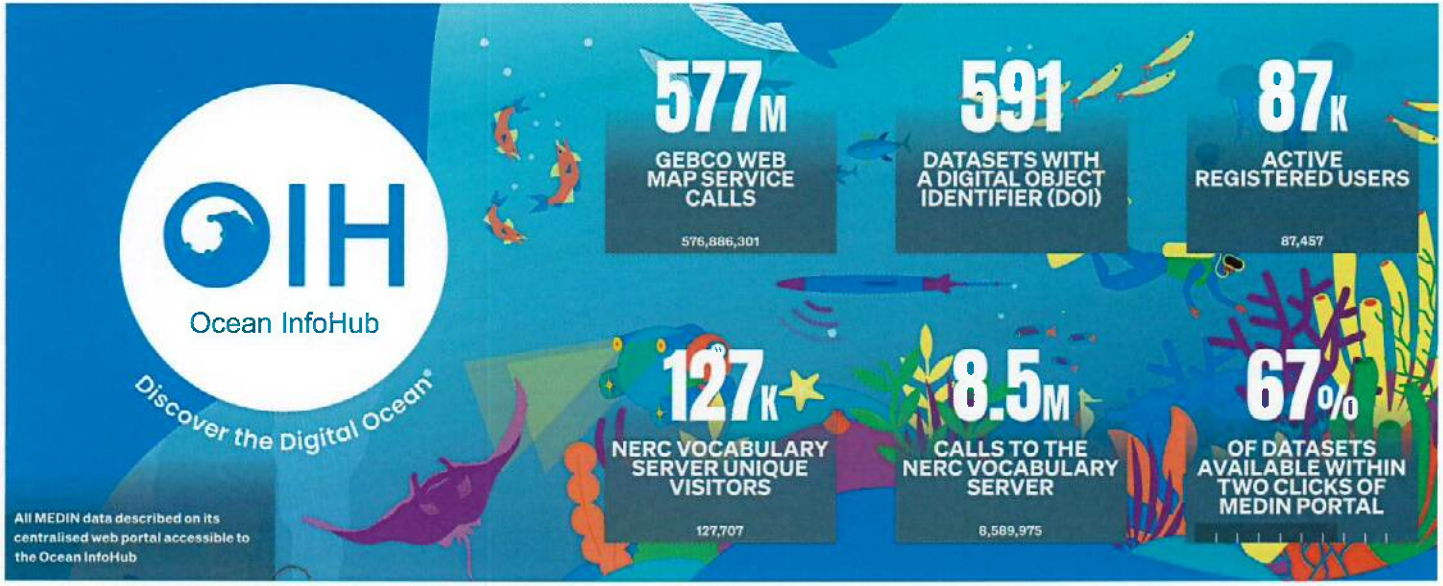
100%
OF CRUISE DATA ARCHIVED WITHIN ONE MONTH OF RECEIPT

8,133
ARGO PROFILES DELIVERED TO THE MET OFFICE IN REAL TIME

70.8%
OF ARGO PROFILES WERE DELAYED-MODE QUALITY CONTROL

469K
DATASETS SETS DOWNLOADED OR DELIVERED ON REQUEST
469,995

358K
BATHYMETRY SETS DOWNLOADED
358,183



SHIPS FOR GLOBAL SCIENCE

In the ever-evolving sea and ocean-scape of scientific exploration, the NOC-operated research ships, RRS *Discovery* and RRS *James Cook*, have led remarkable expeditions in a testament to global co-operation and shared aspirations for the health of our ocean.

RRS *Discovery* and RRS *James Cook* are operated by the National Oceanography Centre on behalf of the Natural Environment Research Council.

RRS DISCOVERY
63.84%
254
SCIENCE SUPPORT
DAYS
13.15%
48
PASSAGE
DAYS
6.03%
22
REFIT
DAYS
1.64%
6
ALONGSIDE
DAYS
7.40%
27
MOBILISATION
DAYS
99.7
LENGTH
METRES
6.6
DRAFT
METRES
18.0
BEAM
METRES
11.0
SPEED
KNOTS
5952
GROSS
TONNES
1785
NET
TONNES
32
SCIENTISTS
& TECHNICIANS
22
MARINE
CREW

DY169 - NEWFOUNDLAND

Under the leadership of Fisheries and Ocean Canada (DFO), this charter continued the pivotal role in the ongoing Atlantic Zonal Monitoring programme.

Starting in 1998, these annual expeditions focus on the comprehensive collection and analysis of biological, chemical and physical oceanographic data, including through the use of National Marine Equipment Pool (NMEP) systems.

Since 2000, the programme has consistently produced the State of the Ocean Condition Report, contributing significantly to the scientific community's understanding of the Atlantic Ocean's health and dynamics.

This was also the first year of a five-year collaborative framework agreement with DFO and Natural Resources Canada, which will see further charters and continued collaborative opportunities.

Lindsay Beazley, a Chief Scientist of DY169, said:

"This was another highly effective survey delivered by NOC. We very much appreciated the professionalism, great demeanour, and approachability of the Captain, crew, and NMF technicians on board. We very much look forward to working with NOC again."

DY172 - SOUTH PACIFIC GYRE

RRS Discovery sailed out of Cape Town, South Africa, supporting a University of Southampton-led team to gather crucial data needed to study how nutrient limitation can impact how diverse microbes use sunlight. This could limit how these microbes "fix" carbon, but not necessarily other metabolic processes, an area which is not well understood.

To better understand these processes, the voyage gathered observations in two contrasting areas, the South Atlantic Ocean Gyre and the Southern Ocean high-nutrient, low-chlorophyll (HNLC) region, the largest of its type on Earth, down to as far south as 60° South.

The conversion of light energy into chemical energy in the ocean sets a key constraint on the amount of energy that sustains food webs, fisheries and drives the carbon cycle.

DY173 - CONGO CANYON

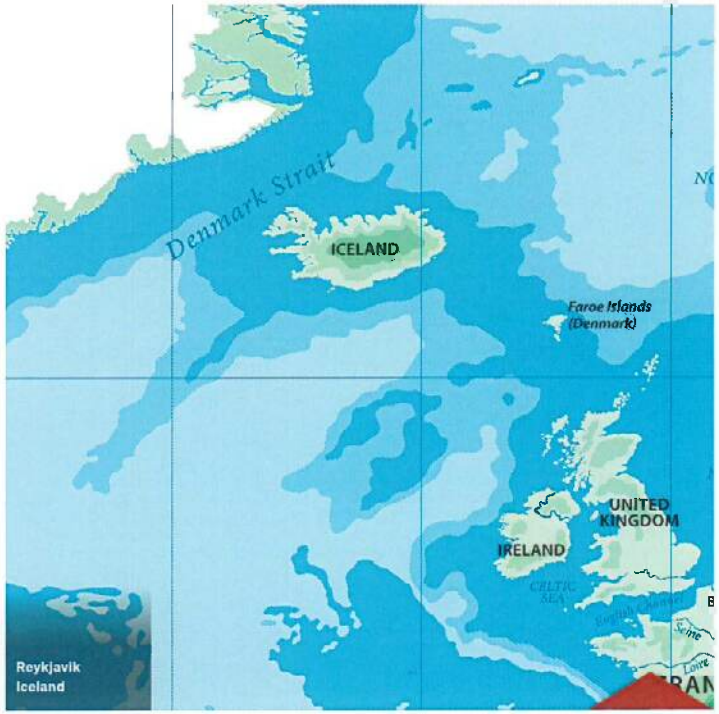
Led by Durham University, this expedition was part of two NERC-funded projects looking to directly measure what can be disruptive and damaging turbidity currents that flow along the floor of the Congo Canyon offshore West Africa and develop new ways to take those measurements using new hydrophone sensors.

The project extends long-term research in this area helping to better understand these currents and the impact they can have on the seabed. This includes their potential to damage vital submarine cables, such as in 2020, when it took 20-25 days to repair submarine cable connections to West Africa following a major turbidity current event.

New technologies to measure these currents will enable better knowledge allowing cables to be laid in lower-risk areas.

Prof. Pete Talling, Chief Scientist of DY173, said:

"In a general sense, I think that the UK marine science community is very fortunate to have this extremely efficient and flexible level of support at NMF, which focusses on getting the job done effectively."

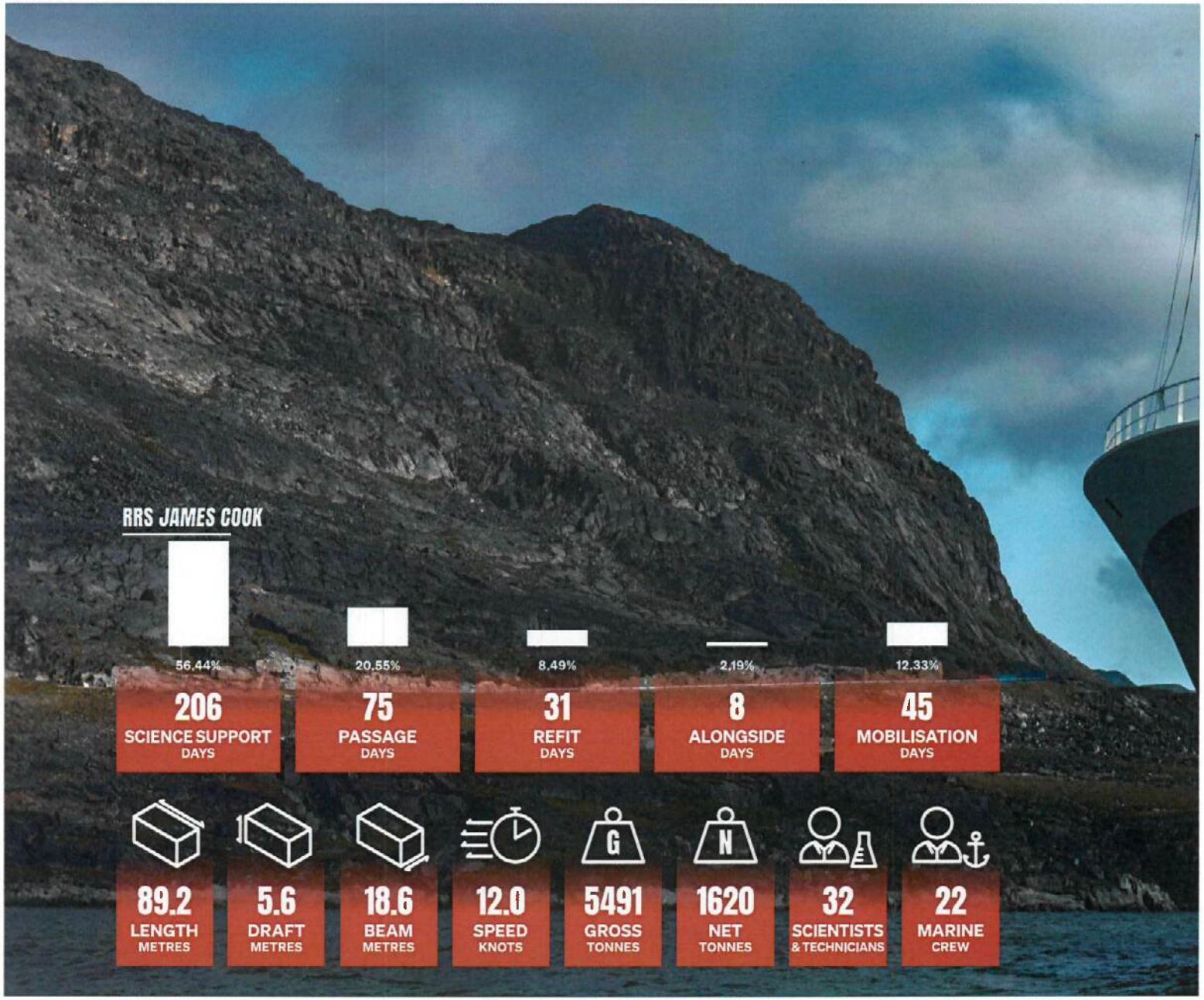


DY182 - MID ATLANTIC RIDGE

The DY182 expedition was part of the Overturning in the Subpolar North Atlantic Program (OSNAP), an international effort to study ocean currents and their impact on heat and freshwater movement in the North Atlantic. The program involving scientists from the UK, Netherlands, Germany, France, Canada, and China, is crucial for understanding changes in the North Atlantic ocean circulation and its broader environmental impacts.

The expedition managed and maintained equipment that measures ocean currents and conditions between Iceland and the Irminger Basin, including recovering and redeploying 12 monitoring stations along the Mid Atlantic Ridge.

They collected water samples and measured ocean properties like temperature, salinity, and currents at about 42 locations along this line. They also gathered continuous data on ocean currents, weather conditions, and surface temperature and salinity throughout the expedition, with additional water sampling and measurements at specific points along the route.


RRS JAMES COOK
56.44%
20.55%
8.49%
2.19%
12.33%
206
SCIENCE SUPPORT
DAYS
75
PASSAGE
DAYS
31
REFIT
DAYS
8
ALONGSIDE
DAYS
45
MOBILISATION
DAYS
89.2
LENGTH
METRES
5.6
DRAFT
METRES
18.6
BEAM
METRES
12.0
SPEED
KNOTS
5491
GROSS
TONNES
1620
NET
TONNES
32
SCIENTISTS
& TECHNICIANS
22
MARINE
CREW

JAMES COOK

JC260 - BARBADOS

Our scientists in collaboration with Seafields, Integrated Environmental Solutions (INES) and the University of the West Indies, Cave Hill Campus Barbados (UWI), started a project in the Caribbean to improve our understanding of the potential effects of using seaweed to store carbon dioxide from the atmosphere. The project is co-funded by the UK Foreign, Commonwealth and Development Office.

The first phase of the project was a thorough assessment of the experimental sites that will be used in Barbados – which was completed onboard the RRS *James Cook*. Scientists from all organisations participated in the research expedition, which mapped and sampled the seafloor and overlying water column at depths of 1000m and 4000m.

Dr Chris Pearce, Chief Scientist of JC260, said:

"Given the nature of this cruise and what we wanted to deliver, I cannot think of any manner in which it could have been handled or delivered better. The whole team excelled and were incredibly helpful, informative and engaged.

A huge thanks to everyone involved at all stages."

JC263 - PORCUPINE ABYSSAL PLAIN

NOC researchers visited the Porcupine Abyssal Plain Sustained Observatory (PAP-SO) in the North Atlantic was the first as part of the new NERC-funded AtlantiS programme, delivering the latest observations and data on essential ocean variables.

Sitting at 4,850 m depth, PAP-SO is the world's longest running abyssal ecology time-series station, monitoring seafloor ecology since 1985, water column particle flux since 1992 and surface ocean and atmosphere parameters since 2003.

The latest expedition to PAP-SO used a combination of traditional approaches and cutting-edge technologies to bring scientific understanding to long-term change in the ocean—from surface to seafloor.

The cruise also contributed to other programmes, including Integrated Carbon Observing System (ICOS), OceanSITES and Minke. The expedition team was supported by NEODASS who provided satellite data daily.

JC268 - LABRADOR SEA

NOC researchers undertook a two-week expedition out of Greenland to set up an ambitious, targeted field experiment as part of the NERC-funded Resolving Biological carbon Export in the Labrador Sea ReBELS project.

The project involved close collaboration between oceanographers with expertise in the biological carbon pump, ocean dynamics and the use of state-of-the-art autonomous platforms to help understand and quantify the transport of oceanic organic carbon into the deep sea and its effect on ocean carbon storage. This saw a year-long ocean observatory set up using autonomous observing technologies, paired with traditional carbon flux measurements.

Combined with novel data analysis techniques, this will allow the different elements of the biological carbon pump to be quantified through a full annual cycle in the north west North Atlantic. This will help improve climate models in order to predict North Atlantic carbon draw-down with greater confidence.

JC254 - MID-ATLANTIC RIDGE

The second ULTRA expedition focused on exploring and sampling the Mid-Atlantic Ridge to better understand seafloor massive sulphide (SMS) deposits. Using the ROV Isis, the team recovered samples to be analysed for their composition and sources. Additional rock samples were collected from the deposits, and vent fluids and gases were sampled from active hydrothermal chimneys.

The team also deployed 23 Ocean Bottom Seismometers to record vibrations from a low-frequency seismic source, helping image the structure of the mineral deposits and surrounding rocks. Seismic-while-drilling techniques were used to explore the sub-seafloor structure, correlating vibrations from the drill with those recorded at the seafloor. GEOMAR, a partner from the German oceanographic institute, conducted an Electro-Magnetic (EM) survey using their MARTEMIS instrument to image the conductivity structure beneath the seafloor and locate areas with sulphide minerals.

UNDERPINNED BY SUSTAINABILITY AND SOCIAL RESPONSIBILITY

NOC's commitment to Corporate Social Responsibility (CSR) is the compass that guides its research, innovation, and outreach activities. It shapes our decisions, influences partnerships, and ultimately, helps create a more sustainable, equitable, and prosperous world. Through this commitment, we showcase the importance of aligning scientific endeavours with ethical principles, setting a powerful example for organisations and individuals worldwide.

Our commitment can be broken down into four categories;

PEOPLE

Our people are passionate about what they do, have huge potential and collectively we deliver great things. Our strength lies in the world-leading interdisciplinary experience, skills and the contribution of roles of every one of our people. Our ability to continue to grow and thrive relies on making NOC a great place to work.

COMMUNITY

We recognise that our actions impact the local and global community, so we are committed to fostering positive relationships, knowledge sharing, and collaboration. Our engagement with the community extends from outreach and education initiatives to partnerships with local organisations, ensuring that our scientific research benefits society as a whole.

ENVIRONMENT

Our purpose is to gain a deeper knowledge of the oceans to help every living thing on our planet flourish. In light of our purpose, Environmental Responsibility is one of our organisation's values and for years we have worked on improving the management of the resources we use and the footprint we leave.

BUSINESS OPERATIONS

Our commitment to sustainable business operations extends to responsible procurement, ethical governance, and promoting awareness and good governance within its workforce. By prioritising these aspects of business operations, we not only set a positive example for others but also ensures the long-term resilience and capacity to fulfil our scientific mission.

Dr John Siddorn speaking at our annual celebration event as we raised the Progress Flag and the Trans Flag

BEHAVIOURS FRAMEWORK

PEOPLE

Working with our colleagues we have created improved tools to enable and support how we work with each other, to enhance our culture and to work in partnership.

The framework promotes behaviours that enhance teamwork, fostering a positive atmosphere and a strong culture where everyone feels supported and respected. This encourages everyone to do their best work. Additionally, this framework lays the groundwork for future people and culture initiatives including our Career Pathways and refreshed Performance Management approach and system, to be launched next year.

UNITE IN PRIDE

PEOPLE

This year we built upon the success of our first event, hosting our pride celebration and flag-raising event across our NOC sites.

We turned our attention to trans rights, both locally and globally, hosting a fireside Chat with Jo Lockwood, an inclusion expert and speaker, Founder and CEO of SEE Change Happen. During this 'ask me anything' session Jo talked about her journey to transition to help NOC continue to foster a culture of inclusivity, understanding and support for our colleagues, friends and families.

Professor Stephanie Henson receiving the European Geosciences Union's 2024 Fridtjof Nansen Medal

PROF. HENSON RECEIVES FRIDTJOF NANSEN MEDAL

PEOPLE

Professor Stephanie Henson, NOC Principal Scientist received the European Geosciences Union's (EGU) 2024 Fridtjof Nansen Medal for distinguished research in oceanography at the EGU General Assembly this year.

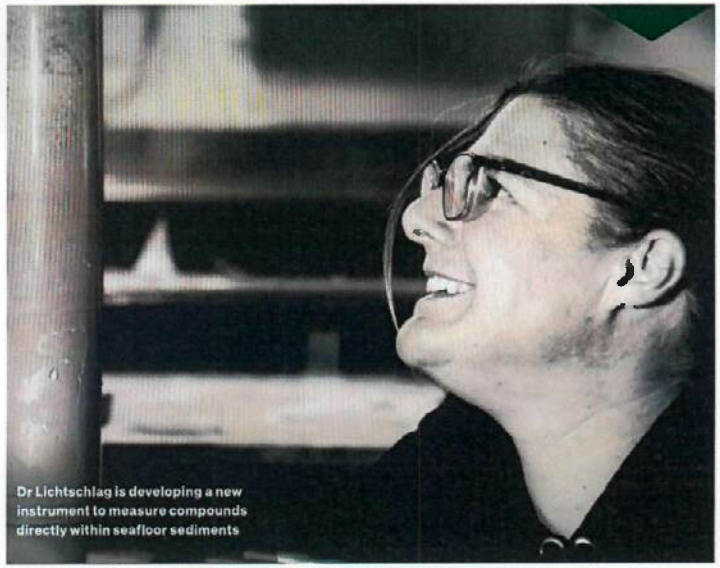
Steph received the award for her outstanding contribution to a topic of fundamental significance to Earth's carbon cycle: how phytoplankton populations and subsequent carbon fluxes, respond to climate variability and climate change.

FUTURE LEADERS FELLOWSHIP

PEOPLE

Dr Anna Lichtschlag was awarded the UK Research and Innovation's (UKRI) Future Leaders Fellowship. Dr Lichtschlag is amongst 75 promising research leaders awarded by UKRI, who will benefit from £101 million to tackle major global issues. The Future Leaders Fellowship allows universities and businesses to develop their most talented early career researchers and innovators.

Dr Lichtschlag is using the award to lead on project SANDMAN, which will develop a new instrument to measure gradients of important biogeochemical compounds directly within seafloor sediments.



Dr Lichtschlag is developing a new instrument to measure compounds directly within seafloor sediments

AWARDS AND ACCREDITATION

PEOPLE

We have had many proud moments this year, we are delighted to have been awarded Employee of the Year at the Mersey Maritime Industry Awards, recognising NOC's strong growth and future potential in the North West region.

At the Hampshire Business Awards, we received the award for our Equality, Inclusivity & Diversity Initiatives, recognising the work and drive to continue to foster a culture of inclusivity.

In recognition of the progress NOC has made with our Diversity, Equality and Inclusion, we have been awarded the Bronze Standard from the Employers Network for Equality and Inclusion's (enei), Talent Inclusion and Diversity Evaluation. This useful benchmarking tool has allowed us to understand the impact of our work to date and provide feedback for us to continue to make this an important priority.

Dr Anna Katavouta and Dr Tiago Segabinazzi Dotto receiving their Challenger Fellowships

PROF. HOLLIDAY AWARDED CHALLENGER MEDAL

PEOPLE

We were delighted to congratulate our Chief Scientific Officer Professor Penny Holliday, who was presented the prestigious Challenger Medal at this year's Challenger Conference.

The Challenger Medal is the premier award of the Society, for a distinguished UK marine scientist or other person who has made a single major contribution, or a sustained contribution, to the development of marine science, or whose innovation has opened up new perspectives.

CHALLENGER FELLOWSHIPS

PEOPLE

Challenger Fellowships were awarded to Dr Anna Katavouta and Dr Tiago Segabinazzi Dotto at this year's Challenger Conference. This recognition is reserved for early career scientists to acknowledge their outstanding accomplishments or potential in a branch of marine science.

The fellowship was created by the Challenger Society in 2000 and is awarded biennially to members of the Society.

OUR PEOPLE STATISTICS

PEOPLE

37% OF WORKFORCE IDENTIFY AS FEMALE

40% OF PEOPLE MANAGERS IDENTIFY AS FEMALE

390 STAFF HAVE COMPLETED ACTIVE BYSTANDER TRAINING

72% OF WORKFORCE ARE ON CLG TERMS & CONDITIONS

Marine Biogeochemist Dr Chelsey Baker shared her experience for International Women's Day 2024 as well as featured on our podcast

INTERNATIONAL WOMEN'S DAY

PEOPLE

In celebration of International Women's Day, we held a week of events, aiming to inspire our people to understand and value Women's inclusion.

We delivered events focusing on inclusive language and communication, how to be an active ally to Women in NOC and heard from inspiring external speakers from women in engineering and top of science.

NEURODIVERSITY CELEBRATION

PEOPLE

We delivered a week of activities aimed at supporting and improving understanding for colleagues with neurodiversity's and neuro-inclusive allies. This included creating resources for staff and managers, and workshops and events celebrating neurodiversity to improve understanding of the value and impact neurodiversity has at NOC.

We also launched our Neurodiversity Group, inviting anyone who identifies as neurodivergent (whether diagnosed or not), to share their lived experience and feed into the NOC Culture Club that helps design and deliver future events and initiatives.

ENGAGEMENT SURVEY

PEOPLE

We have embarked upon an annual People Engagement Survey, this is a route to get open and honest feedback from our people to understand what we are doing well and where we can improve.

This provides a great opportunity to have the wider NOC leadership team involved in developing the outputs from the Engagement survey by creating the action plans. The insights gathered from the survey will be instrumental in helping us make NOC an even better place to work for everyone.

138
MANAGERS HAVE COMPLETED OUR DEVELOPMENT PROGRAMME

16
EMPLOYEE'S TRAINED AS MENTAL HEALTH FIRST AIDERS

10%
OF EMPLOYEE'S HAVE FORMAL FLEXIBLE WORKING

151
VACANCIES FILLED

Our BOSCORF facility successfully achieved Silver LEAF Status reflecting our commitment to sustainability

ENERGY

ENVIRONMENT

We monitor and manage all our utilities and waste very proactively and have achieved our ISO45001 ISO accreditation for our Environmental Management System this year.

We worked with our partner Team Energy to review our Energy Performance Certificate for our Southampton Site and after significant investment have had this increased to a rating of C. We have reduced our energy consumption by 100%.

In alignment with our commitment to decarbonisation, we have initiated a comprehensive upgrade of our energy monitoring systems. This initiative focuses on implementing advanced metering solutions that provide detailed insights into our energy consumption patterns and by identifying high-consumption areas, we can strategically target improvements to reduce our carbon footprint. This capability will support our broader goals of sustainability and operational efficiency.

LEAF

ENVIRONMENT

This year we embarked on the Laboratory Efficiency Assessment Framework (LEAF), a standard set by University College London to improve the sustainability and efficiency of laboratories.

Laboratory-based research is essential for advancing society, but it is also extremely energy and resource-intensive. We are proud to announce that NOC has joined over 100 global institutions already taking part.

We are proud that 100% of our laboratories have now been awarded Bronze and we have 4 labs that have already achieved Silver.

PROCUREMENT

BUSINESS OPERATIONS

As NOC continues to grow and evolve, we all recognise the importance of making responsible choices that benefit not only our company but also the environment and society as a whole.

This year we launched our Sustainable Procurement Strategy recognising that we need to take a comprehensive view of our entire supply chain and work closely with our suppliers to ensure social responsibility is at the heart of what we do. This is a long-term strategy that has six key areas of focus:

1. Ensure prudent use of natural resources and reduction of waste in the supply chain
2. Support the management of our carbon impact
3. Seek out opportunities to increase supply from UK manufacturers
4. Work with internal departments to embed sustainable procurement
5. Management of the delivery of goods and services through effective contracts
6. Work with suppliers to implement ethical working practices and reduce any risk of modern slavery across the NOC's supply chain

MODERN SLAVERY

BUSINESS OPERATIONS

We remain committed to fulfilling our corporate responsibilities in relation to the Modern Slavery Act and to preventing modern slavery and human trafficking in our business activities and supply chains. This is demonstrated through our robust governance frameworks, our corporate values and our own CSR goals.

During 2023/24, some of the below activities were undertaken to contribute towards our commitments in this area:

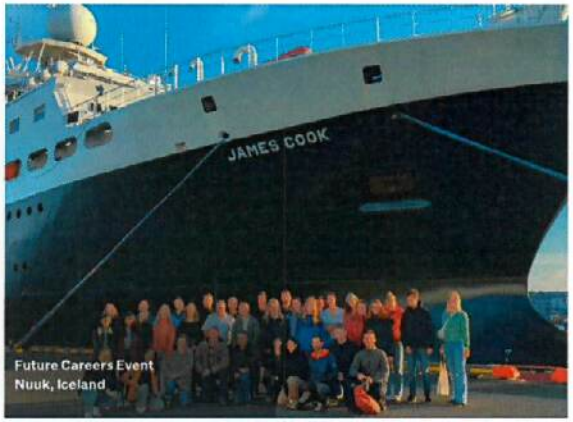
- Our procurement strategy considered Modern Slavery risk prevention by asking suppliers to meet a Code of Conduct that reflects the requirements of the Modern Slavery Act. Where this wasn't possible, NOC asked for equivalent standards to be met.
- We delivered Modern Slavery training to all staff and raised awareness by publishing internal newsletters and displaying posters in key areas which cover the signs of Modern Slavery and how to make reports.
- We launched a new internal whistle blowing phone line with an anonymous function available.
- We registered with the UK Governments Modern Slavery Assessment Tool and intends to use the results of the assessment to direct future improvement.

We are working to ensure that every pallet and box in our supply chain is sourced responsibly, supporting the fight against modern slavery

EVENTS 2024

Unite In Pride 2024
Southampton & Liverpool, UK

Cycle Challenge 2024
Southampton to Liverpool, UK



Future Careers Event
Nuuk, Iceland

Hampshire Business Award
Farnborough, UK

Marine Autonomy Technology
Showcase (MATS2023))
Southampton, UK

Royal Society Summer Science
Exhibition 2024
London, UK

Parliamentary Reception
for Stakeholders
London, UK

Conservative Party Conference
Birmingham, UK

Glider Training Course
Southampton, UK

Oceanology International 2023
London, UK

Protect Our Planet (POP) 2023
Southampton, UK

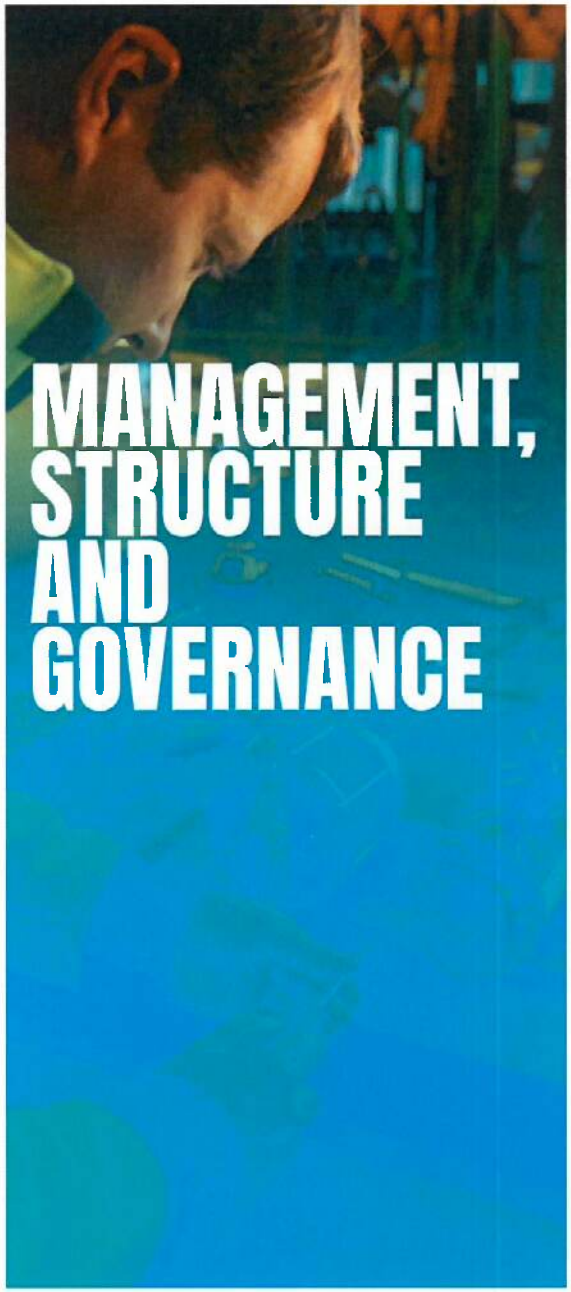
Ocean Open Day 2024
Southampton, UK

Summer Celebration & Values Awards
Southampton & Liverpool, UK

Ocean Pavilion at COP28
Dubai, United Arab Emirates

Labour Party Conference
Liverpool, UK

All-Party Parliamentary Group
(APPG) for the Ocean
London, UK



MANAGEMENT, STRUCTURE AND GOVERNANCE

OVERVIEW

NOC was incorporated on 2 July 2018 as a charitable company limited by guarantee and commenced trading on 1 November 2019. It is registered as a charity with the Charity Commission in England & Wales and the Scottish Charity Regulator and is governed by articles of association in accordance with the Companies Act 2006.

OUR BOARD

ORGANISATIONAL STRUCTURE AND DECISION-MAKING POLICIES - BOARD OF TRUSTEES

NOC's Board of Trustees, who are also Non-Executive Directors for the purposes of company law, have overall responsibility for ensuring that NOC is carrying out its purpose for the public benefit; the continued financial viability of the organisation; and for ensuring that we meet all our legal and compliance requirements. The Trustees oversee the day-to-day delivery of NOC's strategy, which is led by the Executive Committee. Trustee Directors are appointed by the existing Trustee Directors for a term of three years and are eligible for re-appointment for a further three years. The Board of Trustees during the financial year was as follows:

DIRECTORS

Sir Jeremy Darroch
Chair

Dr Ruth Boumphrey

Prof Sir Ian Boyd

David Gee

Daniel Hook

Sarah Kenny OBE
Retired 2nd July 2024

Dr Sarah McMath

Sir Michael Dixon
From 13th March 2024

David McSweeney
From 8th April 2024

Clare Harbord
From 6th May 2024

NOC EXECUTIVE ATTENDEES

Prof. Ed Hill CBE (Outgoing CEO), Julie Pringle-Stewart (Company Secretary), Prof. Penny Holliday (Chief Scientific Officer) and Dr John Siddorn (CEO).

OBSERVERS

Alison Robinson (NERC), Mark Inall (NOC Association) and Simon Durbin (NERC).

DELEGATION OF DECISION MAKING - EXECUTIVE COMMITTEE

The Board delegates the day-to-day leadership and operations of NOC to its Executive Committee, which is made up of the Chief Executive Officer; the Chief Operating Officer/ Chief Financial Officer; the Chief Scientific Officer and five Associate Directors. The Executive Committee meets monthly, reviewing progress against NOC's goals; the KPIs set by the Board; and both current and longer-term priorities for the organisation. The Board has approved a formal Statement of Delegations for the Executive Committee to allow them to conduct the business of the organisation effectively. During the financial year, the Board approved an updated Executive Roles and Responsibilities framework, setting out accountabilities for each member of the Executive Committee.

BOARD MEETINGS

The NOC Board meets formally at least quarterly. Standing items covered in Board meetings include strategy, performance, risk and compliance, Health, Safety & Environment (HSE) and Corporate Social Responsibility (CSR). The Executive reports quarterly to the Board on progress against KPIs set at the start of the financial year, which cover each of NOC's goals. Throughout this year, to provide assurance to the Board that NOC are meeting the principles and recommendations, and to promote board discussion in each area, the progress against each of the principles of the Charity Governance Code has been shared. Deep dive topics have included Culture including Equality, Diversity and Inclusion (EDI), Health, Safety & Environment (HSE), Risk Management, Financial Sustainability and Corporate Social Responsibility (CSR), as well as key science projects and achievements. The Board has continued to look at strategic topics and held an away day with the Executive in October to discuss the new NOC Strategy 2025-2035, alongside key topics such as the organisation and funding, overall health and the role of NOC Innovations.

DELEGATION OF DECISION MAKING - COMMITTEES

The Board of Trustees has established four formal committees: the Audit & Risk Committee; the Nominations Committee; the Remuneration Committee; and the Scientific and Technology Advisory Committee. Their role is to undertake detailed scrutiny of specific subject matters and to make recommendations on those topics. The committees are Chaired by a Trustee Director appointed by the Board and report directly to the Board. NOC also has a Finance and Investment Committee which is a sub-committee of the Board and reports directly to them. The constitution of the committees and their respective Terms of Reference are reviewed at least annually.

AUDIT AND RISK COMMITTEE

The Audit and Risk Committee is chaired by David Gee and meets quarterly. On behalf of the Board, it has overall responsibility for financial reporting and controls; risk management; audit; and whistle-blowing. The committee acts independently from the NOC Executive, to ensure that the interests of the charity are properly protected and to ensure the integrity of the company financial reporting. Standing items within the agenda include cyber security and GDPR. Each quarter the committee also completes a deep dive into one of the strategic risks being managed across the business. During 23/24 the committee reviewed our key compliance policies, our annual financial business planning and targets and appointed our auditors.

REMUNERATION COMMITTEE

The Remuneration Committee was chaired by Sarah Kenny OBE, however she retired from her trustee role during the 23/24 financial year. Sir Michael Dixon has chaired the committee from July 2024. The Committee meet quarterly. It provides a forum for developing policy on trustee and executive remuneration; to recommend levels of remuneration for Directors; and to review the remuneration policy and reward package for all employees. It oversees any major changes in the employee benefits structure throughout the organisation. During the 23/24 year, the Committee reviewed and approved the executive team's objectives, executive pay and executive performance pay and the overall pay policy for NOC. The Committee also approved NOC's Gender Pay gap submission.

NOMINATION COMMITTEE

The Nomination Committee has the role of leading the process for Board appointments and making recommendations to the Board and meets at least twice a year. It is chaired by Sir Jeremy Darroch and is responsible for long-term succession planning for future trustees, seeking to ensure there is a formal, rigorous, and transparent procedure for the appointment of new directors to the Board and reviewing and evaluating the balance of skills, knowledge, experience and diversity on the board. The Board analyses the capabilities of the existing Trustee Directors using a skills matrix, which is reviewed annually. The committee had oversight of the recruitment process to successfully appoint three new trustees in this financial year.

SCIENCE AND TECHNOLOGY ADVISORY COMMITTEE

The Science and Technology Advisory Committee is chaired by Professor Sir Ian Boyd. Its remit is to provide independent advice to support the Board of Trustees and the Director Science & Technology in their responsibilities for development and delivery of the research strategy for NOC and on sustaining the quality and impact of NOC's research performance, its research environment and the health of its intellectual capital base. The committee is chaired by a member of the NOC Board and has a membership of no more than 10 people with expertise covering the breadth of NOC's main areas of scientific research and technology development. Members are drawn from outside NOC, taking due consideration of diversity, and bringing stakeholder and international perspectives commensurate with NOC's role as one of a relatively small number of large-scale oceanographic institutions in the world.

FINANCE AND INVESTMENT COMMITTEE

The Finance and Investment Committee is chaired by the Chief Financial Officer, Julie Pringle-Stewart. Its remit is to have overall financial oversight of the NOC and has delegations to make investment decisions on behalf of the Board within a financial limit. The Committee ensures that the NOC has the reserves and investment required for long-term success and to meet the strategic objectives of the organisation. The Committee reports directly to the NOC Board and provides assurance to the Board of the financial performance and recommended treasury and investment decisions. Key outcome of the committee this year has been the commitment to re-invest over £1.5m of reserves on innovative research projects and technology.

TRUSTEES' INDEMNITIES

Under NOC's governing documents, directors and former directors are entitled to an indemnity against liability incurred by them to a third party in the proper performance of their duties as a director or officer of NOC. The governing document also gives NOC powers to provide indemnity insurance for the Trustees in respect of liability arising from breach of trust or duty, negligence, subject to the conditions of s.189 of the Charities Act 2011 (which excludes from such insurance any criminal and regulatory fines and penalties). NOC maintains such insurance for the Trustees, with an annual cap on liability.

PAY POLICY FOR SENIOR STAFF

This year one Trustee received remuneration as disclosed under note 7 to the financial statements. Details of Trustees' expenses incurred in the course of their duties and reimbursed are disclosed under note 7. The Remuneration Committee has responsibility for developing, implementing and reviewing the remuneration, considering market value; performance; capabilities, values and leadership behaviours, and using up to date and relevant comparative salary information. The Chair of the Remuneration Committee recommends the remuneration package of the Chief Executive Officer to the Chair of the Board, who in turn reports to the Board.

INDUCTION AND TRAINING OF TRUSTEES

As part of our on-boarding process, new Trustees receive an induction to introduce them to our work, which includes an introduction to each member of the Executive team, presentations, tours and meeting various colleagues to learn about the different functions of NOC. NOC also provides a trustee handbook with guidance on both NOC itself, and on charity governance requirements. The trustees also have an annual programme of reviewing the Charity Governance Code, to review compliance and achievements in this area, and review one or two topics of the code each quarter. This year Trustees (including those newly appointed) have undertaken GDPR training and Cyber Security training. Newly appointed Trustees also attended a welcome day event in June 2024 as a formal introduction to NOC.

REVIEW OF BOARD PERFORMANCE

The board's performance is reviewed internally every year, with an external effectiveness review undertaken every three years. An internal review of Board Effectiveness was undertaken in the summer of 2024, with input from Trustees via a questionnaire and followed up at a meeting of the Board. The actions and improvement areas that were identified will be implemented during the next financial year. The next external effectiveness review is due to be undertaken in 2025.

SUBSIDIARY GOVERNANCE AND RELATED PARTIES

NOC's wholly owned subsidiary, National Oceanography Centre Innovations Limited ('NOC Innovations'), was established in 2019 as a private limited company. Its role is to undertake more applied and commercial work, to facilitate knowledge exchange and encourage innovation. It has covenanted to donate to NOC all profits earned which it may legally donate and to re-claim gift aid on its profits to NOC. The NOC Innovations Board is chaired by David Gee, and its other directors are members of the Executive Committee. The NOC Innovations Board meets quarterly. Its Managing Director, Huw Gullick, provides regular updates to the NOC Board of Trustees on the activities and financial reporting of NOC Innovations. NOC is eligible to bid for funding from UKRI, including the Natural Environment Research Council (NERC). NOC manages the National Capability funding on behalf of NERC working in partnership with marine centres throughout the UK.

MEMBERS OF NOC AND LIABILITY

The Members of the Charity are the Trustee Directors. They guarantee to contribute an amount not exceeding £1 to the assets of the Charity in the event of winding up.

OUR STAKEHOLDERS

During the year, NOC has continued developing formal framework for engagement with stakeholders, led by the Executive Committee, with the Board being briefed on and involved with setting the strategy. The Board reviewed its interaction with stakeholders, and that of NOC as a whole, as part of its annual Board Effectiveness review in August 23 and is developing actions to embed and extend stakeholder engagement further during the next financial year.

OUR EXECUTIVE COMMITTEE

- OUR EMPLOYEES
- YOUNG PEOPLE & STUDENTS
- OUR FUNDERS
- OUR SUPPLIERS
- SCIENTISTS, ENGINEERS & RESEARCHERS
- MARINE RESEARCH ORGANISATIONS & PUBLIC AUTHORITIES
- PUBLIC IN THE UK & WORLDWIDE

We are developing actions to embed and extend engagement with our key stakeholders outlined in the diagram above

DR JOHN SIDDORN
CHIEF EXECUTIVE

PROFESSOR ED HILL CBE
OUTGOING CHIEF EXECUTIVE

PROF. PENNY HOLLIDAY
CHIEF SCIENTIFIC OFFICER

JULIE PRINGLE STEWART
CHIEF OPERATING OFFICER
CHIEF FINANCIAL OFFICER

DR JON BLOWER
ASSOCIATE DIRECTOR
DIGITAL OCEAN

NATALIE CAMPBELL
ASSOCIATE DIRECTOR
CORPORATE BUSINESS SUPPORT

PROF. DOUG CONNELLY
ASSOCIATE DIRECTOR
SCIENCE AND TECHNOLOGY

DR MAATEN FURLONG
ASSOCIATE DIRECTOR
NATIONAL MARINE FACILITIES

HUW GULLICK
ASSOCIATE DIRECTOR
NOC INNOVATIONS AND ENGAGEMENT

PUBLIC BENEFIT STATEMENT

In setting the vision and mission for the NOC, the Trustees gave due consideration to the guidance on public benefit, as outlined by the Charity Commission of England and Wales and the Scottish Charity Regulator OSCR.

NOC's key driver for selecting topics for research is always what will take ocean science forward for the furtherance of our charitable purpose, our touchstone in all endeavours is increasing knowledge to deliver public benefit.

NOC and our trading subsidiary, NOC Innovations, bring benefits in a number of ways, including through scientific research, marine technology, education, information and advice. Through our work, we aim to:

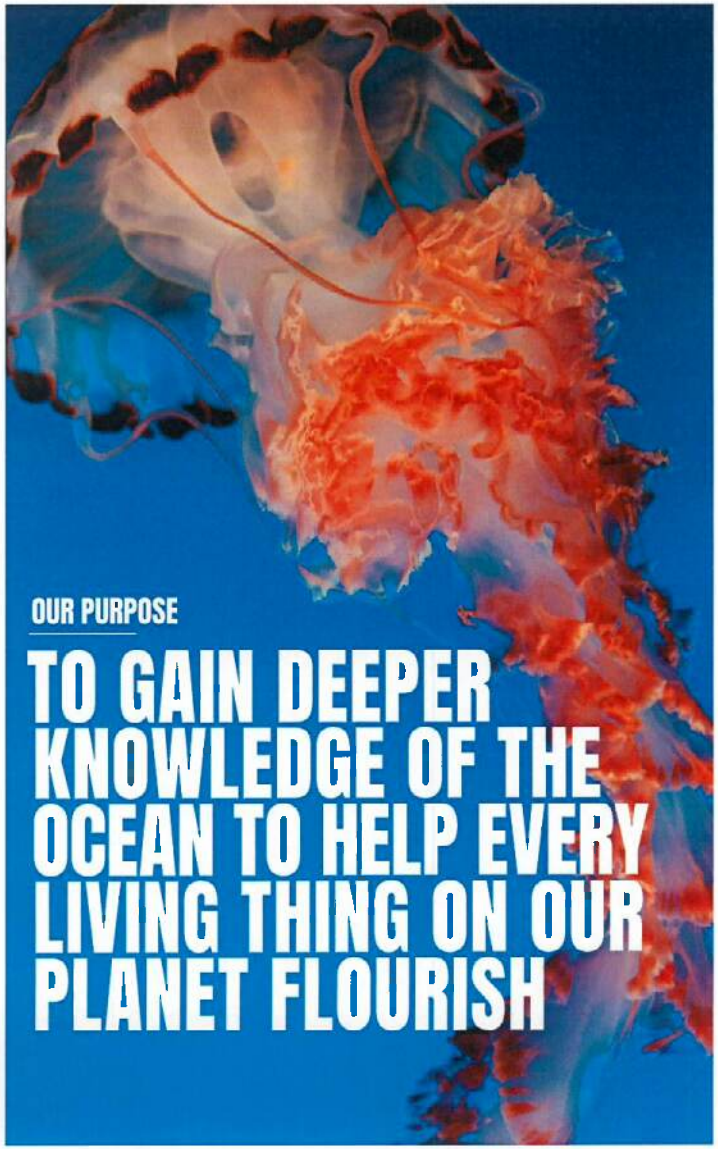
- **Support sustainable development protecting the ocean's future health**
- **Protect people and economic infrastructure from marine-related disasters**
- **Making sense of global environmental changes in which the ocean is deeply implicated**
- **Educate humankind to understand scientific evidence about the ocean's role in our lives**
- **Address issues of national importance requiring inter-disciplinary science**
- **Underpinned by sustainability and social responsibility**

To enable the organisation and individuals to exercise independent discretion in decision making we have established an Activity Decision Tree. Its general principles are applied when deciding whether activity is routed through the National Oceanography Centre (NOC) or the trading subsidiary: National Oceanography Centre Innovations Limited (NOC Innovations Ltd). This includes examination of ethical considerations, reputational risks, organisation and scientific independence of NOC, where the benefit is accrued and risk and mitigations thereof.

Where contract research is undertaken by NOC we do so in line with the Commission's guidance on Research by Higher Education Institutions, and ensure it is funded at full economic cost, often by matching funding across the portfolio. NOC retains scientific control of any IP licensed so that it can continue to advance science and technology for the benefit of the public.

OUR VALUES

- EXCELLENCE
- ENVIRONMENTAL RESPONSIBILITY
- INTEGRITY
- INNOVATIVE THINKING
- EMPOWERMENT
- WORKING IN PARTNERSHIP



OUR CHARITABLE OBJECTIVES

THE ADVANCEMENT OF SCIENCE

...In particular, enhancing the scientific knowledge and understanding of oceanographic sciences, and the ocean and its interaction with the earth system, and facilitating the use and application of that knowledge and understanding, particularly by:

a. Undertaking and facilitating research including through technology development, experimentation, analysis, long term ocean observation, monitoring, mapping, surveying and modelling of a high international standard and disseminating valuable research outcomes.

b. Providing access to scientific research and technology development facilities and infrastructure including research ships and other measurement platforms and systems to the ocean science community. Obtaining, managing, curating and providing access to digital data, samples and other specimens.

c. Obtaining, managing, curating and providing access to digital data, samples and other specimens. Innovation or
by encouraging and supporting innovation.

d. Being the UK national focus for ocean science, exercising leadership for and promoting co-operation with the wider UK science community, and providing national and international visibility and expert representation for oceanographic sciences.

e. Leading, facilitating and supporting innovation.

THE ADVANCEMENT OF EDUCATION

...in oceanographic science and the ocean and its interaction with the earth system and relationship with people, particularly by:

f. Contributing to the education (particularly post graduate higher education), training and development of the next generation of scientists, engineers, technologists including the supervision of postgraduate research students.

g. Supporting the building of marine research scientific and technical capacity in other countries around the world.

h. Communicating with and engaging with the public in relation to ocean science and technology through seminars, talks, leaflets, papers and other means.

GOVERNANCE ARRANGEMENTS

GOVERNANCE FRAMEWORK

We continue to improve and evolve our governance framework in line with the evolving needs of the organisation. Our framework is comprised of three areas: our policies, our statement of delegation and our committees that support and have oversight of our operations. Our internal audit programme continues to provide assurance and feedback on the effectiveness of, and how our governance enables and supports the organisation.

This year we completed a project to review all the policies developed at the time we became independent from government. The aim of this review was to understand if the controls were effective and also, importantly, whether they were enabling our day-to-day operations. This allowed our department heads across the business to update and improve our ways of working. The project was successful and has seen increased engagement with policy and procedure across the business.

We also undertook a full review of NOC's Statement of Delegations (SODA), completed as part of an internal audit process. The SODA is reviewed annually to ensure any changes to our governance and operational ways of working are updated and reflected in the recorded delegations. A new version of the document was updated based on discussions had with Associate Directors and Group Heads across the business. The work focused on reviewing the SODA in terms of effectiveness, whether the SODA enabled operations across NOC and most importantly, to ensure the necessary controls were in place. This work was approved by the Board in November 2023 and the new SODA has been in operation since this time.

CYBER SECURITY AND DATA PROTECTION

We successfully retained our cyber essential accreditation this year and rolled out new online mandatory cyber security training to the whole organisation to help improve awareness and understanding. Our training completion rates at the end of the reporting year are 89%. As part of supporting our staff, we have completed regular phishing campaigns to help test the impact of the training. We continue to work with external partners that provide us with additional support and expertise to keep NOC's IT Security levels high, successfully maintaining a grade-A security card throughout the year. There have been 0 Cyber incidents that have affected NOC's regulatory obligations.

Supporting our staff to understand the risks we face and how they can keep NOC operating safely is extremely important. We dedicated our resources to training our staff in critical governance areas, we rolled out new Information Governance training this year, to all staff via an online training platform, which achieved a 97% completion rate. The Legal and Governance team provided in person follow up GDPR training to all staff via their divisional meetings. This has become part of the NOC induction and on-boarding package, with refresher training to be rolled out for staff throughout the year. The Head of Legal and Governance has written a new Data Protection Policy and we have continued with our project to improve our ways of working. Engaging and training our staff to understand their governance responsibilities will continue to be a theme into next year. There were no reportable data protection breaches during the financial year.

RISK MANAGEMENT

The Trustees keep oversight of the strategic risks that the organisation faces and provide their guidance and their position with regards to our risk tolerances. This year we have considered how we can improve ease of use and understanding of our risk approaches, looking to align ways of working with other areas of the organisation such as learning from our Health & Safety practices. Our risk management approach is explained to all new starters across the organisation and is embedded well as part of our operational committee meetings. We continue to take feedback from the organisation and tested our understanding of risk via an internal audit programme.

This year we reviewed our approach to Business Continuity; this was a full review of our policies and documented approach as well as training with the Incident Response Team. This aims to improve our resilience and ensure that business impact assessment risks identified are understood with mitigations in place.

ETHICS, SAFEGUARDING AND CONFLICTS OF INTEREST

Safeguarding is incredibly important as we aspire to engage more with our local communities and young people our future scientists and engineers. This year we also fully reviewed and update our Conflicts of Interest and Safeguarding Policies and procedures. All staff training in key compliance areas, including safeguarding, conflicts of interest and modern slavery, was rolled out in September 2024 and refresher training will be provided regularly.

DUE DILIGENCE

Our new Funding Assurance and Corporate Responsibility (FACR) Group was established this year, this group has taken ownership and coordination of our new approach to Due Diligence for the organisation but also assurance processes for all projects. This year the Audit & Risk Committee completed an audit of the approach to self-insured assets and pricing for risk. The FACR group have completed internal and external engagement to create a new Corporate Social Responsibility Strategy that has been approved by the NOC Board of Trustees and will be launched next financial year.

There were no externally reportable conflicts of interest and no significant governance or control issues during the financial year.

REFERENCE AND ADMINISTRATIVE DETAILS

COMPANY REGISTERED NUMBER

11444362

CHARITY REGISTERED NUMBERS

1185265

SC049896

REGISTERED OFFICE

National Oceanography Centre
European Way
Southampton
SO14 3ZH

INDEPENDENT AUDITOR

BDO LLP
Arcadia House
Maritime Walk
Ocean Village
Southampton
SO14 3TL

LEGAL ADVISORS

Eversheds Sutherland
Bridgewater Place
Water Lane
Leeds
LS11 5DR

BANK

NatWest
3 Hampshire Corporate Park
PO Box 462
Templars Way
Chandlers Ford
SO53 3RY

DIRECTORS AND TRUSTEES

Sir Jeremy Darroch
Chair

Dr Ruth Boumphrey

Professor Sir Ian Boyd

David Gee

Daniel Hook

Sarah Kenny OBE
Retired 2nd July 2024

Dr Sarah McMath

Sir Michael Dixon
13th March 2024 onwards

David McSweeney
8th April 2024 onwards

Clare Harbord
8th May 2024 onwards

SENIOR MANAGEMENT TEAM

Dr John Siddorn
Chief Executive Officer
April 2024 onwards

Professor Ed Hill CBE
Chief Executive Officer
Retired April 2024

Julie Pringle-Stewart
Chief Operating Officer
Chief Financial Officer
Company Secretary

Dr Maaten Furlong
Associate Director for National Marine Facilities

Jon Blower
Associate Director for Digital Ocean

Natalie Campbell
Associate Director for Corporate Business Support

Professor Doug Connelly
Associate Director for Science & Technology

Huw Gullick
Associate Director for NOC Innovations ltd
Associate Director for Engagement

Prof. Penny Holliday
Associate Director National Capability
Chief Scientific Officer
June 2024 onwards

Andrew Lovett
Head of Strategic Finance

Matt Eades
Head of People and Skill

Rachel Power
Head of Legal and Governance

Mohammad Alhashimy
Head of Legal and Governance

SECTION 172 STATEMENT

The NOC Board of Trustees have acted in a way that they consider to be in good faith, that would be most likely to promote the success of the company for the benefit of its members as a whole, and in doing so have regard to the matters set out in s172(1)(a-f) of the Companies Act 2006, in the decisions taken during the year.

The Board of Trustees are briefed on their legal duties as part of their induction and are able to seek further advice from the Company Secretary, Head of Legal & Governance or access external independent advice if required.

STRATEGY AND CONSIDERATION OF THE CONSEQUENCE OF LONG-TERM DECISIONS

To drive success, we've defined seven ambitious strategic priorities for 2023/24. These priorities give us a focus for the business plan period and are integral to achieving our overarching purpose. The seven priorities are:

- **Mission Project** – showcase our ambition to be leaders in socially beneficial science areas
- **People Focus** – our strength lies in world-leading interdisciplinary experience, skills and roles of every one of our people
- **Optimise Funding** – developing a fully balanced portfolio
- **Strategic Space** – transforming our sites into inspiring future-ready spaces for staff to work and thrive
- **Freedom Matters** – using our courageous, independent voice to explore all potential routes to enable change
- **Commercialising Technology** – continuing to build our expertise in autonomous underwater vehicles (AUVs) and biogeochemical sensors sets us apart
- **Leading Sustainably** – making our commitment to sustainability the compass that guides our research, innovation, culture, our decisions and influences our partnerships.

The organisation must maintain a sufficient level of income such that it can meet its cost commitments and remain financially viable. This year we have developed our balanced portfolio approach that shows how the projects blend and creates a simple model to add additional opportunities or risks to identify the potential outcomes and make sound decisions for NOC. In line with this, we have embarked upon an asset management transformation project highlighting the importance of investing in our basic infrastructure required to grow and create further profitable income. We aim to enhance our research capabilities and capacity, starting projects to review our laboratories and workshop capabilities.

As part of the mission project priority, we have agreed with our Board of Trustees to invest in NOC's Marine Research Observing Infrastructure. This provides the necessary investment to work towards the world's first trans-Arctic passage of an AUV equipped with state-of-the-art sensors. Throughout our history, we have pioneered ocean data technology and will continue to invest in technological advancements in oceanographic research equipment continually offering improved functionalities and data collection capabilities.

Key highlights of the projects and initiatives delivered to meet the priorities have been outlined on pages 48 to 54.

We have now finished the fourth year of delivery of our five-year strategy "Defining our Future" which aims to preserve the very best of what we do and grow our work– exploring new depths; creating the most innovative technologies; being the most exciting place to learn and work. The Executive has started a review of the strategy and our key performance indicators ready for a new strategy for launch in 2025. Throughout the year, decisions and considerations at Board meetings are consistently linked to how NOC meet its strategic objectives and how NOC can build and develop further to the environment around and in turn, contribute further to achieving public benefit.

Decisions are underpinned by a detailed business plan, with budgets built from funded projects and forecasts across the following 5 years, based on experience of research funding; pipeline research areas; and market research on future areas of growth. The Board also considers the longer-term prospects and funding landscape for NOC, considering expected changes in technology and skills required and types of research and data analysis to be undertaken in the next 10-15 years, and conscious of NOC's aim to diversify income over the longer term.

SUSTAINABILITY AND SOCIAL RESPONSIBILITY

As a registered charity with public benefit at the heart of the organisation, NOC's aim is to make a positive contribution to society by advancing ocean science and education supported by continuing substantial public research investment. As the national centre and a world leader in marine science, NOC's aim is to lead by example.

We have now finished the third year of delivery of our Corporate Social Responsibility (CSR) Strategy, which we've celebrated in Section 3.6 and have worked on developing a new CSR strategy. The CSR Committee has met regularly within the organisation, leading strategic progress towards the pillars of People; Operations; Community; Environment; and Research. In its delivery of this plan, NOC is aiming to work to the principles of ISO 26000 Social Responsibility. The Board reviews CSR as part of its regular programme.

OUR PEOPLE

The Board considers that developing and maintaining good employee engagement and cementing NOC's reputation as an employer of choice, are fundamental to the delivery of the NOC Strategy.

We remain focused on our ability to attract and retain the best talent. The NOC has a certificate of sponsorship, enabling us to sponsor visas for those members of staff and new job applicants who require a visa. The ability to sponsor visas is therefore key to NOC's recruitment and retention, and our ability to collaborate. We decided to support incoming employees with Visa Application Costs as part of our recruitment offer, in benchmarking against other research organisations and universities this gives us a strong offer to attract the best talent.

NOC has completed extensive stakeholder engagement to identify our cultural priorities. The outputs of this engagement were presented to the Executive and Board of Trustees in January 2024. The commitment to continuing to invest in our culture recognises that our success hinges on our ability to evolve. Our recent work has outlined strategic cultural priorities aligned with our goals and has identified initiated actions to nurture this culture. The output of this work will be used alongside the outputs from this year's engagement survey and will help create a NOC action plan.

We have spent time focusing on developing the data and information created for our people dashboards. The new dashboards cover a range of key metrics and insights to help NOC better understand and manage our workforce effectively. We aim to further develop our dashboards so that they become useful tools in informing decision-making and future initiatives.

As always, we continue to make progress in delivering our Diversity Equality and Inclusion initiatives, this has included supporting our trans community with the installation of gender-neutral toilets at our Southampton site. We have now applied for additional year 2 funding following several successful deliverables resulting from our initial funding proposal. Year 2 funding will build upon this foundation, with a sharper focus on social mobility.

We have maintained proactive engagement with the Trade Unions in setting pay for the year and reviewing our approach to allowances. We continue to engage employees through our Staff Focus Group and Open Staff Meetings, that continue to evolve based on the feedback we encourage.

HIGH STANDARDS AND BUSINESS CONDUCT

NOC's values of Excellence, Innovative Thinking, Empowerment, Environmental Responsibility; Integrity; and Working in Partnership, underpin the way in which the Trustee Directors take decisions and set standards for the way in which the organisation operates. Through the delivery of our strategy, NOC's intention is to promote our reputation, reflecting responsible behaviour and maintaining high standards of business conduct.

LEARN

The Board reviews the NOC's Ethics & Research integrity frameworks annually. NOC continues to be committed to following the Seven Principles of Public Life, which outline the ethical standards to which those working in the public sector are expected to adhere and which complement NOC's own values.

MEMBERS

The Trustee Directors are also the Members of NOC. The Directors, in consultation with the Executives, take decisions jointly, in accordance with company law, and regularly review any conflicts of interest they may have in their other capacities or wider activities.

STREAMLINED ENERGY & CARBON REPORTING (SECR)

In line with our commitment to innovation and environmental responsibility, we took several steps in FY 2023-24 to reduce our environmental impact. These efforts included embedding sustainability into our laboratories and workshops, increasing energy efficiency, managing waste, and, in partnership with the Natural Environment Research Council (NERC), testing Hydrotreated Vegetable Oil (HVO) fuel for use on RRS *Discovery* and RRS *James Cook*.

This year, our total carbon impact reached 20,110.71 tCO2e. This is an increase from 19,323 tCO2e in FY 2022-23, representing a 4% rise overall. Our sustainability initiatives reduced emissions from electricity, rental cars, water, and landfill. However, there was a significant increase in emissions from business travel (up 34%) and fuel used by logistics vehicles (up 16%). Business travel accounts for around 6.5% of our footprint. These increases were due mainly to more scientific missions and increased travel for mariners to ships operating in remote locations, and an increased in travel for scientists presenting research at key events. Both of these activities are vital for advancing ocean science and influencing policy.

NOC tested Hydrotreated Vegetable Oil (HVO) fuel for the first time on our research ships as a potential alternative to conventional marine gas oil (MGO). This trial, part of a collaborative effort between NERC and NOC, aims to reduce carbon emissions from our marine science operations. HVO offers a short-term solution to reduce emissions without compromising scientific capability, while we continue to develop longer-term strategies. Since fuel use accounts for about 83% of NOC's carbon footprint, the NOC Marine Carbon Project is a critical part of our broader decarbonisation efforts. Additional actions include exploring upgrades to ship propulsion systems for better efficiency, modifying infrastructure for renewable shore power, and investing in tools to integrate carbon considerations into marine planning.

NOC tracks its staff Full-Time Equivalent (FTE) figures to better understand our carbon footprint. For FY 2023-24, with 683.6 FTE, our carbon intensity was 29 tCO_2e/FTE, the same as the previous year despite a slight increase in FTEs. Our building-related intensity ratio was 0.35 tCO_2e/m^2.

As an organisation focused on ocean research, we closely monitor our environmental impact. The 4% increase in emissions indicates we have room for improvement. We remain committed to understanding and reducing our carbon footprint while continuing essential research operations. We recognise that there is still much work to do to meet our long-term targets and our next area of focus will be on managing emissions from business-critical travel for our science and marine teams.

We are pleased, however, with the progress made this year, including stabilising overall emissions, successfully testing HVO fuel, and reducing energy use in our buildings. All our labs and workshops achieved the LEAF laboratory energy efficiency program Bronze award, and we reached our EPC C targets ahead of schedule. We look forward to the results of these efforts in the coming years and remain committed to balancing our research goals with our environmental responsibilities.

EMISSION DETAILS

SCOPE 1 EMISSIONS

These amounted to:

- Gas Combustion
  914 tCO_2e
- Ship Fuel Consumption
  16,723 tCO_2e
- Fleet Vehicles
  24 tCO_2e

Total Scope 1 emissions: 17,661 tCO_2e

SCOPE 2 EMISSIONS

These amounted to:

- Electricity
  1,116 tCO_2e
- Purchased Heating (Liverpool Office)
  19 tCO_2e

Total Scope 2 emissions: 1,135 tCO_2e

SCOPE 3 EMISSIONS

- Business Travel, Rental Car fuel
  9 tCO_2e
- Waste (Incinerated, landfill, food waste, recycling)
  5 tCO_2e
- Business Travel, Employee Mileage Claims
  11 tCO_2e
- Water Consumption and Discharge
  3 tCO_2e
- Air (domestic, short-haul and long-haul)
  and Rail (domestic and international)
  1,287 tCO_2e

Total Scope 3 emissions reported here: 1,315.31 tCO_2e

TABLE 1: PRINCIPAL SOURCES

		REPORTING YEAR 2022-23			REPORTING YEAR 2023-24		
UNITS	**SCOPE**	**SOUTHAMPTON**	**LIVERPOOL**	**TOTAL**	**SOUTHAMPTON**	**LIVERPOOL**	**TOTAL**
Gas Combustion for Heating m^3	1	5,310.28	-	**5,310.28**	4,995.95	-	**4,995.95**
Marine Gas Oil fuel for RRS *Discovery* tonnes	1	2,529.00	-	**2,529.00**	2,770.44	-	**2,770.44**
Marine Gas Oil fuel for RRS *James Cook* tonnes	1	2,530.00	-	**2,530.00**	2,379.00	-	**2,379.00**
HVO Biofuel for RRS *Discovery* & RRS *James Cook* litres	1	-	-	-	330,000.00		**330,000.00**
Fleet Vehicles Diesel & HVO fuel litres	1	6,149.00	-	**6,149.61**	9,360.90	-	**9,360.90**
Fleet Vehicles Propane Gas fuel tonnes	1	-	-	**1.30**	1.60	-	**1.60**
Electricity kWh	2	4,996.00	303.00	**5,299.00**	5,053.64	335.52	**5,389.15**
Heat Purchased for Own Use (CHP/District Heating) mWh	2	0.00	100.03	**100.03**	-	154.25	**154.25**
Business Travel - Rental Car Fuel £GBP	3	-	-	**7,080.00**	-	-	**6,374.89**
Business Travel - Employee Expense Claims miles	3	-	-	**50,110.14**	-	-	**41,126.66**
Water Consumption and Discharge m^3	3	10,338.00	329.00	**10,667.00**	9,540.00	341.85	**9,881.85**
RESULTING EMISSIONS	**SCOPE**	**SOUTHAMPTON**	**LIVERPOOL**	**TOTAL**	**SOUTHAMPTON**	**LIVERPOOL**	**TOTAL**
Gas Consumption for Heating tonnes CO_2e	1	969.34	0.00	**969.34**	913.76	-	**913.76**
Marine Gas Oil fuel for RRS *Discovery* tonnes CO_2e	1	8,219.23	0.00	**8,219.23**	8,990.92	-	**8,990.92**
Marine Gas Oil fuel for RRS *James Cook* tonnes CO_2e	1	7,953.32	0.00	**7,953.32**	7,720.57	-	**7,720.57**
HVO Biofuel for RRS *Discovery* & RRS *James Cook* tonnes CO_2e	1	-	-	-	11.74		**11.74**
Fleet Vehicles Diesel and HVO fuel tonnes CO_2e	1	16.28	0.09	**16.37**	18.95	-	**18.95**
Fleet Vehicles Propane Gas fuel tonnes CO_2e	1	1.82	-	**1.82**	4.80	-	**4.80**
Electricity tonnes CO_2e	2	1,083.96	62.78	**1,146.75**	1,046.36	69.46	**1,115.82**
Heat Purchased for Own Use (CHP/District Heating) tonnes CO_2e	2	0.00	18.32	**18.32**	-	18.85	**18.85**
Business Travel - Rental Car Fuel tonnes CO_2e	3	-	-	**11.09**	-	-	**9.16**
Business Travel - Employee Expense Claims tonnes CO_2e	3	-	-	**13.44**	-	-	**11.05**
Water Consumption and Discharge tonnes CO_2e	3	4.00	0.12	**4.11**	3.23	0.12	**3.35**
Total tonnes CO_2e		-	-	**18,353.79**	-	-	**18,818.96**
Floor Space m^2		51,234.80	2,800.00	**54,034.80**	51,234.80	2,800.00	**54,034.80**
Intensity Ratio tCO_2e/m^2		-	-	**0.34**	-	-	**0.35**
Intensity $kgCO_2e/m^2$		-	-	**339.67**	-	-	**384.27**

METHODOLOGY FOR COLLECTING EMISSIONS AND ENERGY DATA

SCOPE 1

- Gas Use for Heating: Data from site meters were converted to CO_2e using UK Government GHG Conversion Factors.
- Ship Fuel: Captains reported fuel use, which was converted to CO_2e using carbon conversion factors for Marine Gas Oil (MGO) and Hydrogenated Vegetable Oil Bio-fuel (HVO).
- Fleet Vehicle Fuel: Fuel data were obtained from turnover records and converted to CO_2e using HVO, Diesel and Propane Gas conversion factors.

SCOPE 2

- Electricity: kWh data from site meters were converted to CO_2e using UK Government GHG Conversion Factors.
- Purchased Heat: Data from Liverpool site meters were similarly converted to CO_2e.

SCOPE 3

- Business Travel, Rental Cars: A third-party provider supplied fuel spending data, which we converted to litres using the average cost of a litre of fuel. We then applied the UK Govt average car emission factor to this volume of fuel to calculate the carbon impact.
- Business Travel, Employee Expense Claims: We used total mileage, and applied the UK Govt conversion factor for an average car to calculate the resulting carbon impact.
- Water Consumption: We used data from on-site water meters, and applied the conversion factor for supplied water, and water discharge.

TABLE 2: ADDITIONAL REPORTING - WASTE

	REPORTING YEAR 2022-23			REPORTING YEAR 2023-24		
UNITS	**SOUTHAMPTON**	**LIVERPOOL**	**TOTAL**	**SOUTHAMPTON**	**LIVERPOOL**	**TOTAL**
Incinerated Waste tonnes	48.02	0.36	**48.38**	46.04	0.40	**46.44**
Landfill tonnes	18.76	0.00	**18.76**	8.22	0.00	**8.22**
Anaerobic Digestion of Food Waste, Producing Renewable Biogas tonnes	4.25	0.00	**4.25**	4.02	0.00	**4.02**
Recycled tonnes	89.84	2.71	**92.55**	82.42	7.31	**89.73**
Total Emissions from Waste Scope 3 / tonnes CO_2e		**Sub Total** tCO_2e	**11.49**		**Sub Total** tCO_2e	**4.99**

WASTE MANAGEMENT

We have four waste streams at NOC; namely incinerated waste, landfill, anaerobic digestion of food waste processed off-site, and recycling. Data is gathered from waste management reports, disposal records, and recycling statistics to ensure accurate emissions assessment using emissions factors for each type of waste.

* As of 30th September 2023
** As of 31st July 2024

TABLE 3: ADDITIONAL REPORTING - AIR AND RAIL EMISSIONS	REPORTING YEAR 2022-23	REPORTING YEAR 2023-24
UNITS	**TOTAL**	**TOTAL**
Domestic Air emissions tonnes CO_2e	32.58	34.59
Short-Haul Air tonnes CO_2e	123.12	225.32
Long-Haul Air tonnes CO_2e	446.59	772.42
International Air tonnes CO_2e	340.44	233.29
Domestic Rail tonnes CO_2e	15.24	21.09
International Rail tonnes CO_2e	0.13	0.05
Total Emissions from Business Travel	958.10	1,286.76
Grand Total tonnes CO_2e	19,323.38	20,110.71
Full Time Equivalent Staff (FTE)	651.10*	683.60**
Intensity Ratio tonnes CO_2e / FTE	29.68	24.41

BUSINESS TRAVEL, AIR AND RAIL

We receive monthly carbon impact reports from our travel booking partner, who tracks and records all travel emissions. Rail and air travel is mostly booked by our scientific teams for conferences, research trips, and RSS vessel missions, including essential crew for the mariners. Our shore-based staff also travel between our Southampton and Liverpool sites, though most meetings are conducted online via Teams video conferencing to minimize travel and recycling statistics to ensure accurate emissions assessment using emissions factors for each type of waste.

RISK MANAGEMENT STATEMENT

NOC's risk management framework continues to support the company's management in the taking of risk in line with the Board's risk appetite. Risk reporting and discussion has been ongoing throughout the year and have played a significant role in enabling the Board and management to take decisions both in respect to the execution of the business' strategic objectives and in the avoidance of unwanted outcomes.

Our Risk Management Framework continues to provide management with the ability to anticipate the evolution of risks and the mitigations necessary to remain within appetite; to increase our resilience to change, and to reduce the threats and uncertainty faced by the organisation. It also supports management in the maximisation of opportunities by better facilitating informed decision-making whilst also providing assurance that the company taking steps to ensure it is operating within appetite.

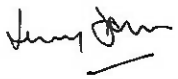
The Executive Directors play a lead role in identifying and managing risk throughout the organisation, acting as the escalation route for risks to the Executive Directors, the Risk and Audit Committee and the Board of Trustees. The Board and management are aided by a Risk Management function providing oversight, advice, challenge, and guidance for the management of risk; support for risk reporting and the development of policies, procedures, regulatory compliance and training.

PRINCIPAL RISKS AND UNCERTAINTIES

The Board of Trustees and the Risk and Audit Committee provide essential and valued external challenge and advice through an ongoing assessment of the company's emerging and principal risks. Notably, our Board committees have provided challenge and support to management on the key risks impacting the company over the past 12 months. Principal amongst these risks have been:

- ongoing management of the risks associated with the transformation of NOC's infrastructure, systems, controls and staffing against an increasing appetite for the commercialisation of the technical knowledge of the organisation;
- the challenges faced by the organisation as it increases its appetite and ability to seek and win funding away from its traditional sources of income;
- the ongoing challenges associated with the retention and recruitment of staff to ensure we remain competitive and as a result of barriers to continued reliance on talent based in the EU;
- ongoing management of the continuously evolving threat of cyber-attack through the implementation of available safeguards and recommended best practice whilst also maintaining access to the scientific data we manage and support the communities who access our IT estate; and
- NOC's goal to increase the diversity of its sources of funding against an uncertain landscape for funding from our traditional and largest sources.

NOC continues to evolve its Risk Management Framework in support of improvements in risk insights, accountability, and the future evolution of the organisation. NOC anticipates undertaking a thorough review of its risk management practices over the next 12 months to ensure its risk appetite, approach to risk management and the way it reports and manages risk remain effective for the organisation.



SIR JEREMY DARROCH
CHAIR OF BOARD OF TRUSTEES
20 DECEMBER 2024

* As of 30th September 2023
** As of 31st July 2024

FINANCIAL REVIEW

RESULTS FOR THE YEAR

The net income and total increase to reserves for the year ended 30 September 2024 amounted to £4,573k (2023: £199k increase).

INCOME

Total income for the year for the group amounted to £86,213K (2023 : £85,401K). The income was principally derived from UKRI-NERC funding for research, the operation of research infrastructure, data management and services and facilities of £63,484K (2023: £61,612K). A further £13,852K (2023: £14,047K) of other grant income was derived from other grants such as EU and GCRF funding.

EXPENDITURE

Total expenditure for the year amounted to £81,640K (2023: £85,202K). Staff costs accounted for £41,998K (51%) (2023: £38,002K, 45%) of expenditure in the year. The increase in staff costs compared to the prior year relates to the annual pay award.

RESERVES POSITION AND POLICY

The NOC recorded a net increase in unrestricted reserves of £1,601K (2023: £2,027K increase) while there was a £87K decrease (2023: £1,411K increase) recorded in restricted reserves. This is due to the phasing of projects with income being earned on restricted projects and released as unrestricted funds to cover central overhead on projects. The restricted fixed asset reserves increased by £3,059K (2023: £3,239K increase) being the net of capital additions, capital disposals and depreciation charged during the year.

It is the policy of the Trustees to ensure that an amount is held in the unrestricted reserves to mitigate against operational risk likely to materialise over any 12-month period.

The reserves policy states that £8,000K of unrestricted reserves is required to be held as free cash for operational risk cover. This was deemed to still be applicable in the FY24 year.

As at 30 September 2024 unrestricted reserves were £19,250K (2023: £17,649K). The investment of unrestricted reserves is set out in the Investment Policy below.

INVESTMENT POLICY

The investment policy ensures that unrestricted reserves earmarked for investment opportunities are agreed, prioritised and approved in line with the NOC Strategy and Business Plan. As well as ensuring the delivery of the associated benefits and enhanced capability, whether this is financial or qualitative or both.

NOC will use the TRAC (Transparent Approach to Costing) FEC (Full Economic Cost) as the framework for pricing all contracts and projects and so ensuring it monitors its sustainability.

Under TRAC there is the Margin for Sustainability and Investment (MSI) that is built into the FEC recovery that will contribute to the unrestricted reserves annually and then become the overall investment pot and provide ongoing risk cover. It is in the interests of the charity and the beneficiaries of NOC to continue to invest in new capability and further the aims of the charity in terms of its advance of science. TRAC requires that NOC does not hold too much in the sustainability reserve and encourages continual investment using the amount over the sustainability margin. It is in the interests of the charity and the beneficiaries of NOC to continue to invest in new capability and further the aims of the charity in terms of its advance of science object.

The Board approved an investment of £850k out of unrestricted reserves in May 2022 and determined to continue to commit to investing at least £850k each year to upgrade and replenish assets and infrastructure transferred to NOC when its activities commenced. During the current year the Trustees approved investment of free cash into cash deposits to mitigate against the rising costs of overheads.

Deposits placed yielded interest of £1,418K (2023: £444K) during the year.

The Finance and Investment Committee are putting in place a 5-year investment plan. The committee is inviting business cases from staff for investment in furthering its charitable objectives to bring the plan into action. In considering each case the Finance and Investment Committee will look to ensure it is for the purposes of making a return as well as investing in the strategic aims of NOC. Investments will be kept under regular review for performance.

TRADING SUBSIDIARY

NOC's trading subsidiary, National Oceanography Centre Innovations Limited, was incorporated on 9 October 2019 and is a wholly-owned subsidiary of NOC. In the year to 30 September 2024 the subsidiary reported a loss for the financial year of £190K (2023: loss £5K).

There is an Operating Agreement in place between the charity and the trading subsidiary to ensure there is a structured and governed relationship. This includes detailed clauses which ensure the protection of licensed IP for the charity.

The trading subsidiary undertakes four significant areas of activity; product sales (marine data products), Events (Commercial activity only), Intellectual Property licensing (agreements) and Marine Robotic Innovation Centre – membership and renewal.

The Chair of NOC Innovations reports to the NOC Board of Trustees. The Board of Trustees review the progress of the subsidiary, ensuring that the strategic objectives of the subsidiary are not in conflict with its own and that the financial return is satisfactory. One member of the NOC Board of Trustees is a member of the trading subsidiary board.

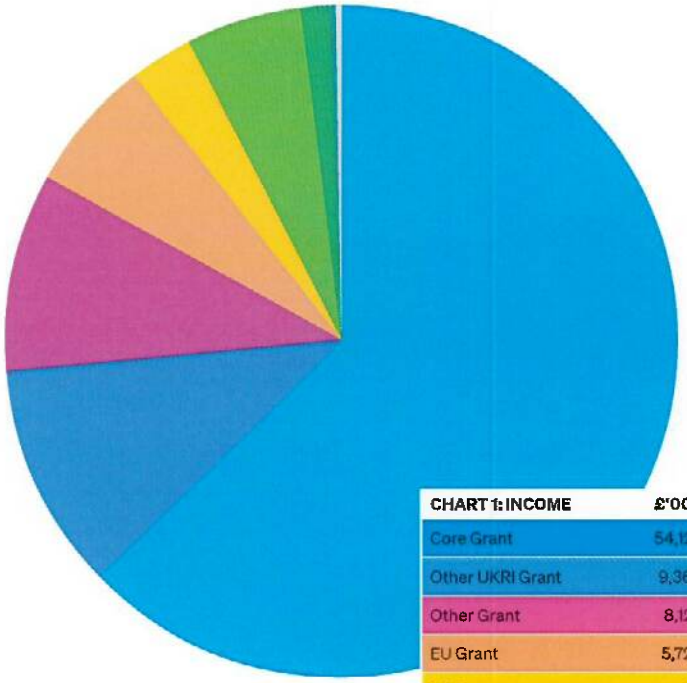


CHART 1: INCOME	£'000
Core Grant	54,124
Other UKRI Grant	9,360
Other Grant	8,124
EU Grant	5,728
NOC Innovations income	2,435
Trading income	4,771
Investment income	1,418
Other income	62
Donations	191
TOTAL INCOME	**86,213**

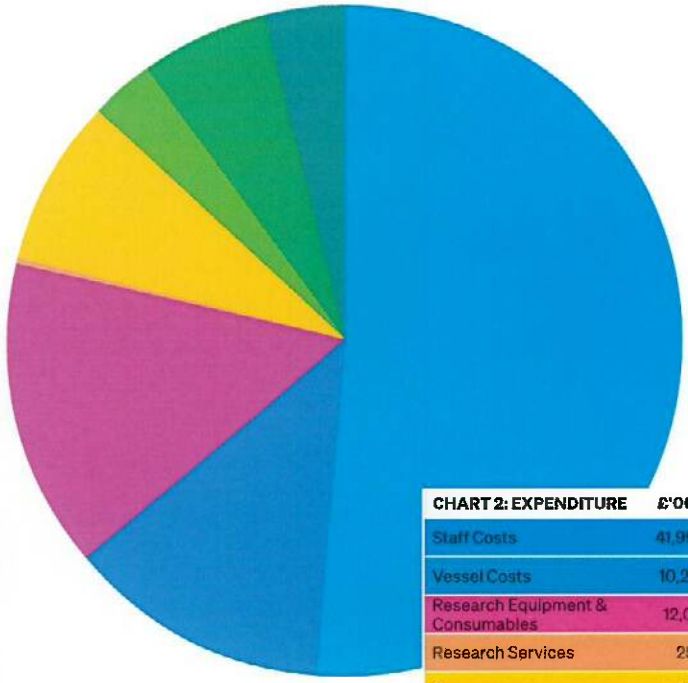


CHART 2: EXPENDITURE	£'000
Staff Costs	41,998
Vessel Costs	10,291
Research Equipment & Consumables	12,011
Research Services	254
Premises & Estate Costs	6,584
Administration Costs	2,517
Depreciation & Amortisation	4,896
Other costs	3,089
TOTAL EXPENDITURE	**81,640**

FUNDRAISING POLICY

NOC seeks to ensure all fundraising activity is conducted with due regard to the guidance of the Charity's Commission and the Fundraising Regulator. NOC has undertaken limited fundraising activity during the year to 30 September 2024. Going forward, NOC's approach to fundraising will be to seek support from charitable foundations, trusts and corporations through their foundations. In addition, there will be the opportunity for the public to donate via regular or one-off giving or supporting fundraising events.

PLANS FOR FUTURE PERIODS

Our Five-Year Strategy, and its seven interdisciplinary strategic goals, will enable us to maintain commitment and delivery of our Charitable Objectives. Detailed in the Trustees' Report (incorporating the Strategic Report) are the activities we'll be focusing on between 2020-25, as part of our Five-Year Strategy, and our funding framework will diversify to support this.

GOING CONCERN

NOC has put together a Five-Year Business Plan which brings together the National Capability funding from NERC-UKRI with signed research projects and those in the pipeline. For the year 2023/24 a bottom up budgeting process was carried out reviewing the full current cost base of NOC which has been trimmed back to achieve some savings assisting with the rising inflation. As such the cost base is covered by funded projects with some resource available to deliver new projects that are in the pipeline or in early stages of bid development at present. NOC is deploying detailed resource planning to inform recruitment. As the forecast goes out to 2024/25 and beyond there is more capacity to take on new funded projects, at this time the plan starts to forecast increased income from fundraising and NOC Innovations activity. Once this takes more shape, recruitment will be planned around the skills needed to deliver new areas of activity. Taking into consideration, signed Awards for National Capability infrastructure and science facilities and services spanning the next three-five years, current indications of recommissioning for National Capability Science, previous success rates in research grant rounds with sustained bid submission and forecast of future income based on marketing analysis the indications are that NOC can continue to cover its cost base over the coming five-year period.

In conclusion there are no material uncertainties to cast doubt on NOC's ability to continue as a going concern.

DISCLOSURE OF INFORMATION TO AUDITOR

Each of the persons who are Trustees at the time when this Trustees' report was approved has confirmed that so far as the Trustee is aware, there is no relevant audit information of which the charitable company's auditor is unaware; and that Trustees have taken all the steps that ought to have been taken by the Trustees in order to be aware of any relevant audit information and to establish that the charitable company's auditor is aware of that information.

AUDITOR

The auditor, BDO LLP, has indicated their willingness to continue in office. The designated Trustees will propose a motion reappointing the auditor at a meeting of the Trustees.

Approved by order of the members of the board of Trustees and signed on their behalf by

SIR JEREMY DARROCH
CHAIR OF BOARD OF TRUSTEES
20 DECEMBER 2024

STATEMENT OF TRUSTEES' RESPONSIBILITIES

The Trustees (who are also the directors of the Charity for the purposes of company law) are responsible for preparing the Trustees' Report including the Strategic Report and the financial statements in accordance with applicable law and United Kingdom Accounting Standards (United Kingdom Generally Accepted Accounting Practice).

Company law requires the Trustees to prepare financial statements for each financial period. Under company law the Trustees must not approve the financial statements unless they are satisfied that they give a true and fair view of the state of affairs of the Group and the Charity and of the incoming resources and application of resources, including the income and expenditure of the Group for that period. In preparing these financial statements, the Trustees are required to:

- select suitable accounting policies and then apply them consistently;
- observe the methods and principles in the Charities SORP (FRS102);
- make judgements and accounting estimates that are reasonable and prudent;
- state whether applicable UK Accounting Standards have been followed, subject to any material departures disclosed and explained in the financial statements; and
- prepare the financial statements on the going concern basis unless it is inappropriate to presume that the Group will continue in business.

The Trustees are responsible for keeping adequate accounting records that are sufficient to show and explain the Charity's transactions and disclose with reasonable accuracy at any time the financial position of the Charity and enable them to ensure that the financial statements comply with the Companies Act 2006. They are also responsible for safeguarding the assets of the Group and the Charity and hence for taking reasonable steps for the prevention and detection of fraud and other irregularities.

Financial statements are published on the Charity's website in accordance with legislation in the United Kingdom governing preparation and dissemination of financial statements, which may vary from legislation in other jurisdictions. The maintenance and integrity of the Charity's website is the responsibility of the trustees. The Trustees' responsibility also extends to the ongoing integrity of the financial statements contained therein.

Approved by order of the members of the board of Trustees and signed on their behalf by:

SIR JEREMY DARROCH
CHAIR OF BOARD OF TRUSTEES
20 DECEMBER 2024

INDEPENDENT AUDITOR'S REPORT

TO THE MEMBERS AND TRUSTEES OF NATIONAL OCEANOGRAPHY CENTRE

OPINION ON THE FINANCIAL STATEMENTS

In our opinion the financial statements:

- give a true and fair view of the state of the Group's and of the Parent Charitable Company's affairs as at 30 September 2024 and of the Group's incoming resources and application of resources and the Parent Charitable Company's incoming resources and application of resources for the year then ended;
- have been properly prepared in accordance with United Kingdom Generally Accepted Accounting Practice; and
- have been prepared in accordance with the requirements of the Company's Act 2006, Charities and Trustee Investment (Scotland) Act 2005 and regulations 6 and 8 of the Charities Accounts (Scotland) Regulations 2006, as amended.

We have audited the financial statements of National Oceanography Centre ("the Parent Charitable Company") and its subsidiaries ("the Group") for the year ended 30 September 2024 which comprise the consolidated statement of financial activities, the consolidated balance sheet, the charity balance sheet, the consolidated statement of cash flows and notes to the financial statements, including a summary of significant accounting policies. The financial reporting framework that has been applied in their preparation is applicable law and United Kingdom Accounting Standards, including Financial Reporting Standard 102 The Financial Reporting Standard applicable in the UK and Republic of Ireland (United Kingdom Generally Accepted Accounting Practice).

BASIS FOR OPINION

We conducted our audit in accordance with International Standards on Auditing (UK) (ISAs (UK)) and applicable law. Our responsibilities under those standards are further described in the Auditor's responsibilities for the audit of the financial statements section of our report. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

INDEPENDENCE

We remain independent of the Group and the Parent Charitable Company in accordance with the ethical requirements relevant to our audit of the financial statements in the UK, including the FRC's Ethical Standard, and we have fulfilled our other ethical responsibilities in accordance with these requirements.

CONCLUSIONS RELATING TO GOING CONCERN

In auditing the financial statements, we have concluded that the Trustees' use of the going concern basis of accounting in the preparation of the financial statements is appropriate.

Based on the work we have performed, we have not identified any material uncertainties relating to events or conditions that, individually or collectively, may cast significant doubt on the Group and the Parent Charitable Company's ability to continue as a going concern for a period of at least twelve months from when the financial statements are authorised for issue.

Our responsibilities and the responsibilities of the Trustees with respect to going concern are described in the relevant sections of this report.

OTHER INFORMATION

The Trustees are responsible for the other information. The other information comprises the information included in the Annual Report and Financial Statements, other than the financial statements and our auditor's report thereon. Our opinion on the financial statements does not cover the other information and, except to the extent otherwise explicitly stated in our report, we do not express any form of assurance conclusion thereon. Our responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the financial statements, or our knowledge obtained in the audit or otherwise appears to be materially misstated. If we identify such material inconsistencies or apparent material misstatements, we are required to determine whether there is a material misstatement in the financial statements or a material misstatement of the other information. If, based on the work we have performed, we conclude that there is a material misstatement of this other information, we are required to report that fact.

We have nothing to report in this regard.

OTHER COMPANIES ACT 2006 REPORTING

In our opinion, based on the work undertaken in the course of the audit:

- the information given in the Trustees' Report, which includes the Directors' Report, and the Strategic report prepared for the purposes of Company Law, for the financial year for which the financial statements are prepared is consistent with the financial statements; and
- the Strategic report and the Directors' Report, which are included in the Trustees' Report, have been prepared in accordance with applicable legal requirements.

In the light of the knowledge and understanding of the Group and the Parent Charitable Company and its environment obtained in the course of the audit, we have not identified material misstatement in the Strategic report or the Trustees' report.

We have nothing to report in respect of the following matters in relation to which the Companies Act 2006 and the Charities Accounts (Scotland) Regulations 2006 requires us to report to you if, in our opinion:

- proper and adequate accounting records have not been kept by the Parent Charitable Company, or returns adequate for our audit have not been received from branches not visited by us; or
- the Parent Charitable Company financial statements are not in agreement with the accounting records and returns; or
- certain disclosures of Directors' remuneration specified by law are not made; or
- we have not received all the information and explanations we require for our audit.

RESPONSIBILITIES OF TRUSTEES

As explained more fully in the statement of trustees' responsibilities, the Trustees (who are also the directors of the charitable company for the purposes of company law) are responsible for the preparation of the financial statements and for being satisfied that they give a true and fair view, and for such internal control as the Trustees determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, the Trustees are responsible for assessing the Group's and the Parent Charitable Company's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless the Trustees either intend to liquidate the Group or the Parent Charitable Company or to cease operations, or have no realistic alternative but to do so.

AUDITOR'S RESPONSIBILITIES FOR THE AUDIT OF THE FINANCIAL STATEMENTS

We have been appointed as auditor under section 44(1)(c) of the Charities and Trustee Investment (Scotland) Act 2005 and under the Companies Act 2006 and report in accordance with the Acts and relevant regulations made or having effect thereunder.

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance but is not a guarantee that an audit conducted in accordance with ISAs (UK) will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

EXTENT TO WHICH THE AUDIT WAS CAPABLE OF DETECTING IRREGULARITIES, INCLUDING FRAUD

Irregularities, including fraud, are instances of non-compliance with laws and regulations. We design procedures in line with our responsibilities, outlined above, to detect material misstatements in respect of irregularities, including fraud. The extent to which our procedures are capable of detecting irregularities, including fraud is detailed below:

NON-COMPLIANCE WITH LAWS AND REGULATIONS

Based on:

- Our understanding of the Group and Charitable Company and the sector in which it operates;
- Discussion with management and those charged with governance, including the Audit and Risk Committee; and
- Obtaining and understanding of the Group's and Charitable Company's policies and procedures regarding compliance with laws and regulations; and

We considered the significant laws and regulations to be the Companies Act 2006, Charity regulations in England and Scotland and UK tax legislation.

The Group is also subject to laws and regulations where the consequence of non-compliance could have a material effect on the amount or disclosures in the financial statements, for example through the imposition of fines or litigations. We identified such laws and regulations to be health and safety legislation.

Our procedures in respect of the above included:

- Review of minutes of meeting of those charged with governance for any instances of non-compliance with laws and regulations;
- Review of correspondence with regulatory and tax authorities for any instances of non-compliance with laws and regulations;
- Review of financial statement disclosures and agreeing to supporting documentation; and
- Involvement of tax specialists in the audit.

FRAUD

We assessed the susceptibility of the financial statements to material misstatement, including fraud. Our risk assessment procedures included:

- Enquiry with management and those charged with governance regarding any known or suspected instances of fraud;
- Obtaining an understanding of the Group and the Charitable Company's policies and procedures relating to:
  - Detecting and responding to the risks of fraud; and
  - Internal controls established to mitigate risks related to fraud.
- Review of minutes of meeting of those charged with governance for any known or suspected instances of fraud;
- Discussion amongst the engagement team as to how and where fraud might occur in the financial statements;
- Performing analytical procedures to identify any unusual or unexpected relationships that may indicate risks of material misstatement due to fraud;

Based on our risk assessment, we considered the area's most susceptible to fraud to be the posting of inappropriate journal entries to manipulate financial results, particularly in relation to recording revenue in the correct period.

Our procedures in respect of the above included testing a sample of journal entries throughout the year, which met a defined risk criteria, by agreeing to supporting documentation

We also communicated relevant identified laws and regulations and potential fraud risks to all engagement team members and remained alert to any indications of fraud or non-compliance with laws and regulations throughout the audit.

Our audit procedures were designed to respond to risks of material misstatement in the financial statements, recognising that the risk of not detecting a material misstatement due to fraud is higher than the risk of not detecting one resulting from error, as fraud may involve deliberate concealment by, for example, forgery, misrepresentations or through collusion. There are inherent limitations in the audit procedures performed and the further removed non-compliance with laws and regulations is from the events and transactions reflected in the financial statements, the less likely we are to become aware of it.

A further description of our responsibilities for the audit of the financial statements is located at the Financial Reporting Council's ("FRC's") website at: https://www.frc.org.uk/auditorsresponsibilities. This description forms part of our auditor's report.

USE OF OUR REPORT

This report is made solely to the Charitable Company's members, as a body, in accordance with Chapter 3 of Part 16 of the Companies Act 2006, and to the Charitable Company's trustees, as a body, in accordance with the Charities and Trustee Investment (Scotland) Act 2005. Our audit work has been undertaken so that we might state to the Charitable Company's members and trustees those matters we are required to state to them in an auditor's report and for no other purpose. To the fullest extent permitted by law, we do not accept or assume responsibility to anyone other than the Charitable Company, the Charitable Company's members as a body and the Charitable Company's trustees as a body, for our audit work, for this report, or for the opinions we have formed.

DocuSigned by:
David I'Anson
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DAVID I'ANSON (SENIOR STATUTORY AUDITOR)
FOR AND ON BEHALF OF BDO LLP, STATUTORY AUDITOR, SOUTHAMPTON, UK

20 December 2024

BDO LLP is a limited liability partnership registered in England and Wales (with registered number OC305127).

CONSOLIDATED STATEMENT OF FINANCIAL ACTIVITIES

FOR THE YEAR ENDED 30 SEPTEMBER 2024
INCORPORATING AN INCOME & EXPENDITURE ACCOUNT

	NOTE	UNRESTRICTED FUNDS	RESTRICTED FUNDS	RESTRICTED FIXED ASSET FUNDS	TOTAL 2024
		£'000	£'000	£'000	£'000
Income from:					
Donations, grants and legacies	1	42,403	28,066	7,058	77,527
Income from trading subsidiary	10	2,435	-	-	2,435
Other trading activities	2	4,242	529	-	4,771
Investments	3	1,418	-	-	1,418
Other income	2a	58	4	-	62
Total incoming resources		**50,556**	**28,599**	**7,058**	**86,213**
Expenditure on:					
Raising funds:					
Expenditure from trading subsidiary	10	2,625	-	-	2,625
Charitable activities	4	46,330	28,686	3,999	79,015
Total expenditure		**48,955**	**28,686**	**3,999**	**81,640**
Net income/ (expenditure)		1,601	(87)	3,059	4,573
Net movement in funds	**15**	**1,601**	**(87)**	**3,059**	**4,573**
Reconciliation of funds:					
Fund balances at beginning of year	15	17,649	2,550	7,074	27,273
Net movement in funds		1,601	(87)	3,059	4,573
Total fund balances at 30 September 2024	15	**19,250**	**2,463**	**10,133**	**31,846**

FOR COMPARATIVE PURPOSES – FINANCIAL PERFORMANCE FOR THE PRIOR FINANCIAL YEAR

	NOTE	UNRESTRICTED FUNDS	RESTRICTED FUNDS	RESTRICTED FIXED ASSET FUNDS	TOTAL 2023
		£'000	£'000	£'000	£'000
Income from:					
Donations, grants and legacies	1	50,889	24,513	308	75,710
Income from trading subsidiary	10	2,623	-	-	2,623
Other trading activities	2	6,356	24	-	6,380
Investments	3	444	-	-	444
Other income	2a	244	-	-	244
Total incoming resources		**60,556**	**24,537**	**308**	**85,401**
Expenditure on:					
Raising funds:					
Expenditure from trading subsidiary	10	2,628	-	-	2,628
Charitable activities	4	53,566	25,326	3,682	82,574
Total expenditure		**56,194**	**25,326**	**3,682**	**85,202**
Net income/ (expenditure)		4,362	(789)	(3,374)	199
Transfers between funds	15	(2,335)	2,200	135	-
Net movement in funds	15	**2,027**	**1,411**	**(3,239)**	**199**
Reconciliation of funds:					
Fund balances at beginning of year	15	15,622	1,139	10,313	27,074
Net movement in funds		2,027	1,411	(3,239)	199
Total fund balances at 30 September 2023	15	**17,649**	**2,550**	**7,074**	**27,273**

All amounts are derived from continuing activities during the above two periods. The consolidated statement of financial activities includes all gains and losses recognised in the year.

CONSOLIDATED BALANCE SHEET

AT 30 SEPTEMBER 2024

COMPANY NUMBER: 11444362

	NOTE	2024	2024	2023	2023
		£'000	£'000	£'000	£'000
Fixed assets					
Intangible assets	8		-		1
Tangible assets	9		16,655		14,411
Investments	10		-		-
Total Fixed Assets			**16,655**		**14,412**
Current assets					
Investments	10	8,000		4,000	
Stock	11	566		553	
Debtors	12	13,630		13,527	
Cash at bank and in hand	17	26,528		33,347	
Total Current Assets		**48,724**		**51,427**	
Creditors: amounts falling due within one year	13	(33,533)		(38,566)	
Net current assets			**15,191**		**12,861**
Net assets	16		**31,846**		**27,273**
Funds					
Unrestricted	15		19,250		17,649
Restricted	15		2,463		2,550
Restricted fixed asset	15		10,133		7,074
Total funds	15		**31,846**		**27,273**

The financial statements were approved and authorised for issue by the Trustees and signed on their behalf by:

SIR JEREMY DARROCH
CHAIR OF BOARD OF TRUSTEES
20 DECEMBER 2024

CHARITY BALANCE SHEET

AT 30 SEPTEMBER 2023

COMPANY NUMBER: 11444362

	NOTE	2024	2024	2023	2023
		£'000	£'000	£'000	£'000
Fixed assets					
Intangible assets	8		-		1
Tangible assets	9		16,655		14,390
Investments	10		-		-
Total Fixed Assets			**16,655**		**14,391**
Current assets					
Investments	10	8,000		4,000	
Stock	11	566		553	
Debtors	12	13,473		13,457	
Cash at bank and in hand	17	25,949		32,681	
Total Current Assets		**47,988**		**50,691**	
Creditors: amounts falling due within one year	13	(32,469)		(37,671)	
Net current assets			**15,519**		**13,020**
Net assets	16		**32,174**		**27,411**
Funds					
Unrestricted	15		19,578		17,787
Restricted	15		2,463		2,550
Restricted fixed asset	15		10,133		7,074
Total funds	15		**32,174**		**27,411**

As permitted by S408 of the Companies Act 2009, the Charity has not presented its own income and expenditure account and related notes. The Charity's surplus for the year was £4,763K (2023: surplus £204K).

The financial statements were approved and authorised for issue by the Trustees on and signed on their behalf by:

SIR JEREMY DARROCH
CHAIR OF BOARD OF TRUSTEES
20 DECEMBER 2024

The notes on pages 84-99 form part of these financial statements.

CONSOLIDATED STATEMENT OF CASH FLOWS

AT 30 SEPTEMBER 2024

COMPANY NUMBER: 11444362

	NOTE	2024	2023
		£'000	£'000
Cash flows from operating activities			
Surplus for the year:		4,573	199
Depreciation	5	4,896	4,302
Amortisation	5	1	44
Loss on disposal of Fixed Assets		746	340
Investment income	3	(1,418)	(444)
Decrease/ (increase) in stock	11	(13)	30
Decrease/ (increase) in Debtor	12	(103)	3,112
(Decrease) in Creditors	13	(5,033)	(10,515)
Net cash provided by/ (used in) operating activities		**3,649**	**(2,932)**
Cash flows from investing activities			
Investment income	3	1,418	444
Proceeds from sale of tangible assets		-	16
Increase in cash deposits > 90 days		(4,000)	(4,000)
Purchase of tangible assets	9	(7,886)	(3,424)
Net cash used in investing activities		**(10,468)**	**(6,964)**
Decrease in cash and cash equivalents in the year		**(6,819)**	**(9,896)**
Cash and cash equivalents at the beginning of the year	17	**33,347**	**43,243**
Cash and cash equivalents at the end of the year	17	**26,528**	**33,347**

The notes on pages 84-99 form part of these financial statements.

NOTES TO THE FINANCIAL STATEMENTS

BASIS OF PREPARATION OF FINANCIAL STATEMENTS

The financial statements have been prepared on a going concern basis under the historical cost convention. The financial statements have been prepared in accordance with the Charities SORP, 2nd Edition (FRS 102) Accounting and Reporting by Charities: Statement of Recommended Practice applicable to charities preparing their accounts in accordance with the Financial Reporting Standard applicable in the UK and Republic of Ireland (FRS 102) (effective 1 January 2019), the Financial Reporting Standard applicable in the UK and Republic of Ireland (FRS 102) and the Companies Act 2006.

National Oceanography Centre meets the definition of a public benefit entity under FRS 102. Assets and liabilities are initially recognised at historical cost or transaction value unless otherwise stated in the relevant accounting policy.

The financial statements are prepared in Sterling, which is the functional currency of the Group. Monetary amounts in these financial statements are rounded to the nearest thousand pounds.

The preparation of financial statements in compliance with FRS 102 requires the use of certain critical accounting estimates. It also requires management to exercise judgement in applying the Group's accounting policies.

The following principal accounting policies have been applied consistently:

BASIS OF CONSOLIDATION

The Consolidated Statement of Financial Activities (SOFA) and Consolidated Balance Sheet consolidate the financial statements of the Company and its subsidiary undertaking. The results of the subsidiary are consolidated on a line-by-line basis.

The Parent Charitable Company has taken advantage of the exemption allowed under section 408 of the Companies Act 2006 and has not presented its own Statement of Financial Activities in these financial statements.

EXEMPTIONS FOR QUALIFYING ENTITIES UNDER FRS 102

The Parent Charitable Company has taken advantage of the following disclosure exemptions available in FRS 102:

- from preparing a statement of cash flows;
- from financial instruments disclosures; and
- from the aggregate remuneration of the key management personnel as their remuneration is included in the totals for the group as a whole.

GOING CONCERN

The Trustees have reviewed whether it is appropriate for the financial statements to be prepared on a going concern basis.

The key assumption in assessing going concern is that NOC's key funders (UKRI and EU) have continued to pay as per their schedules, and the costs of delivery can continue to be met against rising inflation.

NOC has put together a Five-Year Business Plan which brings together the National Capability funding from NERC-UKRI with signed research projects and those in the pipeline. For the year 2023/24 a bottom up budgeting process was carried out reviewing the full current cost base of NOC which has been trimmed back to achieve some savings assisting with the rising inflation. As such the cost base is covered by funded projects with some resource available to deliver new projects that are in the pipeline or in early stages of bid development at present. NOC is deploying detailed resource planning to inform recruitment.

As the forecast goes out to 2024/25 and beyond there is more capacity to take on new funded projects, at this time the plan starts to forecast increased income from fundraising and NOC Innovations activity. Once this takes more shape the recruitment will be planned around the skills needed to deliver new areas of activity. Taking into consideration, signed Awards for National Capability infrastructure and science facilities and services spanning the next 3-5 years, current indications of recommissioning for National Capability Science, previous success rates in research grant rounds with sustained bid submission and forecast of future income based on marketing analysis the indications are that NOC can continue to cover its cost base over the coming five-year period.

In conclusion there are no material uncertainties to cast doubt on NOC's ability to continue as a going concern.

INCOME

All income is recognised once the Group has entitlement to the income, it is probable that the income will be received, and the amount of income receivable can be measured reliably.

Grants are included in the Consolidated Statement of Financial Activities on a receivable basis. The balance of income received for specific purposes but not expended during the year is shown in the relevant funds on the Balance Sheet. Where income is received in advance of entitlement of receipt, its recognition is deferred and included in creditors as deferred income. Where entitlement occurs before income is received, the income is accrued. Donations and grants for particular purposes are included in income as restricted funds.

Where grants relate to donated fixed assets, they are measured at fair value, unless it is impractical to measure this reliably, in which case the cost of the item to the donor is used. The gain is recognised as income from donations and a corresponding amount is included in the appropriate fixed asset class and depreciated over the useful economic life, in accordance with the Group's accounting policies.

Investment income relates to interest on funds held on deposit and is included when receivable and the amount can be measured reliably by the Group; this is normally upon notification of the interest paid or payable by the institution with whom the funds are deposited.

Incoming resources from charitable trading activity are accounted for when earned.

Where a contract for services is performed gradually over time the revenue is recognised as the activity progresses. The amount of revenue reflects the costs incurred up to the balance sheet date.

All other income is recognised on an accruals basis once the Group is legally entitled to receipt.

EXPENDITURE

Expenditure is recognised once there is a legal or constructive obligation to transfer economic benefit to a third party, it is probable that a transfer of economic benefits will be required in settlement and the amount of the obligation can be measured reliably.

Expenditure is classified by activity. The costs of each activity are made up of the total of direct costs and shared costs, including support costs involved in undertaking each activity.

Direct costs attributable to a single activity are allocated directly to that activity. Shared costs which contribute to more than one activity and support costs which are not attributable to a single activity are apportioned between those activities on a basis consistent with the use of resources. Central staff costs are allocated on the basis of time spent, and depreciation charges allocated on the portion of the asset's use.

Expenditure on raising funds includes all expenditure incurred by the Group to raise funds for its charitable purposes and includes costs of all fundraising activities events and non-charitable trading.

Expenditure on charitable activities is incurred on directly undertaking the activities which further the Group's objectives, as well as any associated support costs.

Governance costs include those incurred in the governance of the Charity and its assets and are primarily associated with constitutional and statutory requirements.

All expenditure is inclusive of irrecoverable VAT.

FOREIGN CURRENCIES

Monetary assets and liabilities denominated in foreign currencies are translated into sterling at rates of exchange ruling at the reporting date.

Transactions in foreign currencies are translated into sterling at the rate ruling on the date of the transaction.

Exchange gains and losses are recognised in the Consolidated Statement of Financial Activities.

INTANGIBLE ASSETS AND AMORTISATION

Intangible assets are capitalised and recognised when future economic benefits are probable, and the cost or value of the asset can be measured reliably.

Intangible assets are initially recognised at cost. After recognition, under the cost model, intangible assets are measured at cost less any accumulated amortisation and any accumulated impairment losses.

At each reporting date the Charity assesses whether there is any indication of impairment. If such indication exists, the recoverable amount of the asset is determined to be the higher of its fair value less costs to sell and its value in use. An impairment loss is recognised where the carrying amount exceeds the recoverable amount.

Amortisation is provided on intangible assets at rates calculated to write off the cost of each asset on a straight-line basis over its expected useful life.

The estimated useful lives are as follows:

Computer software - 5 years straight line

TANGIBLE FIXED ASSETS AND DEPRECIATION

Tangible fixed assets are capitalised and recognised when future economic benefits are probable, and the cost or value of the asset can be measured reliably.

Tangible fixed assets are initially recognised at cost. After recognition, under the cost model, tangible fixed assets are measured at cost less accumulated depreciation and any accumulated impairment losses. All costs incurred to bring a tangible fixed asset into its intended working condition should be included in the measurement of cost.

Assets in the course of construction are included at costs incurred to date. Depreciation on these assets is not charged until they are brought into use.

At each reporting date the Charity assesses whether there is any indication of

impairment. If such indication exists, the recoverable amount of the asset is determined to be the higher of its fair value less costs to sell and its value in use. An impairment loss is recognised where the carrying amount exceeds the recoverable amount.

Depreciation is charged on a straight-line basis over their estimated useful lives.

Depreciation is provided on the following bases

Scientific equipment	- 5 years
Marine pool	- 5 years
Fixtures and fittings	- 5 years
Computer equipment	- 5 years
Plant and machinery	- 5 years

The assets' residual values, useful lives and depreciation methods are reviewed, and adjusted prospectively if appropriate, or if there is an indication of a significant change since the last reporting date.

Gains and losses on disposals are determined by comparing the proceeds with the carrying amount and are recognised in the Consolidated Statement of Financial Activities.

INVESTMENTS

Investments in subsidiaries are valued at cost less provision for impairment.

STOCKS

Stocks comprise of fuel held in storage for vessels and ship bond stock. Fuel stock is recorded at cost. Ship bond stock is valued at the lower of cost and net realisable value after making due allowance for obsolete and slow-moving stocks.

DEBTORS

Trade and other debtors are recognised at the settlement amount after any trade discount offered. Prepayments are valued at the amount prepaid net of any trade discounts due.

Work in progress reflects the costs incurred to balance sheet date on a contract for services.

CASH AND CASH EQUIVALENTS

Cash at bank and in hand includes cash and short term highly liquid investments with a short maturity of three months or less from the date of acquisition or opening of the deposit or similar account.

LIABILITIES AND PROVISIONS

Liabilities are recognised when there is an obligation at the Balance Sheet date as a result of a past event, it is probable that a transfer of economic benefit will be required in settlement, and the amount of the settlement can be estimated reliably.

Liabilities are recognised at the amount that the Group anticipates it will pay to settle the debt or the amount it has received as advanced payments for the goods or services it must provide.

FINANCIAL INSTRUMENTS

The Group only has financial assets and financial liabilities of a kind that qualify as basic financial instruments. Basic financial instruments are initially recognised at transaction value and subsequently measured at their settlement value with the exception of bank loans which are subsequently measured at amortised cost using the effective interest method.

OPERATING LEASES

Rentals paid under operating leases are charged to the Consolidated Statement of Financial Activities on a straight-line basis over the lease term.

PENSIONS

The Group operates a defined contribution pension scheme, and the pension charge represents the amounts payable by the Group to the fund in respect of the year.

The Group is also participating in a multi-employer plan with The National Environmental Research Council which is a defined benefit scheme funded from annual grant in aid on a pay as you go basis. It is not possible for the Group to obtain sufficient information to enable it to account for the plan as a defined benefit plan, it therefore accounts for the plan as a defined contribution plan.

FUND ACCOUNTING

General funds are unrestricted funds which are available for use at the discretion of the Trustees in furtherance of the general objectives of the Group and which have not been designated for other purposes.

Designated funds comprise unrestricted funds that have been set aside by the Trustees for particular purposes. The aim and use of each designated fund is set out in the notes to the

financial statements.

Restricted funds are funds which are to be used in accordance with specific restrictions imposed by donors or which have been raised by the Group for particular purposes. The costs of raising and administering such funds are charged against the specific fund. The aim and use of each restricted fund is set out in the notes to the financial statements.

Restricted fixed asset funds represent the moveable assets of the National Oceanography Centre, being the plant, equipment (including IT equipment), libraries, stocks, inventory and consumables of the operation. Without them the National Oceanography Centre could not operate. They are shown separately to other unrestricted funds due to the size and importance of these assets to the National Oceanography Centre.

Investment Income, gains and losses are allocated to the appropriate fund.

GIFT AID DONATIONS MADE TO THE CHARITY

Donations made by the subsidiary to the Parent Charity are recognised as income in the charity either when paid or at the date when the subsidiary has a legal liability to make the donation payment if earlier.

RESEARCH VESSELS

NOC operates and manages two research vessels owned by UKRI under a bareboat charter at peppercorn rates. The terms of the bareboat charter do not meet the definition of a lease and, due to the unique nature of the vessels, it is not possible to reasonably quantify the value ascribed to the ownership and operation of them.

CRITICAL ACCOUNTING ESTIMATES AND AREAS OF JUDGEMENT

Estimates and judgements are continually evaluated and are based on historical experience and other factors, including expectations of future events that are believed to be reasonable under the circumstances.

CRITICAL ACCOUNTING ESTIMATES AND ASSUMPTIONS

The Group makes estimates and assumptions concerning the future. The resulting accounting estimates and assumptions will, by definition, seldom equal the related actual results. The estimates and assumptions that have a significant risk of causing a material adjustment to the carrying amounts of assets and liabilities within the next financial year are discussed below.

CRITICAL AREAS OF JUDGEMENT

Depreciation is a key estimate in the accounts which requires management judgement over the useful life of the assets and the residual values. The policy has been set out in the notes above.

1 INCOME FROM DONATIONS AND LEGACIES

GROUP AND CHARITY	UNRESTRICTED FUNDS 2024 £'000	RESTRICTED FUNDS 2024 £'000	RESTRICTED FIXED ASSET FUNDS 2024 £'000	TOTAL FUNDS 2024 £'000	TOTAL FUNDS 2023 £'000
Donations:					
Other donations	108	83	-	191	51
Total Donations	**108**	**83**	**-**	**191**	**51**
Income from grants:					
UKRI NERC grant	22,149	26,709	5,266	54,124	50,825
UKRI other grants	8,819	124	417	9,360	10,787
Other grants	11,327	1,150	1,375	13,852	14,047
Total Grants	**42,295**	**27,983**	**7,058**	**77,336**	**75,659**
Total Donations and Grants	**42,403**	**28,066**	**7,058**	**77,527**	**75,710**

2 INCOME FROM TRADING ACTIVITIES

GROUP AND CHARITY	UNRESTRICTED FUNDS 2024 £'000	RESTRICTED FUNDS 2024 £'000	TOTAL FUNDS 2024 £'000	TOTAL FUNDS 2023 £'000
Rental	527	-	527	1,300
Disbursements	2,267	-	2,267	1,909
Maintenance and repairs income	1,381	529	1,910	3,086
Bond sales	60	-	60	66
Ship charter income	-	-	-	19
Other trading income	7	-	7	41
Total Other Trading Income	**4,242**	**529**	**4,771**	**6,380**

2A OTHER INCOME

GROUP AND CHARITY	UNRESTRICTED FUNDS 2024 £'000	RESTRICTED FUNDS 2024 £'000	TOTAL FUNDS 2024 £'000	TOTAL FUNDS 2023 £'000
Other donations	58	4	62	244

3 INCOME FROM INVESTMENTS

GROUP AND CHARITY	UNRESTRICTED FUNDS 2024 £'000	TOTAL FUNDS 2024 £'000	TOTAL FUNDS 2023 £'000
Bank interest	1,418	1,418	444

4 EXPENDITURE ON CHARITABLE ACTIVITIES

GROUP AND CHARITY	STAFF COSTS 2024 £'000	VESSEL COSTS 2024 £'000	RESEARCH COSTS 2024 £'000	ESTATE COSTS 2024 £'000	DEPRECIATION 2024 £'000	OTHER COSTS 2024 £'000	TOTAL 2024 £'000	TOTAL 2023 £'000
Activities undertaken directly								
Scientific research	27,046	10,291	12,526	1,881	1,218	254	53,216	60,975
Support costs								
- Administration costs	14,952	-	(515)	4,703	3,678	2,517	25,335	21,075
- Governance costs	-	-	-	-	-	464	464	524
Total Expenditure	**41,998**	**10,291**	**12,011**	**6,584**	**4,896**	**3,235**	**79,015**	**82,574**

GROUP AND CHARITY	TOTAL FUNDS 2024 £'000	TOTAL FUNDS 2023 £'000
Analysis of governance costs		
Audit fees:		
- Audit of financial statements	126	125
- Other fees paid to auditors	106	178
Trustee remuneration and expenses	9	8
Legal and professional fees	211	200
Finance costs	12	13
Total Governance costs	**464**	**524**

Total expenditure on charitable activities for the year was £79,015K (2023: £82,574K). Of that expenditure £46,330K (2023: £53,566K) was unrestricted, £28,686K (2023: £25,326K) was restricted and £3,999K (2023: £3,682K) was restricted fixed asset funds.

5 NET INCOME

GROUP AND CHARITY	2024 £'000	2023 £'000
Net income is stated after charging/ (crediting):		
Depreciation of tangible fixed assets	4,896	4,302
Amortisation of intangible fixed assets	1	44
Loss on disposal of equipment	746	340
Loss/ (Gain) on foreign exchange	81	288

6 STAFF COSTS

GROUP AND CHARITY	2024 £'000	2023 £'000
Wages and salaries	33,808	30,337
National insurance contributions	3,537	3,219
Pension costs	4,653	4,446
Total Staff Costs	**41,998**	**38,002**

During the year there were redundancy costs of £201K (2023: £61K) which were paid to 7 (2023: 9) members of staff. Of these 2 (2023: 2) were statutory redundancy pay and 5 (2023: 7) were severance pay.

The number of employees for the year was as follows:

GROUP AND CHARITY	2024 NUMBER	2023 NUMBER
Science and research staff	301	266
Fundraising staff	2	2
Operations and finance staff	215	207
Engineers and technicians	121	112
Mariners	83	86
Total Staff numbers	**722**	**673**

The number of employees whose employee benefits (excluding employer pension costs) exceeded £60,000 was:

GROUP AND CHARITY	2024 NUMBER	2023 NUMBER
£60,001 - £70,000	50	46
£70,001 - £80,000	28	19
£80,001 - £90,000	6	5
£90,001 - £100,000	1	3
£100,001 - £110,000	3	1
£110,001 - £120,000	1	0
£120,001 - £130,000	0	1
£130,001 - £140,000	1	1
£140,001 - £150,000	1	0

6 STAFF COSTS (CONTINUED)

GROUP AND CHARITY	2024 £'000	2023 £'000
Key management personnel salaries (inc. Employer pension contributions and National Insurance)	392	539
(Key management personnel are the Senior Management Team, as set out on page 61 of this report)		

7 TRUSTEE REMUNERATION AND EXPENSES

During the year one trustee received remuneration of £9K (2023: one trustee received £8K).

The remuneration was agreed and provided under a provision in the governing document of the Charity. Remuneration was provided due to the Trustees' role as the Chair of the Audit and Risk Committee, which requires a range of specialist knowledge and experience and has a wide remit in terms of the role that the Trustee is required to provide. No other benefits were provided.

During the year £1K (2023: £1K) of expenses were reimbursed to trustees in relation to travel and subsistence.

During the year professional indemnity insurance of £82K (2023: £78K) was purchased in respect of all the Trustees and Officers of the company.

8 INTANGIBLE FIXED ASSETS

GROUP AND CHARITY	COMPUTER SOFTWARE AND TOTAL £'000
Cost	
At 1 October 2023	1,609
Additions	-
At 30 September 2024	**1,609**
Amortisation	
At 1 October 2023	1,608
Charge for the year	1
At 30 September 2024	**1,609**
Net book value	
At 30 September 2024	-
At 30 September 2023	**1**

9 TANGIBLE FIXED ASSETS

GROUP	SCIENTIFIC EQUIPMENT £'000	MARINE POOL £'000	FIXTURES & FITTINGS £'000	COMPUTER EQUIPMENT £'000	PLANT & MACHINERY £'000	MOTOR VEHICLES £'000	TOTAL £'000
Cost or valuation							
At 1 October 2023	18,813	11,322	47	2,441	1,894	-	34,517
Additions	2,962	3,470	-	1,400	31	23	7,886
Disposals	(1,469)	(1,420)	-	(229)	(27)	-	(3,145)
At 30 September 2024	**20,306**	**13,372**	**47**	**3,612**	**1,898**	**23**	**39,258**
Depreciation							
At 1 October 2023	11,886	5,235	26	1,348	1,611	-	20,106
Charge for the year	2,619	1,612	21	389	255	-	4,896
On disposals	(1,122)	(1,023)	-	(227)	(27)	-	(2,399)
At 30 September 2024	**13,383**	**5,824**	**47**	**1,510**	**1,839**	**-**	**22,603**
Net book value							
At 30 September 2024	6,923	7,548	-	2,102	59	23	16,655
At 30 September 2023	6,927	6,087	21	1,093	283	-	14,411

CHARITY	SCIENTIFIC EQUIPMENT £'000	MARINE POOL £'000	FIXTURES & FITTINGS £'000	COMPUTER EQUIPMENT £'000	PLANT & MACHINERY £'000	MOTOR VEHICLES £'000	TOTAL £'000
Cost or valuation							
At 1 October 2023	18,813	11,322	-	2,441	1,894	-	34,470
Additions	2,962	3,470	-	1,400	31	23	7,886
Disposals	(1,469)	(1,420)	-	(229)	(27)	-	(3,145)
At 30 September 2024	**20,306**	**13,372**	**-**	**3,612**	**1,898**	**23**	**39,211**
Depreciation							
At 1 October 2023	11,886	5,235	-	1,348	1,611	-	20,080
Charge for the year	2,619	1,612	-	389	255	-	4,875
On disposals	(1,122)	(1,023)	-	(227)	(27)	-	(2,399)
At 30 September 2024	**13,383**	**5,824**	**-**	**1,510**	**1,839**	**-**	**22,556**
Net book value							
At 30 September 2024	6,923	7,548	-	2,102	59	23	16,655
At 30 September 2023	6,927	6,087	-	1,093	283	-	14,390

On 1 November 2019 goodwill and moveable assets - being the plant, equipment (including IT equipment), libraries, stocks, inventory and consumables of the operation, were transferred to the charity by way of a capital grant from UKRI totalling £24,646K.

10 INVESTMENTS

INVESTMENT IN SUBSIDIARIES

The following was a subsidiary undertaking of the Charity with a nominal value for the investment in the subsidiary of £1:

NAME	COMPANY NUMBER	REGISTERED OFFICE OR PRINCIPAL PLACE OF BUSINESS	PRINCIPAL ACTIVITY	CLASS OF SHARES	HOLDING
National Oceanography Centre Innovations Limited	12250763	National Oceanography Centre European Way Southampton United Kingdom SO14 3ZH	Development of products and services based on the output of ocean science research and engineering	Ordinary	100%

	2024	2023
	£'000	£'000
Income	2,435	2,623
Expenditure	2,625	2,628
Net liabilities	(190)	(5)

INVESTMENT IN CASH DEPOSITS

The value of cash deposits being held for greater than 30 days were:

GROUP AND CHARITY	2024 £'000	2023 £'000
Cash Deposits at 30 September	8,000	4,000

11 STOCK

GROUP AND CHARITY	2024 £'000	2023 £'000
Marine fuel	48	52
Ship bond	518	501
	566	553

12 DEBTORS

GROUP AND CHARITY	GROUP 2024 £'000	GROUP 2023 £'000	CHARITY 2024 £'000	CHARITY 2023 £'000
Trade debtors	5,647	4,094	5,306	3,965
Group debtors	-	-	404	216
Prepayments	1,374	1,888	1,374	1,888
Accrued income	6,493	7,180	6,277	7,023
Other debtors	116	365	112	365
Total Debtors	**13,630**	**13,527**	**13,473**	**13,457**

13 CREDITORS : AMOUNTS FALLING DUE WITHIN ONE YEAR

GROUP AND CHARITY	GROUP 2024 £'000	GROUP 2023 £'000	CHARITY 2024 £'000	CHARITY 2023 £'000
Trade creditors	1,181	768	1,181	768
Due to Marine and EU partners	(28)	118	(28)	118
Pension accrual	357	294	357	294
Social security and other taxes	242	2,228	(48)	2,048
Accruals	3,039	2,532	3,039	2,532
Deferred income (note 14)	28,742	32,626	27,968	31,911
Total Creditors	**33,533**	**38,566**	**32,469**	**37,671**

14 DEFERRED INCOME

GROUP AND CHARITY	GROUP 2024 £'000	GROUP 2023 £'000	CHARITY 2024 £'000	CHARITY 2023 £'000
At 1 October	32,626	37,526	31,911	37,311
Released to income	(76,649)	(78,502)	(76,590)	(78,486)
Amounts deferred in year	72,765	73,602	72,647	73,086
Carried forward	**28,742**	**32,626**	**27,968**	**31,911**

Deferred income relates to grant income, including research grants, which are received in advance of specific conditions being met. The income is shown as deferred until those conditions are fully satisfied.

15 FUNDS

GROUP	BALANCE AT 30 SEPTEMBER 2023 £'000	INCOME £'000	EXPENDITURE £'000	BALANCE AT 30 SEPTEMBER 2024 £'000
Unrestricted funds				
Designated unrestricted:				
Designated funds	3,924	1,950	(2,070)	3,804
General unrestricted:				
Unrestricted funds	13,725	48,606	(46,885)	15,446
Total unrestricted funds	**17,649**	**50,556**	**(48,955)**	**19,250**
Restricted funds				
Restricted funds	2,550	28,599	(28,686)	2,463
Restricted fixed asset funds	7,074	7,058	(3,999)	10,133
Total restricted funds	**9,624**	**35,657**	**(32,685)**	**12,596**
Total funds	**27,273**	**86,213**	**(81,640)**	**31,846**

CHARITY	BALANCE AT 30 SEPTEMBER 2023 £'000	INCOME £'000	EXPENDITURE £'000	BALANCE AT 30 SEPTEMBER 2024 £'000
Unrestricted funds				
Designated unrestricted:				
Designated funds	3,924	1,950	(2,070)	3,804
General unrestricted:				
Unrestricted funds	13,863	46,171	(44,260)	15,774
Total unrestricted funds	**17,787**	**48,121**	**(46,330)**	**19,578**
Restricted funds				
Restricted funds	2,550	28,599	(28,686)	2,463
Restricted fixed asset funds	7,074	7,058	(3,999)	10,133
Total restricted funds	**9,624**	**35,657**	**(32,685)**	**12,596**
Total funds	**27,411**	**83,778**	**(79,015)**	**32,174**

15 FUNDS (CONTINUED)

PRIOR YEAR COMPARATIVE FIGURES

GROUP	BALANCE AT 30 SEPTEMBER 2022 £'000	INCOME £'000	EXPENDITURE £'000	TRANSFERS £'000	BALANCE AT 30 SEPTEMBER 2023 £'000
Unrestricted funds					
Designated unrestricted:					
Designated funds	-	-	-	3924	3,924
General unrestricted:					
Unrestricted funds	15,622	60,556	(56,194)	(6,259)	13,725
Total unrestricted funds	**15,622**	**60,556**	**(56,194)**	**(2,335)**	**17,649**
Restricted funds					
Restricted funds	1,139	24,537	(25,326)	2,200	2,550
Restricted fixed asset funds	10,313	308	(3,682)	135	7,074
Total restricted funds	**11,452**	**24,845**	**(29,008)**	**2,335**	**9,624**
Total funds	**27,074**	**85,401**	**(85,202)**	**-**	**27,273**

CHARITY	BALANCE AT 30 SEPTEMBER 2022 £'000	INCOME £'000	EXPENDITURE £'000	TRANSFERS £'000	BALANCE AT 30 SEPTEMBER 2023 £'000
Unrestricted funds					
Designated unrestricted:					
Designated funds	-	-	-	3,924	3,924
General unrestricted:					
Unrestricted funds	15,755	57,933	(53,566)	(6,259)	13,863
Total unrestricted funds	**15,755**	**57,933**	**(53,566)**	**(2,335)**	**17,787**
Restricted funds					
Restricted funds	1,139	24,537	(25,326)	2,200	2,550
Restricted fixed asset funds	10,313	308	(3,682)	135	7,074
Total restricted funds	**11,452**	**24,845**	**(29,008)**	**2,335**	**9,624**
Total funds	**27,207**	**82,778**	**(82,574)**	**-**	**27,411**

15 FUNDS (CONTINUED)

General funds are unrestricted funds which are available for use at the discretion of the Trustees in furtherance of the general objectives of the Group and which have not been designated for other purposes.

Designated funds comprise unrestricted funds that have been set aside by the Trustees for particular purposes.

The aim and use of each designated fund are set out in the notes to the financial statements.

Restricted funds are funds which are to be used in accordance with specific restrictions imposed by donors or which have been raised by the Group for particular purposes. The costs of raising and administering such funds are charged against the specific fund.

Restricted funds comprise of NMF ship operating income, charter income balance and NMEP capital replacement.

Restricted fixed asset funds are funds for the sole use of acquiring the moveable assets of NOC on the 1 November 2019 and the expenditure is the subsequent depreciation of these assets.

16 NET ASSETS

GROUP	FIXED ASSETS 2024 £'000	INVESTMENTS 2024 £'000	OTHER CURRENT ASSETS 2024 £'000	CURRENT LIABILITIES 2024 £'000	TOTAL 2024 £'000
General unrestricted	2,683	-	41,505	(28,742)	15,446
Designated unrestricted	-	-	3,804	-	3,804
Restricted	2,646	-	3,390	(3,573)	2,463
Restricted fixed asset	11,326	-	25	(1,218)	10,133
Total Net Assets	**16,655**	**-**	**48,724**	**(33,533)**	**31,846**

GROUP	FIXED ASSETS 2023 £'000	INVESTMENTS 2023 £'000	OTHER CURRENT ASSETS 2023 £'000	CURRENT LIABILITIES 2023 £'000	TOTAL 2023 £'000
General unrestricted	2,539	-	34,729	(23,543)	13,725
Designated unrestricted	-	-	3,924	-	3,924
Restricted	3,862	-	13,711	(15,023)	2,550
Restricted fixed asset	8,011	-	(937)	-	7,074
Total Net Assets	**14,412**	**-**	**51,427**	**(38,566)**	**27,273**

16 NET ASSETS (CONTINUED)

CHARITY	FIXED ASSETS 2024 £'000	OTHER CURRENT ASSETS 2024 £'000	CURRENT LIABILITIES 2024 £'000	TOTAL 2024 £'000
General unrestricted	2,730	41,153	(28,109)	15,774
Designated unrestricted	-	3,804	-	3,804
Restricted	2,646	3,007	(3,190)	2,463
Restricted fixed asset	11,279	24	(1,170)	10,133
Total Net Assets	**16,655**	**47,988**	**(32,469)**	**32,174**

CHARITY	FIXED ASSETS 2023 £'000	OTHER CURRENT ASSETS 2024 £'000	CURRENT LIABILITIES 2024 £'000	TOTAL 2024 £'000
General unrestricted	2,518	33,993	(22,648)	13,863
Designated unrestricted	-	3,924	-	3,924
Restricted	3,862	13,711	(15,023)	2,550
Restricted fixed asset	8,011	(937)	-	7,074
Total Net Assets	**14,391**	**50,691**	**(37,671)**	**27,411**

17 CASH AND CASH EQUIVALENTS

	GROUP 2024 £'000	GROUP 2023 £'000	CHARITY 2024 £'000	CHARITY 2023 £'000
Cash at bank	26,528	33,347	25,949	32,681

19 OPERATING LEASE COMMITMENTS

GROUP AND CHARITY	2024 £'000	2023 £'000
No later than 1 year	1,418	1,500
between 1 and 5 years	5,670	250
Total Operating Lease Commitments	**7,088**	**1,750**

20 RELATED PARTY TRANSACTIONS

The Charity has made use of the exemptions in section 33.1A of FRS 102 and paragraph 1 of Schedule 5 of the Companies Act 2006 and has chosen not to disclose transactions with its wholly owned subsidiary, as these are eliminated on consolidation.

Transactions with Trustees are detailed in note 7.

21 PENSION COMMITMENTS

UKRI-NERC employees are entitled to be members of the Research Council's Pension Scheme which is a defined benefit scheme funded from annual grant-in-aid and pay-as-you-go basis. The pension scheme is contributory and is administered by the Research Council's Joint Superannuation Service.

The scheme is a multi-employer scheme, for which a separate Research Council's Pension Scheme account is published. NERC are unable to identify their share of the underlying assets and liabilities and those relating to NOC.

Employees who joined after 1 November 2019 are entitled to be members of the National Oceanography Centre Group Pension Scheme. This is a defined contribution pension scheme administered by Legal and General. Contributions for the year were employer's 10% and employees a minimum of 5%.

The pension costs charge for the year represents contributions payable to the schemes and amounted to £4,653K (2023: £4,446K).

A CTD being prepared for deployment at the Porcupine Abyssal Plain (PAP-SO) in the Atlantic Ocean

GO DEEPER

The National Oceanography Centre is one of the world's top oceanographic institutions.

We provide the UK's National Capability needed to be a top global player, to lead and participate in international co-operations. We undertake world leading research in large scale oceanography and ocean measurement technology innovation; working with government and business to turn great science and technology into advice and applications.

We support scientists in universities and research institutes with facilities, research infrastructure and irreplaceable data assets – enabling the UK to harness the full power and diversity of its ocean science talent.

To get bite-sized updates on our Science and Technology, Latest News, Public Events, Career Opportunities and Educational Resources, subscribe to Ocean News via our website or follow us on social media:

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LINKEDIN.COM/COMPANY/NATIONAL-OCEANOGRAPHY-CENTRE

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INSTAGRAM.COM/NOCNEWS

Cover image: The sun setting off the bow of the RRS *Discovery* whilst on deployment at the PAP-SO

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National Oceanography Centre is a company limited by guarantee, set up under the law of England and Wales, company number 11444362. National Oceanography Centre is registered as a charity in England and Wales, charity number 1185265, and in Scotland, charity number SC049896.
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NATIONAL OCEANOGRAPHY CENTRE

England & Wales - Charity number 1185265

Accounts

National Oceanography Centre

ANNUAL REPORT & FINANCIAL STATEMENTS 2022/23

FOR THE YEAR ENDED 30 SEPTEMBER 2023

REGISTERED NUMBER 11444362
CHARITY NUMBERS 1185265 & SC049896

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NATIONAL OCEANOGRAPHY CENTRE
A COMPANY LIMITED BY GUARANTEE

Annual Report and Financial Statements

Year Ended 30 September 2023
Registered Number 11444362
Charity Numbers 1185265 & SC049896

FOREWORD BY THE CHAIR OF TRUSTEES

As Chair of the Board of Trustees, I extend my gratitude to the talented and dedicated staff at NOC, whose unwavering commitment to our mission is truly inspiring. I also express my appreciation to our partners, funders, and supporters who help us on this journey. Your collective efforts are at the heart of NOC's successes.

In this annual report, we celebrate the achievements, milestones, and progress that define the NOC's 2022/23 fiscal year. Our work is a testament to the power of scientific exploration and our shared responsibility to protect the ocean for generations to come.

I was shocked to learn how the eruption of the submerged Hunga Volcano in January 2022 triggered fatal tsunamis and pressure waves that travelled around the planet. And I was proud to see how an emergency research collaboration between our scientists and local organisations used data from broken subsea cables to better understand the hazards at other submerged volcanoes worldwide. This demonstrated our relentless commitment to protect people and economic infrastructure from marine-related disasters.

Another story closer to home, was the opening of the brand-new exhibition Worlds Beneath the Waves at The National Museum of the Royal Navy, Portsmouth Historic Dockyard. NOC has always been passionate about education, working with individuals from childhood to adulthood through their education and career journey. We inspire them with exhibitions and digital content, like our award-winning podcast, all the way through to their PhD.

As we celebrate the achievements of the past year, we look forward to the opportunities and challenges that lie ahead. We extend our thanks to our CEO, Professor Ed Hill, who has announced his retirement from NOC in 2024. His impact and contribution at NOC has been immeasurable, on behalf of everyone at NOC I would like to thank Ed for everything he has done for us. I will be working with our Trustees to find a suitable successor and we are confident NOC will continue to go from strength to strength. Our vision for the future is one of continued excellence, impact, and leadership in ocean science and we invite you to explore this report to learn more about our journey.

SIR JEREMY DARROCH
CHAIR OF BOARD OF TRUSTEES
13 DECEMBER 2023

The Discovery Collections on display at the Worlds Beneath the Waves exhibition at The National Museum of the Royal Navy

REPORT OF THE CHIEF EXECUTIVE

As we release the NOC's 2022/23 Annual Report, I am honoured to reflect on a year marked by significant strides in ocean research and technological innovation. At the forefront of discovery, NOC has been diligently working to deepen our understanding of our one ocean, address critical environmental challenges, and provide insights into the ever-evolving realm beneath the waves.

As we move forward, the challenges facing our ocean are more complex and pressing than ever. Climate change, plastic pollution, and biodiversity loss continue to threaten marine ecosystems. However, we are steadfast in our determination to understand and tackle these challenges at a local and global level. We're part of a global community of ocean experts influencing policies, prioritising science in decisions, and advocating for the ocean. COP28 is a chance to champion the ocean and the entire planet. We will be focusing on science's role in shaping solution-focused actions and fostering collaboration through spaces like the Ocean Pavilion. We continue to call for a future which involves continuous monitoring, understanding carbon absorption trends, and safeguarding against rising sea levels and disasters.

I hope you enjoy the fascinating discoveries we made this year. Our comprehensive inventory of creatures from the Clarion-Clipperton Zone (CCZ) provides essential insights for assessing potential environmental impacts from future mining activities. Additionally, we made a significant breakthrough by revealing that approximately half of the world's ocean has witnessed shifts in their plankton communities over the past two decades due to climate change. Moreover, we achieved a remarkable milestone in oceanography with 24.9% of the seabed now successfully mapped.

Leading NOC for almost twenty years has been a tremendous privilege, and I am confident that the time is right for me to pass the baton to someone with a fresh perspective. I will continue to actively lead and represent NOC until a successor is found. My gratitude goes to our dedicated teams, partners, and stakeholders, whose efforts are showcased in every story within this Annual Report. Together, we've driven ocean science forward, contributing to a sustainable future for our blue planet. I look forward to witnessing the continued success of NOC under new leadership.

PROFESSOR ED HILL CBE
CHIEF EXECUTIVE
13 DECEMBER 2023

PURPOSE AND PROGRESS

OUR PURPOSE

To gain deeper knowledge of the ocean to help every living thing on our planet flourish.

CHARITABLE OBJECTIVES

NOCs charitable objects, which were developed to benefit the public and the world in which we live together, are as follows:

THE ADVANCEMENT OF SCIENCE in particular, enhancing the scientific knowledge and understanding of oceanographic sciences, and the ocean and its interaction with the earth system, and facilitating the use and application of that knowledge and understanding, particularly by:

a. Undertaking and causing to be undertaken research including through technology development, experimentation, analysis, long term ocean observation, monitoring, mapping, survey and modelling of a high international standard and disseminating the useful results of research.

b. Providing access to scientific research and technology development facilities and infrastructure including research ships and other measurement platforms and systems to the ocean science community.

c. Obtaining, managing, curating and providing access to digital data, samples and other specimens.

d. Being the UK national focus for ocean science, exercising leadership for and promoting co-operation with the wider UK science community, and providing national and international visibility and expert representation for oceanographic sciences.

e. Innovation or by encouraging and supporting innovation.

THE ADVANCEMENT OF EDUCATION IN OCEANOGRAPHIC SCIENCES and the ocean and its interaction with the earth system and relationship with people, particularly by:

a. Contributing to the education (particularly post graduate higher education), training and development of the next generation of scientists, engineers, technologists including the supervision of postgraduate research students.

b. Supporting the building of marine research scientific and technical capacity in other countries around the world.

c. Communicating with and engaging with the public in relation to ocean science and technology through seminars, talks, leaflets, papers and other means.

OUR BENEFICIARIES We exist to make a difference, so our beneficiaries are at the forefront of all we do. They include:

- **THE PUBLIC ALL OVER THE WORLD** - inspiring, informing and educating.
- **MARINE LIFE AND ECOSYSTEMS** - protecting our world so it works in harmony.
- **SCIENTISTS, ENGINEERS AND RESEARCHERS** - nationally, internationally and in developing countries.
- **YOUNG PEOPLE AND STUDENTS** - encouraging study, research and careers in oceanography.
- **GOVERNMENT** - informing decision making through robust evidence.
- **OFFSHORE OPERATORS** - ensuring those who use the ocean do so in a safe and sustainable way.
- **NOC TEAMS** - making sure our people have a career that inspires and motivates them.

OUR VALUES

RRS *Discovery* circumnavigating the largest floating iceberg on the planet, A76A

PUBLIC BENEFIT STATEMENT

In setting the vision and mission for the NOC, the Trustees gave due consideration to the guidance on public benefit, as outlined by the Charity Commission of England and Wales and the Scottish Charity Regulator OSCR.

NOC's key driver for selecting topics for research is always what will take ocean science forward for the furtherance of our charitable purpose, our touch stone in all endeavours is increasing knowledge to deliver public benefit.

To enable the organisation and individuals to exercise independent discretion in this decision making we have established an Activity Decision Tree. Its general principles are applied when deciding whether activity is routed through the National Oceanography Centre (NOC) or the trading subsidiary: National Oceanography Centre Innovations Limited (NOC Innovations Ltd). This includes examination of ethical considerations, reputational risks, organisation and scientific independence of NOC, where the benefit is accrued and risk and mitigations thereof.

Where contract research is undertaken by NOC we do so in line with the Commission's guidance on Research by Higher Education Institutions, and ensure it is funded at full economic cost, often by matching funding across the portfolio. NOC retains scientific control of any IP licensed so that it can continue to advance science and technology for the benefit of the public.

NOC and our trading subsidiary, NOC Innovations, bring benefits in a number of ways, including through scientific research, marine technology, education, information and advice.

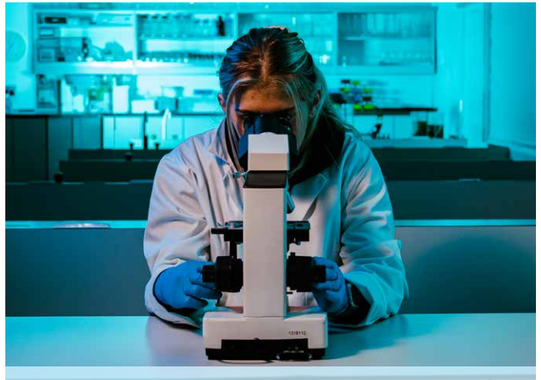
Through our work, we aim to:

- **SUPPORT SUSTAINABLE DEVELOPMENT PROTECTING THE OCEAN'S FUTURE HEALTH;**

- **PROTECT PEOPLE & ECONOMIC INFRASTRUCTURE FROM MARINE-RELATED DISASTERS;**

- **MAKE SENSE OF GLOBAL ENVIRONMENTAL CHANGES IN WHICH THE OCEAN IS DEEPLY IMPLICATED;**

- **ADDRESS ISSUES OF NATIONAL IMPORTANCE REQUIRING INTER-DISCIPLINARY SCIENCE.**



- **EDUCATE HUMANKIND TO UNDERSTAND SCIENTIFIC EVIDENCE ABOUT THE OCEAN'S ROLE IN OUR LIVES;**

UNDERPINNED BY SUSTAINABILITY & SOCIAL RESPONSIBILITY

IN THE MEDIA SPOTLIGHT

OCEAN COLOUR SCENE

New research, led by NOC scientists, unveiled a striking revelation about the Ocean: its colour is changing, and climate change is the cause.

Plankton communities, consisting of tiny organisms carried by tides and currents, play a pivotal role in this transformation. These communities include phytoplankton, minuscule plants, and zooplankton, diminutive animals.

Earth observation visualisation created using data from the US Geological Survey and LANCE/EOSDIS Rapid Response

© Joshua Stevens, NASA

"The satellite data we studied reveal a change in the colour of a massive portion of the ocean, representing an area larger than all the land on Earth.

The computer simulations we studied suggested that these colour changes may be due to climate change.

The hope is that this paper will inspire additional work into the causes and effects of these changes."

Dr B. B. Cael, NOC Principal Scientist and Lead Author

258
PIECES OF MEDIA COVERAGE

9,539,073
TOTAL AUDIENCE REACH

2,613
ALTMETRIC ATTENTION SCORE

In a significant breakthrough, scientists from the UK and USA have shown that approximately half of the world's ocean has witnessed shifts in their plankton communities over the past two decades due to climate change. This finding overturns previous scientific consensus, which held that a thirty year span of satellite data would be necessary to detect a climate change-related alteration in ocean colour, particularly chlorophyll levels.

Using NASA's Moderate Resolution Imaging Spectroradiometer (MODIS) aboard the Aqua satellite, researchers analysed ocean colour measurements, including the blue-to-green ratio, often used to estimate chlorophyll levels. What makes this revelation even more ground-breaking is that it significantly reduces the time needed to gather crucial satellite-based data, as twenty years of observations are now sufficient to detect climate change-induced shifts in ocean colour.

This achievement marks a significant milestone, as it means that such monitoring can occur within the lifespan of a single satellite, which might not endure the full thirty years typically assumed for climate observations. Consequently, it's expected to stimulate further research involving multiple satellite missions to construct more comprehensive and long-term data records.

This ground-breaking study represents the most extensive detection of climate change's impact on ecosystems, covering over 56% of the Earth's surface, the entire ocean. While the exact consequences of this transformation on the ocean remain uncertain, scientists speculate that climate change could drive a shift toward smaller plankton dominance within ecosystems.

This transition to smaller plankton could raise concerns for the future, potentially limiting the ocean's capacity to store carbon. According to the Intergovernmental Panel on Climate Change (IPCC), plankton could account for 5% to 17% of new carbon intake into the ocean by 2100. Smaller plankton have a reduced capacity to store this carbon, potentially diminishing its overall effectiveness in mitigating climate change. This research underscores the need for continued vigilance and research to understand and address the evolving impact of climate change on our ocean.

Earth observation visualisation created using data from the US Geological Survey and LANCE/EOSDIS Rapid Response
© Joshua Stevens, NASA

BALANCING OCEAN PROSPERITY AND HEALTH

SUPPORT SUSTAINABLE DEVELOPMENT PROTECTING THE OCEAN'S FUTURE HEALTH

In a world where the ocean holds the key to both economic prosperity and environmental stability, NOC stands as a dedicated steward, working to strike this vital balance. From fisheries to shipping, renewable energy to tourism, the economic potential of marine-based industries is vast. However, this potential comes with a profound responsibility.

Our goal is to facilitate the sustainable development of these industries while safeguarding the very ecosystems that underpin their existence. We use evidence and experience to empower decision-makers, industries, and communities to make informed choices that propel marine-based economies forward without compromising the future health of our ocean.

UNVEILING THE CCZ'S HIDDEN BIODIVERSITY

World renown researchers from NOC and the Natural History Museum published a comprehensive inventory of the Clarion-Clipperton Zone's (CCZ) biodiversity, vital for assessing environmental impacts from potential mining. The CCZ, spanning six million km² between Hawaii and Mexico, is under scrutiny with 17 mineral exploration contracts covering 1.2 million km².

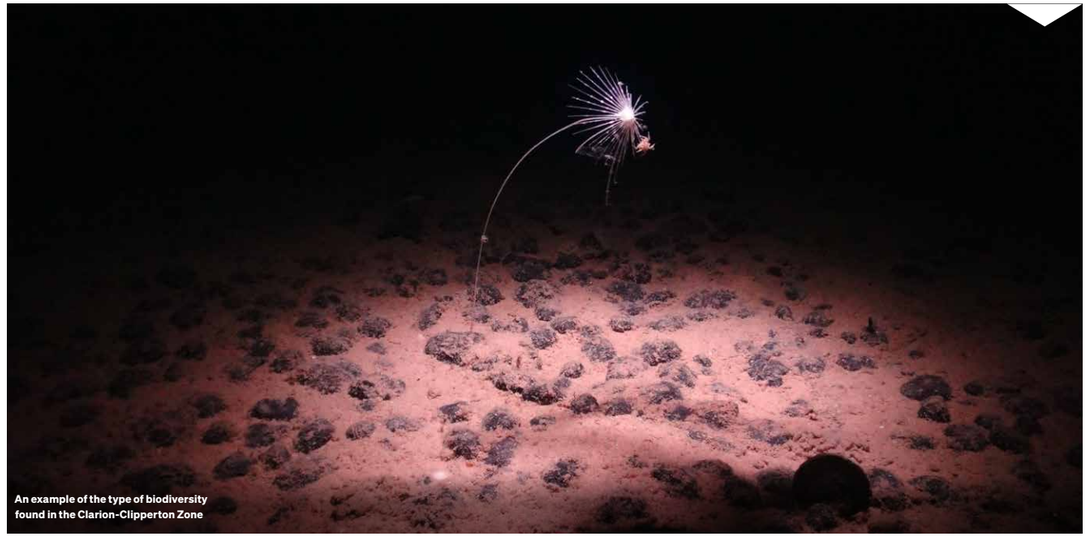
Dr Tammy Horton, NOC Research Scientist and Co-author, explained:

"We have been studying the biodiversity of the CCZ in collaboration with the Natural History Museum team for many years, and this study represents a major advance in our knowledge of the biodiversity of the region."

Dr Daniel Jones, NOC Principal Scientist and Co-author, highlighted:

"With deep-sea mining being considered in the area, it is incredibly important that the unique and biodiverse deep-sea animals of this area are better documented. The records of these animals come primarily from deep-sea research expeditions, such as our recent SMARTEX expedition to the CCZ. In these rare opportunities to visit the remote CCZ we catch a glimpse of the diversity of life in this vast environment, for example using robotic submarines to photograph, study and collect some of the fascinating animals."

The team documented 185 species, with only six, like sea cucumbers, found elsewhere. The increase in data is due in part to the International Seabed Authority (ISA) requiring companies to collect and share environmental data for potential mining. This checklist supports the UN Ocean Decade **LEARN MORE: DECADE OF OCEAN SCIENCE - PAGE 56**, aiming to create field guides for CCZ wildlife.



An example of the type of biodiversity found in the Clarion-Clipperton Zone

Seaweed farming in Bali, Indonesia

A moored data buoy being cleaned ready for redeployment

OCEAN-DRIVEN CLIMATE SOLUTIONS

Our researchers are actively working to combat climate change through innovative solutions centred around our ocean and are geared towards providing vital information for policymakers to make evidence-based decisions.

We focus on cutting-edge monitoring tech to assess the impact of strategies, especially in offshore Carbon Capture and Storage (CCS). Our chemical monitoring, like "lab-on-chip" sensors, allow us to detect and quantify changes in seawater caused by CO_2 release, crucial for ensuring the integrity and compliance of CCS systems **LEARN MORE: LEADING CCS INNOVATIONS FOR CLIMATE MITIGATION - PAGE 54**. We also pioneer "blue carbon" and ocean-based CO_2 removal solutions, engaging in projects like SEAO_2-CDR and ReSOW UK.

These multidisciplinary initiatives reflect our commitment to addressing climate change by driving forward sustainable and environmentally friendly solutions. Together, we're working towards a climate-resilient future.

MEASURING THE ATLANTIC

The Rapid Atlantic Meridional Overturning Circulation (Rapid-AMOC) observing system at 26 degrees north in the Atlantic has provided many new insights into ocean circulation and climate since it's conception almost twenty years ago.

The NOC operated array of sensors and moorings measuring the AMOC have been serviced and improved by our teams every year since.

Continued observations from Rapid are so essential as the AMOC and its impacts are expected to continue to vary significantly and potentially decline on decadal time scales. This has been shown in Rapid-AMOC observations since 2004, and in the Intergovernmental Panel on Climate Change projections. A decline in the AMOC would contribute to extreme weather and climate decline in North America and Europe. This year we received further UK government funding from NERC (Natural Environment Research Council) to continue our work on Rapid-AMOC until 2026.

NO STOP FOR AMOC

OSNAP (Overturning in the Subpolar North Atlantic Program) is a transatlantic observing system, led by NOC, comprising sensors, moorings, and gliders, positioned north of Rapid-AMOC. Using data from OSNAP we discovered that the AMOC is not showing a detectable decline as previous studies from other scientists have suggested.

The study showed that the area between Greenland and Scotland has clear importance for climate projections, and that processes happening in centre of the Subpolar Gyre are critical, rather than in the surrounding currents as previously thought. For the first time, we've shown the relationship between the temperature and salinity of water inside the gyre and the strength of large ocean currents.

Professor Penny Holliday , NOC Associate Director, National Capability Science and OSNAP Principal Investigator, explained:

"There is no reason to assume that we are close to an overall shut down of the AMOC. While there is suggestive evidence for a slow-down in recent decades, there is no indication of its relevance over longer time-scales. We are confident that this discovery will provide a more accurate timeline of climate projections, as well as improve seasonal weather forecasts."

This will allow coast and city planners to enhance preparedness for extreme events, reducing risks and promoting resource-efficient practices for human health, safety, and prosperity. UK OSNAP is underpinned by National Capability funds from the Natural Environment Research Council (NERC).

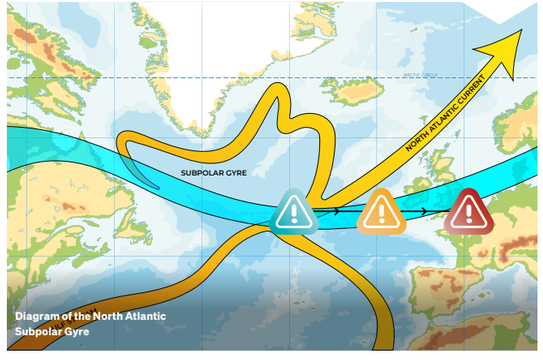


Diagram of the North Atlantic Subpolar Gyre

OCEAN RACE FINDS MICROPLASTICS

Findings from The Ocean Race Science Initiative have revealed alarming levels of microplastics in ocean waters. The analysis of 40 samples collected during the annual boat race, covering coastal regions to remote ocean zones, has detected microplastics in every sample, with some locations containing as many as 1,884 microplastics per cubic meter of water.

Race teams used a special filter system on-board to collect plastic particles, which were then analysed in our specialist laboratory by our microplastic experts with support from the University of Rhode Island. The findings highlighted that microplastics are pervasive, even in the most remote ocean regions, underscoring the urgent need to address plastic pollution.

Microplastic concentrations were highest near urban areas, such as Cabo Verde and South Africa, as well as in known "garbage patch" areas where ocean currents accumulate particles. Moreover, the study examines the chemical structure of plastic particles to understand which plastic products enter the ocean and break down into microplastics. The most common chemical found is polyethylene, used in various products, including single-use packaging and containers.

These results, which show significantly higher microplastic levels compared to the previous edition of The Ocean Race, provide critical data for understanding and addressing the plastic pollution crisis. This feeds into the Ocean Decade Odyssey project, endorsed by the Ocean Decade **LEARN MORE: DECADE OF OCEAN SCIENCE - PAGE 56**.

Scientists Katsiaryna Pabortsava & Victoria Fulfer analysing microplastic samples

© Cherie Bridges, The Ocean Race

Restoring the lost UK seagrass meadows is vital to combat climate change

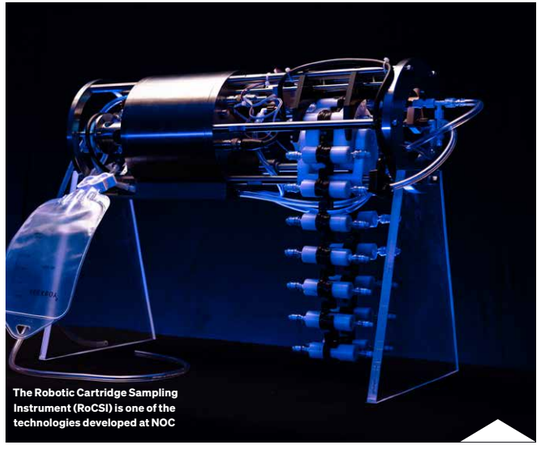
RESEARCH RESTORES SEAGRASS MEADOWS

Seagrass meadows are the powerhouses of coastal seas, providing a nature-based solution to climate change. They have been neglected for decades, which has led to their large-scale degradation and loss. In fact, they are some of the most threatened and degraded habitats on Earth and it is estimated that we have lost as much as 90% of UK seagrass beds over the last century.

We lead vital research into seagrass beds across the UK to determine the rate at which they capture and store carbon, as well as their contribution to supporting fisheries and coastal protection. The more we understand this, the more we can maximise their positive impacts and preserve biodiversity.

Beyondly's generous donation of £25,000 to NOC's Blue Carbon Fund is supporting the carbon coring and analysis of a key coastal site in Porthdinllaen Bay, on the northern Welsh coast. The site is a Special Area of Conservation (SAC) which is known for the presence of both seagrass and macro-algae.

The philanthropic partnership gives our researchers the opportunity to restore the seagrass meadows as part of our effort to combat climate change and prioritise ocean health through scientific evidence and information.



The Robotic Cartridge Sampling Instrument (RoCSI) is one of the technologies developed at NOC

SCALING UP TECHNOLOGY TRANSFER

The NOC Innovations team supports and advances marine innovation for the benefit of science and society by researching challenges such as blue carbon, Carbon Capture, and Storage, reaching Net Zero and energy transition.

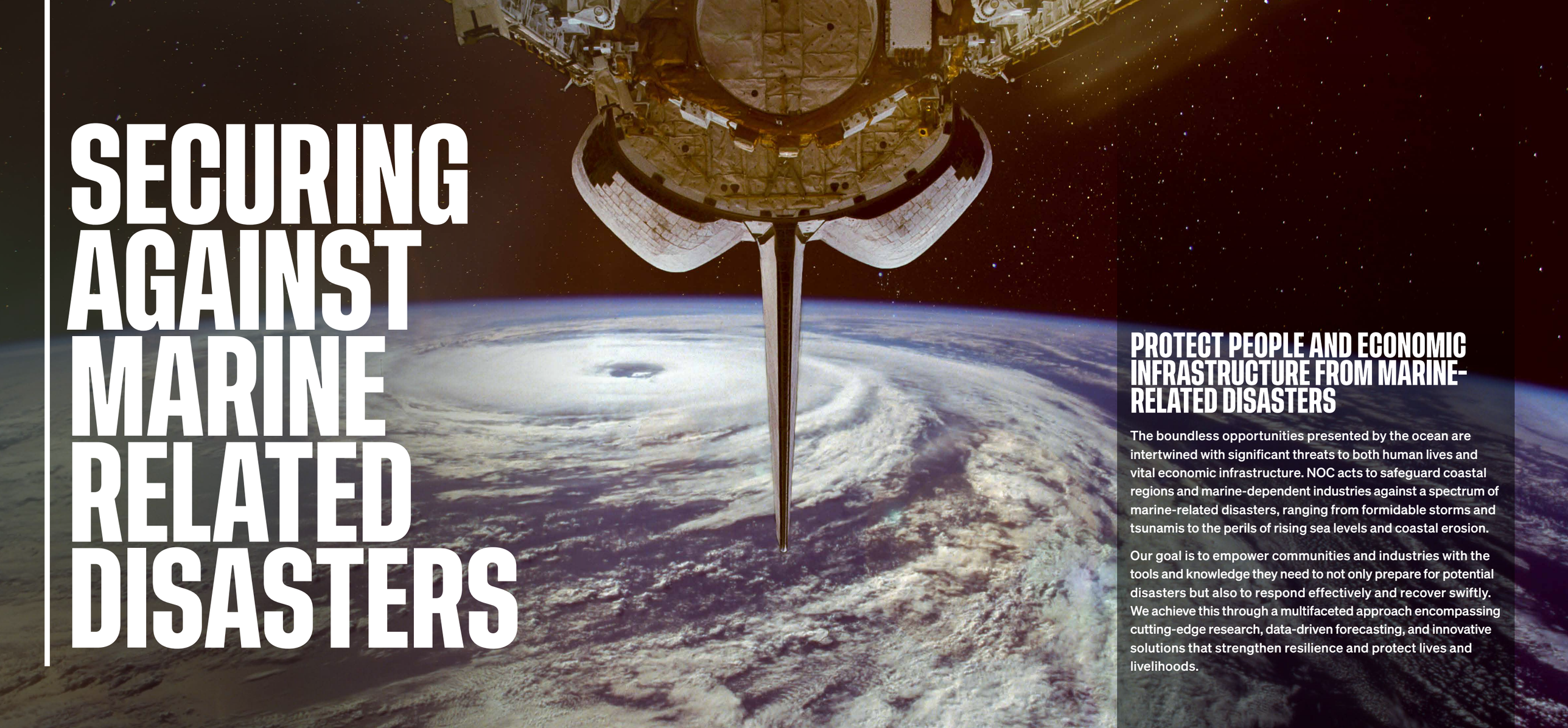
The team signed a five year agreement with Ploughshare to provide technology transfer services. They have increased the capability and capacity to discover, liberate, and scale our intellectual property into multiple industries, by helping us create licensing and spin-off products based on both novel and existing technology.

Huw Gullick, Managing Director at NOC Innovations, said:

"We have a long history of developing pioneering intellectual property and making scientific and engineering discoveries, and we always want to achieve impact from what we do.

Ploughshare has a demonstrated track record in helping to take intellectual property and discoveries to the world through models such as licensing and investment, and this is an excellent opportunity for us to scale up our science and research to the wider science community and general society."

SECURING AGAINST MARINE RELATED DISASTERS



PROTECT PEOPLE AND ECONOMIC INFRASTRUCTURE FROM MARINE-RELATED DISASTERS

The boundless opportunities presented by the ocean are intertwined with significant threats to both human lives and vital economic infrastructure. NOC acts to safeguard coastal regions and marine-dependent industries against a spectrum of marine-related disasters, ranging from formidable storms and tsunamis to the perils of rising sea levels and coastal erosion.

Our goal is to empower communities and industries with the tools and knowledge they need to not only prepare for potential disasters but also to respond effectively and recover swiftly. We achieve this through a multifaceted approach encompassing cutting-edge research, data-driven forecasting, and innovative solutions that strengthen resilience and protect lives and livelihoods.

The Hunga Volcano eruption the day before the main explosions took place

© Taniela Kula, Tonga Geological Services

FASTEST FLOWS

The eruption of the submerged Hunga Volcano in January 2022 triggered fatal tsunamis and pressure waves that travelled around the planet.

Our latest collaborative research shows that the sudden delivery of huge volumes of hot volcanic rocks, ash and gas into the ocean created avalanche-like flows, which travelled at speeds of up to 122km/hr causing extensive damage to the two sea-floor cables.

Subsea cables underpin our daily lives, carrying more than 99% of all digital data traffic worldwide, including the internet. When Tonga's only international cable was abruptly severed, the whole nation was disconnected from the rest of the world in the midst of a volcanic crisis.

Dr Isobel Yeo, NOC Volcanologist and Co-lead Author, said:

"A huge number of the world's volcanoes lie under the ocean, yet only a handful of those are monitored. As a result, the risk posed to coastal communities and critical infrastructure remains poorly understood, and more monitoring is urgently needed."

Just a few months after the eruption sea-floor sampling and surveys were collected by the research vessel RV Tangaroa, owned by New Zealand's National Institute of Water and Atmospheric Research (NIWA), revealing key evidence showing that the cable damage was caused by powerful and dense currents.

Dr Mike Clare, NOC Principal Researcher and Co-lead Author, added:

"The extremely fast flow speeds were caused by collapses of the eruption plume, which was up to 57km high. It then fell directly into the ocean onto very steep underwater slopes. Their initial speed was so fast, that these underwater flows were capable of running several hundred metres up-slope and for at least one hundred kilometres across the sea-floor. Their remarkable power explains the widespread damage to the sea-floor cables."

Richard Wysoczanski, NIWA Principal Scientist for Marine Geology and Co-author, concluded:

"Thanks to generous funding from the Nippon Foundation and incredible international collaboration, we now have this vital research that is relevant to anyone around the world who lives within proximity of underwater volcanoes, including countries around the Pacific Ring of Fire. We are armed with knowledge that will help keep communities informed and protected in the future."

A rainbow forming in a storm off the coast of Lundy, in the Bristol Channel

WARMING SEAS AND CHANGING STORMS

Our world-renowned scientists have made a significant contribution to the latest report from the UK Marine Climate Change Impacts Partnership (MCCIP), shedding light on the profound impact of climate change on the UK's seas and coastlines.

The report revealed evidence of the warming trend in sea surface temperatures around the UK, with a notable increase of approximately 0.3°C per decade over the past forty years. Projections indicate that UK seas are on course to warm by over 3°C by the year 2100, aligning with anticipated human-induced warming trends. Furthermore, the report highlights a concerning rise in the frequency of marine heat wave anomalies. Between 2000 and 2016, the average number of such anomalies increased by four per year, surging to as many as six annually in the northern UK regions **LEARN MORE: HEATWAVE SUMMER - PAGE 25**.

Delving into storm and wave patterns, the report underscores how climate change has altered the Atlantic storm track. While UK waves are becoming calmer on average, the most extreme storms and associated waves are becoming more intense and more frequent. This comprehensive research not only equips policymakers with the latest data to inform protective measures for economic resources and vulnerable populations but also guides the scientific community in identifying critical research priorities.

A new tide gauge installed on the remote Ascension Island, South Atlantic Ocean

ASCENSION ISLAND'S INNOVATIVE TIDE GAUGE

We are at the forefront of sea-level science, enabling data collection and sharing through satellites, ocean robots, and a global network of tide-gauge monitoring systems. Collaborating closely with local scientists and organisations, we support national and international efforts, including capacity development initiatives in small island nations.

Recently, our engineers designed, constructed, and installed an advanced tide gauge on Ascension Island as part of the Climate Linked Atlantic Sector Science (CLASS) project. Located in the heart of the Atlantic Ocean, this device now provides invaluable data on sea-level changes in a region historically lacking in observations.

The near-real-time sea-level data delivered by the innovative tide gauge meets the stringent standards of the Global Sea Level Observing System (GLOSS), particularly for tsunami monitoring.

This tide gauge represents a vital addition to the South Atlantic Tide Gauge Network, established in 1985 under the ACCLAIM program. It transmits one-minute averaged sea-level data every six minutes to the Intergovernmental Oceanographic Commission of UNESCO's (IOC/UNESCO) Sea Level Station Monitoring Facility. This installation not only enhances our comprehension of sea-level fluctuations but also contributes significantly to monitoring coastal hazards.

MADAGASCAR'S NEW SEA-LEVEL MONITORING SOLUTION

In collaboration with local and international partners, we have conceptualised a new sea-level monitoring system for Madagascar using low-cost relocatable tide gauges known as Portagauges. Currently, Madagascar lacks reliable tidal predictions and national sea-level monitoring due to the absence of functioning tide gauges.

Installing and maintaining numerous gauges along its extensive coastline is financially impractical and challenging for long-term upkeep. However, tidal information is vital for safety, infrastructure, and commerce, especially considering the potential impact of long-term sea-level rise on short-term hazards. Developed by engineers and scientists at NOC, the Portagauge is a portable tide gauge that allows easy and rapid deployment. The Portagauge monitors relative and absolute sea levels and land motion relative to geoid and local datums.

This year we've successfully demonstrated the concept's feasibility by deploying a Portagauge in Toamasina, Madagascar. Working closely with local stakeholders, we're currently developing a roadmap for deploying Portagauges at various locations along Madagascar's coast. This effort serves as a model for other coastal nations and island states facing similar challenges.

The Portagauge and Satellite Sea Level Monitoring System for the Southwest Indian Ocean (PASS-PWIO) project is funded by the European Space Agency.

MANGROVE TREES AS COASTAL DEFENDERS

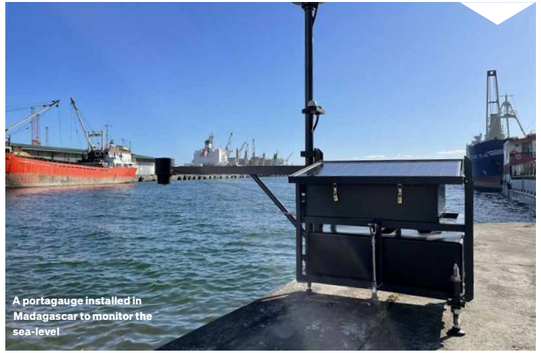
We made an exciting breakthrough discovery that could lead to significantly improved coastal defences using mangrove trees. Mangroves, which thrive in coastal salt-water, have proven effective in lowering water levels during extreme events like heavy storms and typhoons.

The research, conducted across the Pearl River Delta in the South China Sea, emphasises the vulnerability of rapidly growing Chinese mega-cities like Hong Kong, Shenzhen, and Guangzhou to flooding. While mangroves offer natural protection, this study reveals that combining mangroves with traditional flood defences like seawalls and levees can yield even better results. However, it also underscores the importance of location-specific numerical simulations for the optimal design of mangrove-based defences.

The NOC-led study, the first of its kind, fills a critical knowledge gap in understanding the factors controlling how coastal vegetation mitigates extreme water levels. It underscores the potential for nature-based coastal defences in delta areas housing large cities. Mangroves emerge as an effective tool for safeguarding coastal communities, not only reducing flooding but also offering benefits such as carbon storage, biodiversity, and erosion prevention.

Dr Michela De Dominicis, NOC Senior Scientist and Lead Author, said:

"Mangrove forests are one of the most powerful natural tools we have to protect coastal communities from rising sea levels and severe storms."



A portagauge installed in Madagascar to monitor the sea-level

Mangrove trees could significantly improve coastal defences

© David Clode

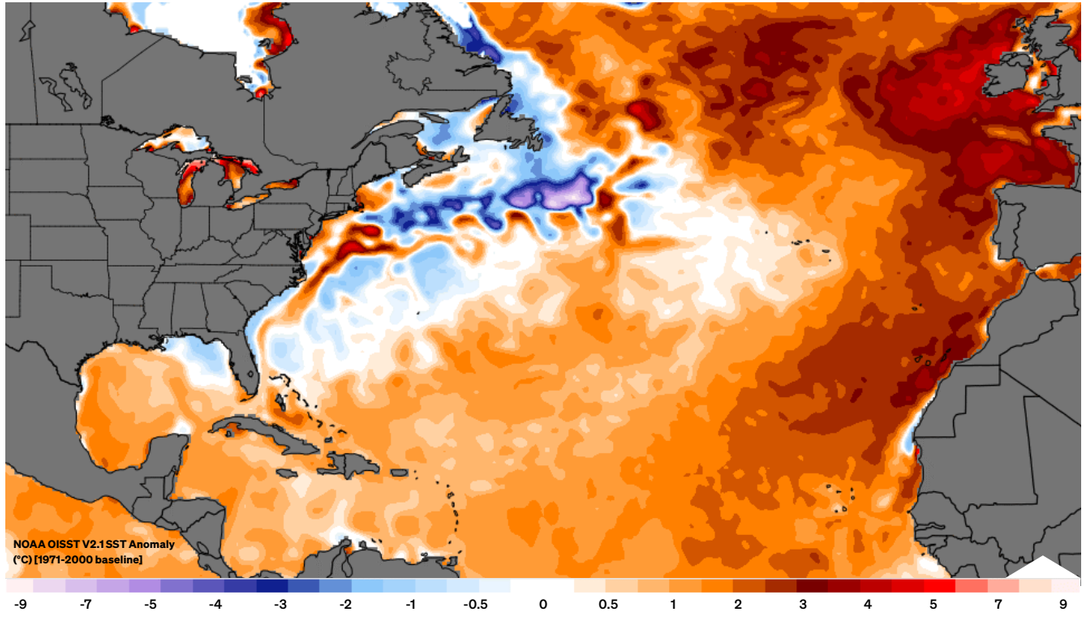
NAVIGATING THE WORLD'S LARGEST ICEBERG

When returning from an expedition in South Georgia, our crew of the global-class Royal Research Ship (RRS) *Discovery* were asked to reroute and circumnavigate the largest floating iceberg on the planet – twice the size of Greater London.

At 135km long and 25km wide, A76A was thought to pose a significant threat to the local wildlife around South Georgia and the nearby Shag Rocks. Scientists on board from the British Antarctic Survey, were able to use the ship's world-class equipment to take critical samples of the water around the iceberg.

This collaboration and dynamic response to unfolding opportunities enabled 'chance-of-a-lifetime' measurements and observations to be gathered. The RRS *Discovery*, managed and operated by the NOC, is only one of a handful of ships able to navigate and operate in these latitudes **LEARN MORE ABOUT THE RRS *DISCOVERY* AND RRS *JAMES COOK*: SHIPS FOR GLOBAL SCIENCE - PAGE 44**.

The iceberg stretching into the distance as seen from RRS *Discovery*



HEATWAVE SUMMER

Record-breaking high sea surface temperatures are increasing globally. June's marine heatwave anomaly was tracked at the open-ocean Porcupine Abyssal Plain Sustained Observatory (PAP-SO), located in the northeast Atlantic Ocean. This is currently the only long-term time series site in the world that monitors the ocean from the surface to the abyssal seabed, and it has been operational for more than thirty years. It's operated by NOC, in collaboration with the Met Office, but shares data freely with the global science and data community.

June's sea surface temperature soared to 16.52°C, marking a significant deviation of more than 1.66°C from the mean recorded between 1982 and 2011 (14.86°C) based on Met Office data from the HadISST dataset. This rapid warming commenced approximately six weeks earlier than the typical onset for this time of the year.

Climate change profoundly affects global ecosystems, impacting upper ocean biogeochemistry, plankton, and seabed organisms. Rising sea surface temperatures influence atmospheric circulation, affecting European weather. Globally, ocean temperature changes impact circulation, carbon sequestration, and the distribution of heat and nutrients in the ocean.

These developments emphasise the complex and interconnected nature of climate change's far-reaching consequences, and the importance of internationally significant facilities such as PAP-SO.

HELPING NAVIGATE GLOBAL ENVIRONMENTAL CHANGES

MAKE SENSE OF GLOBAL ENVIRONMENTAL CHANGES IN WHICH THE OCEAN IS DEEPLY IMPLICATED

In an era defined by rapid environmental transformation, NOC is dedicated to unravelling the intricate connections between the ocean and global environmental changes. We recognise that the ocean is both a barometer and a driver of environmental change, influencing climate patterns, sea-level rise, and ecosystem dynamics.

Our goal is to bring clarity to the complexity of these relationships. Through our research and insights, we arm policymakers, scientists, and communities with the knowledge required for informed decision-making, guiding us collectively towards a more sustainable and resilient future in harmony with the natural world.

A NEW LINE IN THE SAND

We unveiled a fascinating discovery at the bottom of the North Pacific Ocean: an underwater boundary reminiscent of the famous 'Wallace Line,' which was first identified in 1859 and separates the distinct life forms of Asia and Oceania. This newly found boundary exists on the ocean floor, specifically across the vast Clarion-Clipperton Zone (CCZ), an abyssal plain stretching for 5,000 kilometres between Mexico and Kiribati.

The CCZ, located at depths ranging from 3,500 to 6,000 meters, is currently a focal point for deep-sea mining activities. This study not only identified this biogeographical boundary but also revealed a surprising phenomenon: increased biodiversity with increasing depth. This challenges the conventional belief in deep-sea ecology that harsher conditions in deeper ocean regions limit biodiversity.

The NOC-led study posits that water chemistry, specifically calcium carbonate ($CaCO_3$) saturation (the mineral responsible for forming the shells and skeletons of many marine animals) might be an overlooked factor in delineating this boundary. It could also play a pivotal role in shaping biodiversity across this expansive region.

Dr Erik Simon-Lledó, NOC Deep-sea Ecologist and Lead Author, explained:

"Muddy abyssal seafloors were initially considered to be almost 'marine deserts'. But as deep exploration and technology progressed, these ecosystems keep unveiling a large biodiversity, comparable to that in shallow water ecosystems, only found on a much wider spatial spread."

Dr Adrian Glover, Natural History Museum Principal Scientist and Co-author, emphasised the significance of these findings:

"These new data revolutionise our understanding of abyssal Pacific biogeography and will be vital to inform urgent policy decisions on potential deep-sea mining."

Dr Daniel Jones, NOC Principal Scientist and Co-author, said:

"The research findings are the result of a ten-year-long study in collaboration with more than thirteen world-leading deep-sea research institutions, universities, and industry bodies, and involved twenty one deep-sea researchers. It shows the value of international collaboration in uncovering unknown patterns across huge areas of the ocean."

The study also sheds light on the distinctions between shallower and deeper regions within the vast abyssal nodule field habitat—a region currently in the cross-hairs of mining operations. The findings provide a fresh foundation for crafting regional-scale management strategies to safeguard biodiversity in the Earth's largest biome, the deep ocean.

An example of the type of biodiversity found in the Clarion-Clipperton Zone

Autosub 5, the latest in a long line of AUV's developed by NOC

DECADES OF INNOVATION

To develop effective strategies for dealing with rising sea-levels, we must understand what lies ahead. The main uncertainty lies in the Antarctic Ice Sheet, where observed thinning raises concerns about irreversible changes, potentially contributing over a meter to sea levels in centuries to come.

Our Drivers of Oceanic Change in the Amundsen Sea (DeCAdeS) project is using innovative techniques and engineering to fill gaps in our understanding of Amundsen Sea ocean temperatures. The continuing evolution of NOC's pioneering Autosub Long Range (ALR), aka Boaty McBoatface will enable it to anchor beneath pack ice, annually measuring currents carrying warm water toward the ice.

These measurements along with data from fixed instruments and seal-borne sensors, will be related to satellite records of sea surface changes over three decades.

This year our engineers have conducted extensive testing in our state-of-the-art facilities and during missions in Loch Ness and Orkney. This research and development has been invaluable, fostering continuous learning, refinement, and ultimately leading to ground-breaking advancements explore and understand the ocean.

We're very confident that next year will see a successful trial of ALR securely anchored to the seabed, marking the first time such an operation has been carried out.

The ultimate goal is to have ALR stationed and anchored in the Pine Island Thwaites Trough for a year. In this remote location, ALR will be measuring the complex water flows beneath the Thwaites and Pine Island glaciers. Our findings will help the science community understand one of the remotest environments on the planet and ultimately contribute to addressing the challenges posed by rising sea levels.

GLIDERS REVOLUTIONISE CLIMATE DATA COLLECTION

We teamed up with the Met Office in a ground-breaking partnership, to complete the first continuous monitoring programme ever done using underwater robot gliders. These advanced gliders, provided and operated by NOC, collected crucial data on temperature and salinity west of the Orkney Islands along the Joint North Sea Information System (JONSIS) line (between 0°and 2.233°W at 59.28°N).

This information is integral to feed into the Met Office's software and computer models, creating an instant global database for scientists to use when forecasting weather and making predictions about climate change. During each project phase, several gliders were deployed, ensuring a continuous data stream.

In keeping with wider Net Zero commitments, the gliders were controlled remotely from NOC, eliminating the use of traditionally powered, large ships. This successful collaboration underscored the unwavering commitment of both institutions to cutting-edge scientific innovation and data, with a resolute focus on addressing the pressing societal challenges posed by climate change.

A Teledyne Slocum G3 Glider equipped with NOC sensors

ENHANCING NEAR-REAL-TIME OCEAN DATA SHARING

NOC's British Oceanographic Data Centre (BODC) collaborated with the Scottish Association for Marine Science (SAMS) to enhance the sharing of near-real-time ocean data with the broader scientific community. SAMS deploys two Seagliders annually as part of the Ellett Array, which continuously monitors critical ocean parameters along the European Shelf Edge Current.

BODC's innovative application has been introduced to facilitate the secure and authenticated retrieval of near-real-time Seaglider data. This enhances security protocols and streamlines the process of checking and transferring new data files to the BODC archive, making near-real-time data sharing more efficient.

This improved functionality has been instrumental in monitoring the recent marine heatwaves, providing invaluable modelling data for the UK Met Office and other operational entities. BODC plays a vital role in preserving and providing access to valuable ocean data for scientific research and environmental monitoring. BODC contribute significantly to advancing our understanding of marine systems and their impact on climate and ecosystems.

A Kongsberg Underwater Technology Seaglider being prepared for research

UNVEILING OCEAN INSIGHTS FROM SPACE

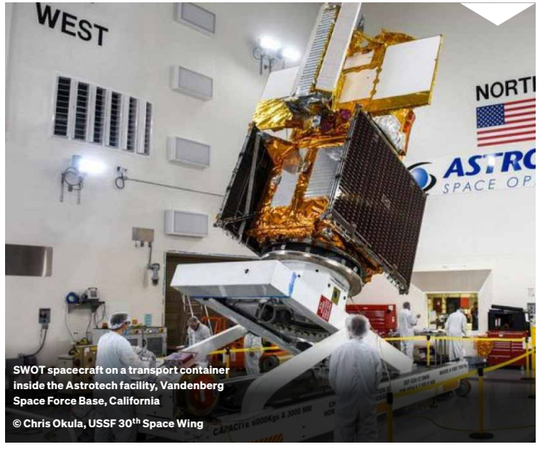
A ground-breaking UK-supported mission, the Surface Water and Ocean Topography (SWOT) satellite, has launched into space. This international endeavour is set to provide unparalleled insights into our world's ocean and surface water.

SWOT will comprehensively survey 90% of the Earth's surface, scrutinising changes in the ocean, lakes and rivers.. The data generated will enhance our understanding of climate change and improve our ability to predicate and mitigate global flood risks.

Partnering with the Natural Environment Research Council (NERC), the UK Space Agency has invested £375,000 in the SWOT-UK research project. UK scientists, including satellite and data specialists at NOC, are actively engaged in evaluating and leveraging SWOT data for areas characterised by high tidal ranges and swift currents.

Professor Christine Gommenginger, NOC Principal Investigator and SWOT-UK Co-leader, said:

"One objective of SWOT-UK specifically is to demonstrate how satellite Earth observation data can be used with in situ instruments and numerical models to answer important questions for science and society."



SWOT spacecraft on a transport container inside the Astrotech facility, Vandenberg Space Force Base, California

© Chris Okula, USSF 30th Space Wing

BRITISH OCEANOGRAPHIC DATA CENTRE (BODC): A STATISTICAL SNAPSHOT

For period 01 April 2022 to 31 March 2023.

195
DATA DEPOSITS RECEIVED

100%
OF CRUISE DATA ARCHIVED WITHIN 1 MONTH OF RECEIPT

8,120
ARGO PROFILES DELIVERED TO THE MET OFFICE IN REAL TIME

74.8%
OF ARGO PROFILES WERE DELAYED-MODE QUALITY CONTROL

76,820
DATASETS SETS DOWNLOADED OR DELIVERED ON REQUEST

87,976
BATHYMETRY SETS DOWNLOADED

195,793,967
GEBCO WEB MAP SERVICE CALLS

494
DATASETS WITH A DIGITAL OBJECT IDENTIFIER (DOI)

86,225
ACTIVE REGISTERED USERS

44,335
NERC VOCABULARY SERVER USER SESSIONS

7,224,497
CALLS TO THE NERC VOCABULARY SERVER

36%
OF DATASETS AVAILABLE WITHIN TWO CLICKS OF MEDIN PORTAL

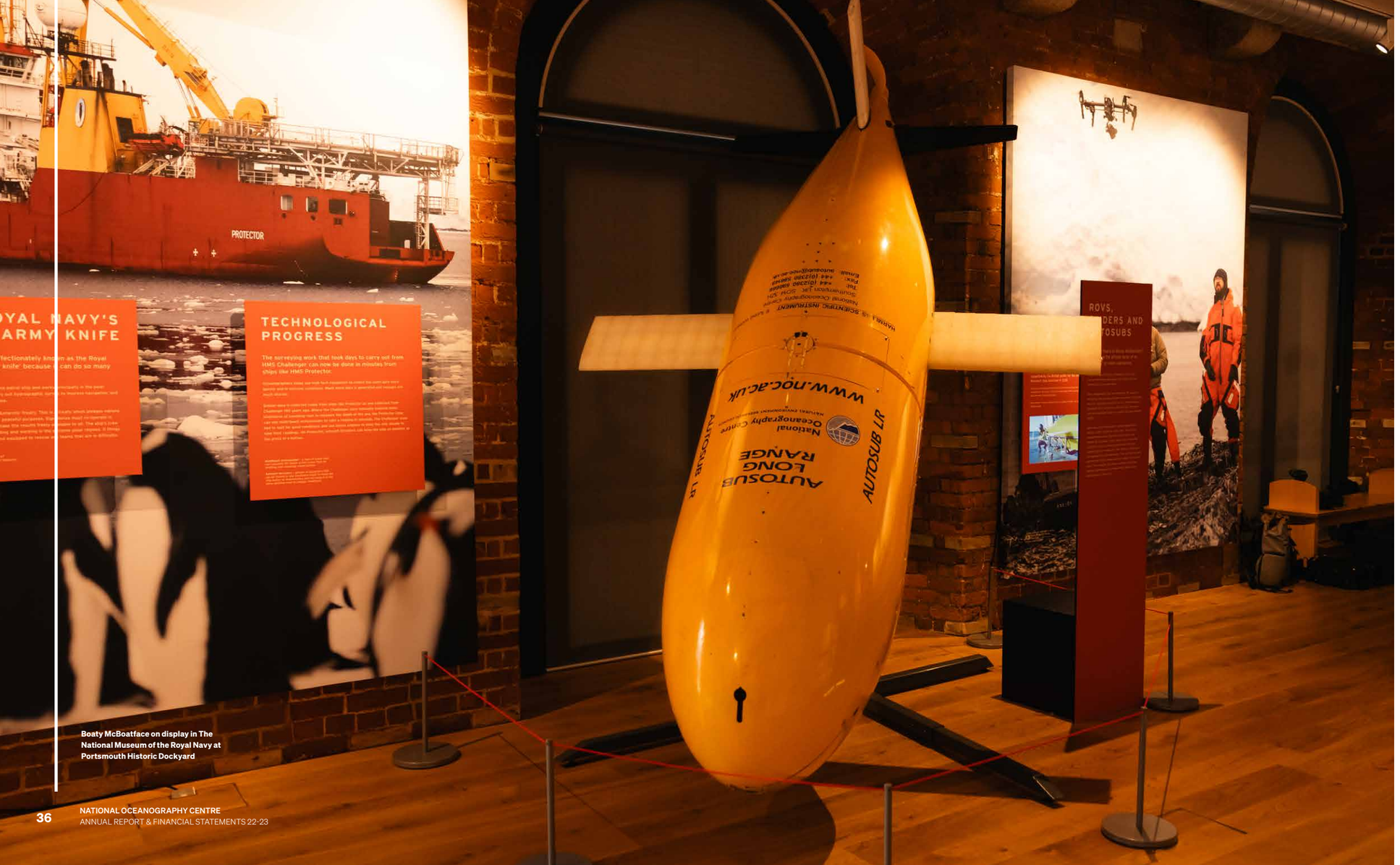
RAISING OCEAN AWARENESS AROUND THE WORLD

EDUCATE HUMANKIND ON THE OCEAN'S CRITICAL ROLE IN OUR LIVES THOUGH SCIENTIFIC EVIDENCE AND UNDERSTANDING

Our one Ocean is not merely a distant realm but an integral part of our daily lives, influencing weather patterns, regulating our climate and providing sustenance for billions.

As a premier research organisation, NOC provides scientific evidence to inform discussions, evoke wonder, and enhance awareness of the ocean's significance.

Our expert researchers, engineers and ambassadors engage with diverse stakeholders, ranging from local community groups and schools to national and international change makers, aiming to foster a deeper understanding of the ocean's profound impact on our world.



Boaty McBoatface on display in The National Museum of the Royal Navy at Portsmouth Historic Dockyard

SET YOUR SIGHTS ON BOATY MCBOATFACE

The extraordinary tale of HMS *Challenger's* expedition, the daring three-year scientific odyssey took place 150 years ago and forever changed our understanding of the Earth's ocean, is the fascinating and timely focus of a brand-new exhibition; *Worlds Beneath the Waves*, opening at The National Museum of the Royal Navy, Portsmouth Historic Dockyard.

The exhibition includes the chance to get up close and personal with NOC's scientifically significant assets such as Boaty McBoatface and specimens from The Discovery Collections.

With climate change and the state of the world's ocean dominating global headlines, *Worlds Beneath the Waves* traces the impact of Challenger's voyage and reveals how the UK is still at the forefront of scientific research centred on our ocean.

On the 21 December 1872, HMS Challenger set sail from Portsmouth on a scientific expedition to explore and survey our ocean. Their collective findings shattered long-held beliefs, challenging conventional wisdom and propelled marine science into a new era of enlightenment.

In partnership with NOC, the Royal Navy is still collecting data through the deployment of ships such as; HMS Protector; Autosubs, the most famous of which is Boaty McBoatface, underwater gliders and Remotely Operated Vehicles (ROVs).

Diana Davies, The National Museum of the Royal Navy's Head of Conservation, said:

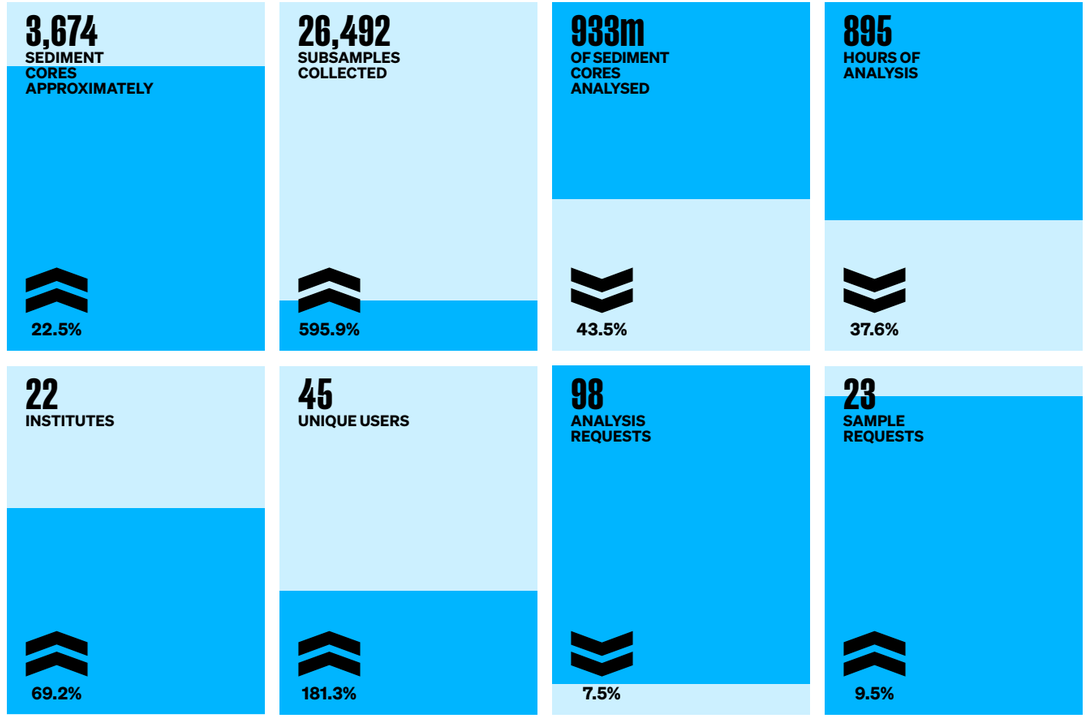
"It's never been more important to understand the role the ocean plays in the future of our planet, and we're so excited to welcome visitors to this new exhibition on a journey of discovery that takes you through the very beginnings of true oceanography, to the work of the modern navy and the findings of contemporary marine scientists at the forefront of their field."

Alice Kloker, NOC Stakeholder Engagement Manager, said:

"This inspiring exhibit is an excellent opportunity to raise awareness of the challenges our ocean faces, the knowledge needed inform solutions, and role emerging technologies play in delivering these answers."

BRITISH OCEAN SEDIMENT CORE RESEARCH FACILITY (BOSCORF): A STATISTICAL SNAPSHOT

Below is a visual comparison of this year's BOSCORF data compared to 2021/22*.



*for more information and to see the details of last year's performance, please read our Annual Report 2021/22

EQUIPPED FOR THE FUTURE

The upgrade of the Geotek Core Workstation (MSCL-XYZ) at our British Ocean Sediment Core Repository and Facility (BOSCORF) marks a leap in our capacity to deliver geochemical datasets derived from marine sediment samples.

One of the stand-out features of this upgraded workstation is its automated multi-core logging system. This innovation operates tirelessly around the clock, requiring minimal user intervention. This means that researchers can process large volumes of marine sediment samples efficiently, speeding up data collection.

It is fully shielded, ensuring the safety of the user while providing unobstructed visibility of the logging operation. This protective shield ensures that researchers can work confidently, even when handling challenging or sensitive samples.

This upgrade represents our commitment to staying at the forefront of marine sediment research, contributing to a deeper understanding of our planet's history and environmental changes.

NURTURING OUR FUTURE ENGINEERS

Our dedication to nurturing the next generation of engineers is a top priority, and we have launched an initiative to inspire and support early career marine engineers and technologists.

To share our expertise and resources to help them thrive in the field we've introduced a special educational institute membership option at our renowned Marine Robotics Innovation Centre. In South Hampshire, college memberships include Fareham, Eastleigh, and Southampton City.

Our collaboration with Fareham College has already brought valuable benefits to the college and its students. One such advantage is the provision of free tickets to our highly regarded annual event, the Marine Autonomy and Technology Showcase (MATS), enabling students to have a first-hand look at the cutting-edge innovations and breakthroughs in the field of marine robotics and technology.

By extending this opportunity to all educational institutes we hope to inspire and equip the next generation with the knowledge and motivation they need to excel in their careers.

The upgraded Geotek Core Workstation (MSCL-XYZ) in our BOSCORF facility

Students from Fareham College visiting the Marine Autonomy and Technology Showcase 2022

Early Career Researchers from under-represented countries attending the Ocean Twilight Zone Symposium

EMPOWERING GLOBAL OCEAN SCIENCE EDUCATION

The Joint Exploration of the Twilight Zone Ocean Network (JETZON) program, supported by a Grantham Foundation bursary, has made a significant impact on science students worldwide. A $75,000 donation facilitated the attendance of students from under-represented countries like Cameroon, Nigeria, and Mexico at the Ocean Twilight Zone Symposium.

This international conference covered various critical ocean topics, emphasising the Twilight Zone's significance for biodiversity and climate regulation through helping the ocean store carbon.

The bursary further supported over half of the 130 attendees, as early career scientists, by covering their registration fees. This initiative aimed to foster global collaboration and education for scientists worldwide.

Led by NOC, JETZON is an endorsed UN Ocean Decade Programme **LEARN MORE: DECADE OF OCEAN SCIENCE - PAGE 56** and serves as a global coordinator for Twilight Zone studies.

ADVANCING POSTGRADUATE EDUCATION IN GEOSCIENCES

The launch of the Geosciences Advanced E-Learning Academy (GAEA) underscores our unwavering commitment to postgraduate education and providing access to world-class resources for the national and international science community.

GAEA serves as a virtual educational space, supported by the UK's Natural Environment Research Council (NERC), offering a wide array of courses, materials, and opportunities for researchers at all career stages. The site has reported 5.9k users since October 2022, with 302 registered learning accounts from 51 countries.

The educational courses and materials have been crafted and contributed to by world-leading experts in their field, including staff from our own British Ocean Sediment Core Repository and Facility (BOSCORF).

BOSCORF is a vital resource housing ocean floor sediment cores, acting as a time capsule of Earth's history. Scientists study past climates, ecosystems, and geological processes, revealing information about sea levels, environmental changes, and predicting future climate trends. This accessible treasure trove supports global researchers in developing expertise in environmental science and technology.

PRESTIGIOUS AWARD FOR PODCAST

We were delighted when our Into the Blue podcast received the prestigious Babcock First Sea Lord's Award for Best Use of Digital Media at the Maritime Media Awards 2022. This recognition is a testament to the podcast's significant contribution to enhancing public awareness of maritime issues and highlighting the critical role of the ocean.

For over two decades, the Maritime Media Awards have celebrated the work of journalists, authors, filmmakers, digital creators, and others whose media initiatives have played a pivotal role in fostering a deeper understanding of maritime matters and the UK's reliance on the sea.

The award for Best Use of Digital Media commended the podcast for its "stimulating and engaging" content.

Launched in 2022, Into the Blue explores topics such as climate change and satellite oceanography, featuring insights from NOC and external experts, empowering listeners with a profound understanding of the ocean and its challenges. Season two is available on all podcast platforms and YouTube.

INSPIRING STEM ENGAGEMENT

We hosted Protect Our Planet 22, as part of our unwavering commitment to schools and STEM engagement. This remarkable event was broadcast live from our Boaty McBoatface workshop in Southampton, offering an enriching experience for students and educators alike.

Hosted by planetary scientist Dr Suzie Imber and science TV presenter Dallas Campbell, the event attracted 106,308 viewers, featuring engaging activities, live link-ups, talks, and explorations. Experts like Angela Hatton, Allison Schaap, Tammy Horton, and Matt Kingsland contributed to the success. This educational extravaganza reached 6,181 teachers and an impressive 100,127 students.

The event was organised by the UK Space Education Office (ESERO-UK) at STEM Learning, in close collaboration with the European Space Agency and the UK Space Agency. Our involvement emphasised our commitment to inspiring the next generation of scientists and explorers to safeguard our ocean's future.

Dr Zoe Jacobs presenting on the set of our award winning podcast; Into the Blue

Dr Suzie Imber and Dallas Campbell presenting from the ALR workshop

MONSTERS OF THE DEEP ON TOUR

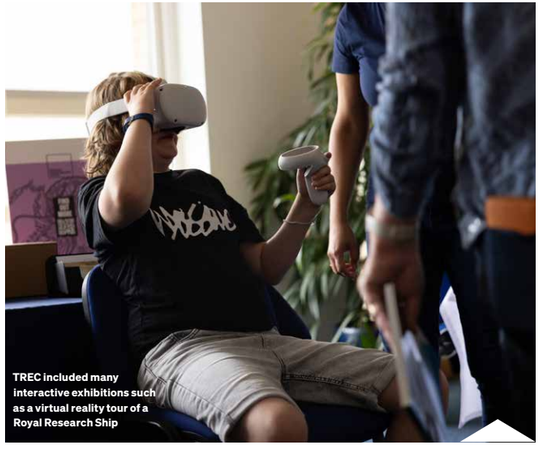
With a Vampire Squid and a model of Boaty McBoatface; the Historic Dockyard Chatham became the latest stop for Monsters of the Deep described as the most technically sophisticated and lavish sea monster-themed showcase ever produced.

Dr Tammy Horton, said:

"The Discovery Collections are made up of specimens and samples collected since 1925 from the open ocean and deep sea that provide a picture of how the ocean is today and to understand how the ocean is changing, the impact we are having on the ocean, and planet at large, and this research allows us to provide answers to societal questions such as climate change."

The exhibition encourages visitors to explore centuries-old myths and legends of mermaids, tales of deep-sea creatures, explore the fake news stories that proliferate today, and meet the real monsters of the deep housed in tall 'bubbling' enigmatic glass tubes containing specimens that will change the way visitors view sea 'monsters'.

The Monsters of the Deep exhibition at the NMMC, Falmouth



TREC included many interactive exhibitions such as a virtual reality tour of a Royal Research Ship

SOLENT COMMUNITY ENGAGES IN COASTAL EXPLORATION

We were thrilled to be a part of the European Molecular Biology Laboratory's (EMBL) Traversing European Coastlines (TREC) expedition during their week in the Solent, exemplifying our responsibility to engage with our local community **LEARN MORE: COMMUNITY+CULTURE - PAGE 70.** **Southampton served as one of 22 public engagement stops on TREC's pan-European journey, uniting ocean exploration with coastal sampling to provide EMBL with a ground-breaking census of European coastal ecosystems.**

We opened our doors to offer a range of engaging activities focused on planetary biology, marine science, and ocean ecosystems. The program included interactive, game-based workshops, guided tours, and an exhibition area where participants had the opportunity to interact with NOC scientists and gain insights into their research.

To ensure accessibility, we exhibited at WestQuay Shopping Centre, inviting individuals to delve into the microscopic world of our ocean, featuring organisms like plankton. These minute life forms play a pivotal role in planetary health, and we provided microscopes and models to showcase the vast biodiversity of our ocean and the interconnected marine food chain. We also participated in science talks held at a local pub, creating an informal and approachable environment to learn about the research that we are conducting to better comprehend planetary health and our changing ocean.

Prince Olivia Investigates is written by Lucy Hawking and illustrated by Zoe Persico

© Penguin Books

BOOK COLLABORATION COMBATS PLASTIC POLLUTION

***Princess Olivia Investigates: The Sea of Plastic*, the second book in Lucy Hawking's middle-grade series, was launched this summer and follows ex-princess Olivia Alez, now a science investigator, as she confronts the urgent issue of ocean pollution.**

Lucy Hawking collaborated closely with our world-leading experts for scientific accuracy and inspiration. Dr Chelsey Baker, Dr Sara Fowell, Professor Steph Henson, Dr Alice Marzocchi, and Dr Katsia Pabortsava, contributed their knowledge and insights to the book. Their collaboration enabled the narrative to incorporate real-world marine science topics seamlessly.

Throughout the story, readers encounter science inserts written by these experts, enhancing the educational value of the book. *Princess Olivia Investigates* not only entertains but also educates young readers about the critical issue of ocean pollution and its impact.

This collaboration serves as a powerful example of how literature and science can come together to engage and inspire the next generation. It encourages young readers to explore the wonders of marine science and empowers them to take action in protecting our ocean.

HISTORIC MEETING OF MARITIME EXPLORATION

The historic meeting between the modern RRS *Discovery* and the original *Discovery* in Dundee marked a significant moment in the world of maritime exploration and scientific research. This event was the first time that the two iconic vessels were together.

The original RRS *Discovery's* fame is primarily associated with its pivotal role in Captain Scott's 1901 expedition to Antarctica. This expedition marked the beginning of exploration and scientific discovery in some of the world's most challenging environments. The modern RRS *Discovery* worked directly with the Dundee Heritage Trust to open its doors to visitors and schools, allowing them to gain insight into the ship's cutting-edge research on the ocean and climate.

Meanwhile, the crew of the modern *Discovery* visited the original vessel in Dundee, where they were presented with an original piece of the deck, a symbolic gesture that bridged the past and present. The event underscored the enduring spirit of discovery and emphasised the vital role that ships like the RRS *Discovery* continue to play in advancing our understanding of the natural world.

RRS *Discovery* arriving in Dundee for the *100 Years of Discovery* exhibition

© John Pow

SHIPS FOR GLOBAL SCIENCE

CRITICAL COLLABORATION

In the ever-evolving landscape of scientific exploration, the NOC-operated research ships; RRS *Discovery* and RRS *James Cook*, have embarked on remarkable journeys in a testament to global co-operation and shared aspirations.

The newly painted hull of the RRS *Discovery* being inspected

REFIT IN ROSYTH

RRS *Discovery* was the first UK Royal Research Ship to be refitted in Babcock's Rosyth facilities as part of the Government's £45 million award to maintain its flagship scientific research vessels.

During it's time in dry dock the maintenance crew were able to clean the hull and propulsion equipment, which has lowered fuel usage and increased overall speed making RRS *Discovery* more efficient.

RRS *DISCOVERY*: A STATISTICAL SNAPSHOT

233
DAYS IN SUPPORT OF SCIENCE

31
DAYS ON PASSAGE TO DESTINATION

42
DAYS IN REFIT

6
DAYS ALONGSIDE

53
DAYS IN MOBILISATION / DEMOBILISATION

DY166

Led by NOC engineers, technologists and data experts, this mission focused on our innovative marine technology.

Rigorous testing of our latest autonomous underwater vehicles proved their readiness for integration into the National Marine Equipment Pool (NMEP). These trials pushed technological boundaries, offering the science community advanced tools for better understanding the ocean's impact on climate and biodiversity.

We also launched our updated online live tracker for all the ships and vehicles, providing easier access and a streamlined user experience so anyone can follow along on our missions and expeditions.

DY157

The expedition to the Atlantic Meridional Transect (AMT), led by the Plymouth Marine Laboratory (PML), was a scientific odyssey across the Atlantic Ocean.

A collaborative effort of international marine scientists, they gathered crucial data on the ocean's properties and ecosystems. By sampling at various depths and latitudes, the expedition deepened our understanding of the ocean's role in climate dynamics and marine life.

This voyage exemplified global co-operation and the pursuit of knowledge, providing insights that will inform conservation and climate change mitigation.

Map imagery credit ©Mapbox

DY158

The expedition to the Southern Ocean with the British Antarctic Survey (BAS), saw us supply twenty-two crew members and six highly skilled technicians who provided underwater sensor technology and enabled the facilitation of marine data gathering.

BAS provided the scientific expertise to understand the long-term variability in krill biomass and the influences from climate variability, fishing pressure and predation. The expedition also included the rapid reroute to explore the nearby A76A iceberg **SEE NAVIGATING THE WORLD'S LARGEST ICEBERG- PAGE 24**.

DY159

RRS *Discovery* took a CEFAS-led team of researchers on a six-week voyage from Southampton to the remote British Overseas Territories of Ascension Island and St Helena, supported by the UK Government's Blue Belt Programme.

A collaborative effort of marine scientists, ecologists, and oceanographers, this mission utilised cutting-edge technology to unveil the biodiversity and intricate ecosystems of these uncharted waters. The expedition's findings could offer essential insights for the conservation of these fragile marine environments and inform future policies.

JC243

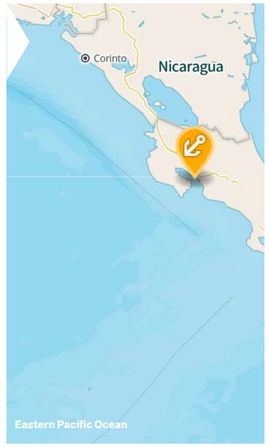
Under the leadership of Fisheries and Oceans Canada (DFO), this charter played a pivotal role in continuing the Atlantic Zonal Monitoring Program.

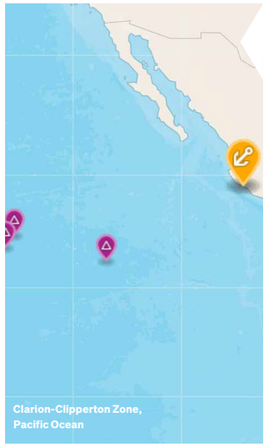
Starting in 1998, these annual expeditions focus on the comprehensive collection and analysis of biological, chemical, and physical oceanographic data. Since 2000, the program has consistently produced the State of the Ocean Condition Report, contributing significantly to the scientific communities understanding of the Atlantic Ocean's health and dynamics. We've also signed a 5 year collaborative framework agreement with DFO and Natural Resources Canada. This will see further charters and opens more collaborative opportunities.

JC228

Led by the Helmholtz Centre for Ocean Research Kiel and University of Southampton this expedition delivered key information about changes in the Earth's crust beneath the sea.

Using tools like seismic instruments and underwater robots, scientists looking for clues about rock formations and the timing of certain geological processes, like the transformation of rocks into serpentine. They collected samples and mapped the ocean floor to enhance our understanding of Earth's history and its ongoing transformations.





Map imagery credit ©Mapbox

JC247

Part of the NERC funded Climate Linked Atlantic Sector Science project (CLASS), NOC scientists visit PAP-SO every year to take samples, make new observations, and maintain the autonomous in situ infrastructure, such as a large surface ocean mooring operated in collaboration with the Met Office.

We deliver the latest observations and data to study causes and consequences of multi-decadal change in the North East Atlantic and collect data to monitor essential ocean variables such as ocean temperature and salinity, carbon dioxide, oxygen, nutrient content, particulate matter, and the abundance of phytoplankton, zooplankton, and sea-floor invertebrates.

JC241

NOC researchers embarked on a month-long research expedition from Costa Rica to the Central Pacific to understand the possible impacts of deep-sea extraction of polymetallic nodules on the seabed.

The findings will provide the critical scientific understanding to reduce the risk of extracting these nodules in a 6 million km² region of the central Pacific Ocean. The project is one of four from NOC currently endorsed as a UN Ocean Decade Action and supports our commitment to the United Nation Sustainable Development Goals **LEARN MORE: DECADE OF OCEAN SCIENCE - PAGE 56**.

RRS *JAMES COOK*: A STATISTICAL SNAPSHOT

54
DAYS ON PASSAGE TO DESTINATION

71
DAYS IN REFIT

0
DAYS ALONGSIDE

49
DAYS IN MOBILISATION / DEMOBILISATION

191
DAYS IN SUPPORT OF SCIENCE

BRINGING SCIENCE TO BIG CHALLENGES

ADDRESS ISSUES OF NATIONAL IMPORTANCE REQUIRING INTERNATIONAL SCIENCE; A STRONG EMPHASIS IN GLOBAL INFLUENCE

In our contemporary world, the challenges confronting the ocean are intricate, interwoven issues that extend beyond mere geographic borders. NOC bridges this gap through holistic, cooperative approaches that unite experts from diverse fields to confront pressing matters head-on.

Our goal is to nurture international collaborations that not only push the boundaries of scientific knowledge but also contribute to the collective efforts of nations in addressing shared challenges. Guided by visionary leadership, we assume a pioneering role in tackling multifaceted issues, cementing our status as a global thought leader in the realm of multidisciplinary science.

OCEAN TAKES CENTRE STAGE AT UN CLIMATE CONFERENCE

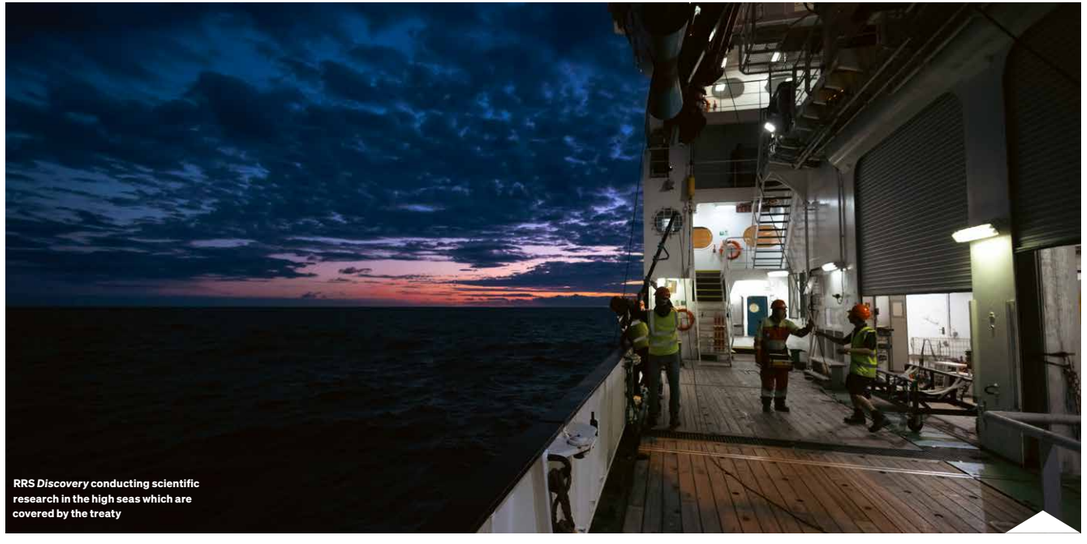
We attended the 27th Conference of the Parties to the United Nations Framework Convention on Climate Change (UNFCCC).

For the first time, the ocean was addressed in a dedicated sub-section, continuing the momentum initiated at COP26. This involved the commitment to an ongoing formal ocean and climate change dialogue process.

Furthermore, the plan encouraged participating nations to consider ocean-based actions within their national climate goals, emphasising the potential of the ocean in achieving climate and sustainable development objectives.

We were present to advise in our official capacity as UK delegation and to open the brand new Ocean Pavilion. This collaboration space brought together leading oceanographic institutions, including NOC, to facilitate scientific briefings on topics such as; digital twins of the ocean, blue carbon, ocean observations, and ocean acidification.

Scientific conference held in the Ocean Pavilion, a collaboration between oceanographic institutions from around the world



RRS *Discovery* conducting scientific research in the high seas which are covered by the treaty

KEY ROLE IN HISTORIC HIGH SEAS TREATY SIGNING

Global media took a big interest in the signing of the High Seas Treaty back in March 2023, with NOC's Alan Evans appearing on TV to speak about the historic moment:

"A critical outcome of the new Treaty is the ability to more readily realise the target of establishing 30% of the global ocean as Marine Protected Areas (MPAs) by 2030. Prior to the Treaty there was no means for States to declare MPAs beyond their national jurisdiction. As such the new Treaty supports a holistic ocean governance framework to implement the obligations to protect and preserve the marine environment as included in the United Nations Convention on the Law of the Sea (UNCLOS).

If you look at industries that could broaden their scope onto the High Seas, or new emerging opportunities, there was no mechanism in place to ensure robust oversight. The new Treaty now provides a framework where environmental risk assessments will have to take place and need to be inclusive by way of broad consultation with stakeholders. Such obligations will support the desire to conserve the inherent value of biodiversity of areas beyond national jurisdiction.

This is a truly historic agreement that will strengthen governance of the world's ocean. The new Treaty goes beyond enabling protection, it also provides the framework to manage the ocean and sustainably use its biological resources, furthermore, it addresses the imbalance of those who can and cannot contribute to management of the ocean by way of provisions that bring about equity such that every State can contribute to a truly global effort to better manage our one shared ocean."

Alan served as a technical adviser to the UK Government in the BBNJ IGCs, offering practical insights and bringing in subject domain experts for specialist issues.

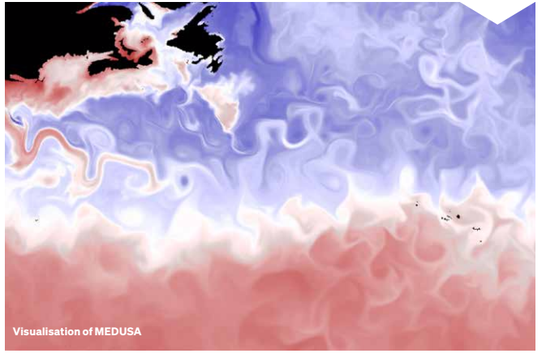
MODELLING MEDUSA

NOC is at the forefront of ocean modelling, engaging in two ground-breaking modelling endeavours, NEMO and UKESM, which have played significant roles in advancing the evolution of MEDUSA, the marine ecosystem model created and developed by NOC.

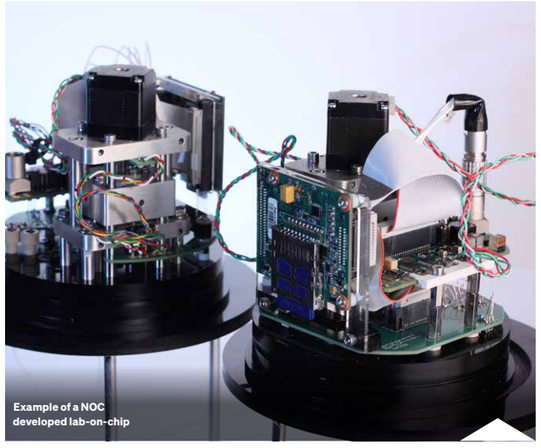
NEMO is a state-of-the-art ocean physics framework utilized across both oceanography and climate science for research, operational and climate forecasting purposes. It has been developed through collaborative efforts with European partners, ensuring its long-term reliability and sustainability.

The UK Earth System Model (UKESM) is another cutting-edge model, developed through the close co-operation of a core team of UK scientists drawn from the Met Office and NERC research centres, including NOC. From its surface waters to its abyssal depths, MEDUSA represents the ecology and biogeochemistry of the ocean, and serves as a key tool for addressing contemporary marine topics. As well as research questions, MEDUSA's simulation of living systems from coastal regions to the open ocean informs policy, from fisheries and marine amenities through to nature-based solutions for achieving net-zero.

By integrating MEDUSA into both the NEMO and UKESM modelling frameworks, we bolster our ability to simulate and understand the intricate relationships within marine ecosystems and with the wider Earth system. This collaborative approach of NOC empowers researchers and policymakers to confront marine and environmental challenges directly, providing them with valuable insights into the complex web of life that exists beneath the ocean's surface.



Visualisation of MEDUSA



Example of a NOC developed lab-on-chip

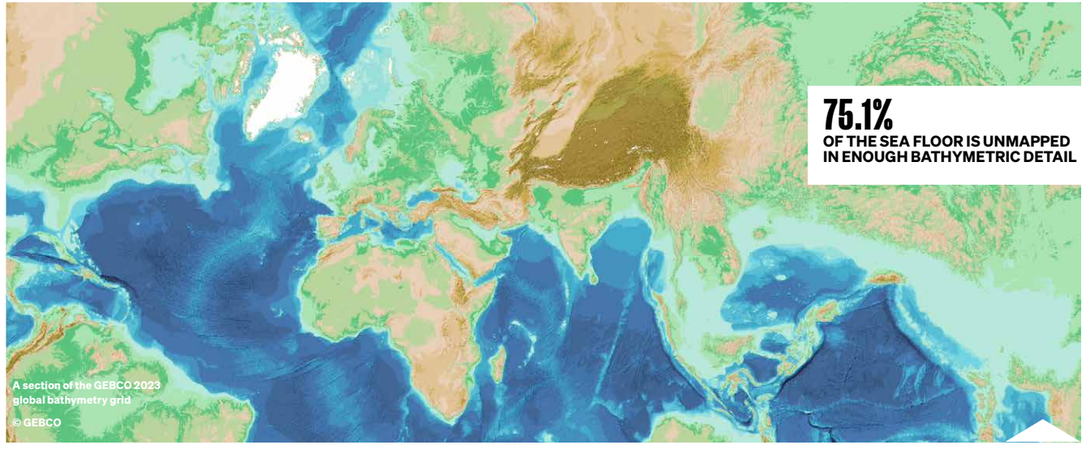
LEADING CCS INNOVATIONS FOR CLIMATE MITIGATION

We are at the forefront of collaborative efforts with both government and industry to research and develop Carbon Capture and Storage (CCS) as a sustainable and safe solution in the fight against climate change.

CCS is a critical technology that involves capturing carbon dioxide (CO_2) emissions from industrial processes and power plants and then safely storing them underground to prevent their release into the atmosphere. We pioneer novel chemical sensors, including lab-on-chip sensors, to detect and quantify CO_2 releases in offshore environments.

Project Greensand advances these technologies to create a robust CCS monitoring system, ensuring long-term integrity and compliance with regulatory requirements. This ensures that stored CO_2 remains contained and does not pose risks to the environment or human health. We have also collaborated closely with government agencies and industry partners to inform CCS regulations, policies, and best practices.

This collaboration ensures that CCS can be deployed safely and effectively on a large scale. Our commitment to CCS research underscores our dedication to addressing climate change by advancing innovative and climate solutions **LEARN MORE: OCEAN-DRIVEN CLIMATE SOLUTIONS - PAGE 15**.



A section of the GEBCO 2023 global bathymetry grid

© GEBCO

MAPPING 24.9% OF THE WORLD'S OCEAN FLOOR

An additional 5.4 million square kilometres of data, equivalent to an area twice the size of Argentina, has been added to the map of the world's ocean floor. This means that 24.9% of the seabed is now mapped, a feat celebrated during the International Hydrographic Organization (IHO) Assembly in Monaco, where HSH Prince Albert II of Monaco made the announcement.

The global initiative to map the entire ocean floor by 2030 is led by Seabed 2030, a collaborative project between The Nippon Foundation and the General Bathymetric Chart of the Ocean (GEBCO), a joint program of the IHO and the Intergovernmental Oceanographic Commission of UNESCO. NOC's British Oceanographic Data Centre (BODC), plays a pivotal role as the Global Centre for Seabed 2030.

This project is essential for informing decisions related to resource management, environmental changes, and ocean conservation, aligning directly with UN Sustainable Development Goal 14, which focuses on conserving and sustainably using the ocean.

Pauline Weatherall, NOC Data Scientist and GEBCO Digital Atlas Manager, said:

"In the year that marks the 120th anniversary of the initiation of the GEBCO chart series, we are proud to continue BODC's role in managing and delivering GEBCO's global bathymetric grid on behalf of the project and our continuing collaboration with the Seabed 2030 Regional Centres and wider sea-floor mapping community."

Seabed 2030, established during the UN Decade of Ocean Science, addresses the challenge of mapping the ocean floor. Since 2017, it has made significant progress, acquiring 90 million square kilometres of bathymetric data through global partnerships. Discoveries include a catalogue of over 19,000 undersea volcanoes, advancing ecology and oceanography. Challenges like the vast ocean scale persist, but Seabed 2030 prioritizes capacity building through initiatives like The Nippon Foundation's GEBCO training program and the IHO's Empowering Women in Hydrography, fostering a diverse community of ocean mappers aligned with UN development goals.

As we celebrate GEBCO's 120th anniversary, we reflect on the significant progress made over the past century and look ahead to the exciting discoveries and accomplishments yet to come in our ongoing exploration of the world's ocean.

DECADE OF OCEAN SCIENCE

FOR SUSTAINABLE DEVELOPMENT

The Ocean Decade provides a common framework to ensure that ocean science can fully support countries to achieve the 2030 Agenda for Sustainable Development.

The Agenda recognises that ending poverty and other deprivations must go hand-in-hand with strategies that improve health and education, reduce inequality, all while tackling climate change and working to preserve our ocean and forests.

This year we've had several more programmes, projects and initiatives officially endorsed as part of the Ocean Decade, in addition to those in 2021/22; FLAME, ATLANTOS, SMARTEX, WORMS and DITTO.

THE SCIENCE WE NEED FOR THE OCEAN WE WANT

The seven Ocean Decade Outcomes describe the ocean we want:

A CLEAN OCEAN where sources of pollution are identified and reduced or removed.

A HEALTHY AND RESILIENT OCEAN where marine ecosystems are understood, protected, restored and managed.

A PRODUCTIVE OCEAN supporting sustainable food supply and a sustainable ocean economy.

A SAFE OCEAN where life and livelihoods are protected from ocean-related hazards.

AN ACCESSIBLE OCEAN with open and equitable access to data,information and technology and innovation.

A PREDICTED OCEAN where society understands and can respond to changing ocean conditions.

AN INSPIRING AND ENGAGING OCEAN where society understands and values the ocean in relation to human wellbeing and sustainable development.

10 CHALLENGES

The UN Ocean Decade presents a bold vision and mission for addressing the pressing issues facing our ocean. The vision, succinctly encapsulated in the phrase; the science we need for the ocean we want, underscores the importance of scientific innovation and collaboration in shaping a sustainable future for our ocean.

The mission of the Ocean Decade is to harness transformative ocean science solutions that will support sustainable development, fostering connections between people and the ocean. Only by taking on and overcoming these 10 Challenges can we realise the seven vital Ocean Decade Outcomes;

CHALLENGE 01: UNDERSTAND AND BEAT MARINE POLLUTION

Understand and map land and sea-based sources of pollutants and contaminants and their potential impacts on human health and ocean ecosystems and develop solutions to remove or mitigate them.

CHALLENGE 02: PROTECT AND RESTORE ECOSYSTEMS AND BIODIVERSITY

Understand the effects of multiple stressors on ocean ecosystems, and develop solutions to monitor, protect, manage and restore ecosystems and their biodiversity under changing environmental, social and climate conditions.

CHALLENGE 03: SUSTAINABLY FEED THE GLOBAL POPULATION

Generate knowledge, support innovation, and develop solutions to optimise the role of the ocean in sustainably feeding the world's population under changing environmental, social and climate conditions.

CHALLENGE 04: DEVELOP A SUSTAINABLE AND EQUITABLE OCEAN ECONOMY

Generate knowledge, support innovation, and develop solutions for equitable and sustainable development of the ocean economy under changing environmental, social and climate conditions.

05: UNLOCK OCEAN-BASED SOLUTIONS TO CLIMATE CHANGE

Enhance understanding of the ocean-climate nexus and generate knowledge and solutions to mitigate, adapt and build resilience to the effects of climate change across all geographies and at all scales, and to improve services including predictions for the ocean, climate and weather.

CHALLENGE 06: INCREASE COMMUNITY RESILIENCE TO OCEAN HAZARDS

Enhance multi-hazard early warning services for all geophysical, ecological, biological, weather, climate and anthropogenic related ocean and coastal hazards, and mainstream community preparedness and resilience.

CHALLENGE 07: EXPAND THE GLOBAL OCEAN OBSERVING SYSTEM

Ensure a sustainable ocean observing system across all ocean basins that delivers accessible, timely, and actionable data and information to all users.

CHALLENGE 08: CREATE A DIGITAL REPRESENTATION OF THE OCEAN

Through multi-stakeholder collaboration, develop a comprehensive digital representation of the ocean, including a dynamic ocean map, which provides free and open access for exploring, discovering, and visualizing past, current, and future ocean conditions in a manner relevant to diverse stakeholders.

CHALLENGE 09: SKILLS, KNOWLEDGE AND TECHNOLOGY FOR ALL

Ensure comprehensive capacity development and equitable access to data, information, knowledge and technology across all aspects of ocean science and for all stakeholders.

CHALLENGE 10: CHANGE HUMANITY'S RELATIONSHIP WITH THE OCEAN

Ensure that the multiple values and services of the ocean for human wellbeing, culture, and sustainable development are widely understood, and identify and overcome barriers to behaviour change required for a step change in humanity's relationship with the ocean.

OSA includes case studies of countries in the Western Indian Ocean

EXPANDING EDUCATIONAL VIDEO VAULT

Ocean Science in Action (OSA) is now available for free on our website, offering an exciting collection of educational videos. OSA is all about exploring cutting-edge marine technologies and their role in preserving our ocean.

In these videos, you'll dive into the world of marine robotics, remote sensing, and ocean modelling. We take you on a journey through the Indian Ocean, showcasing real-life examples of how these technologies are used. From protecting artisanal fisheries to preserving vital blue carbon ecosystems and supporting coastal communities facing the impacts of climate change, OSA covers it all.

What makes OSA special is its global collaboration. We partner with various research projects to create an ever-expanding library of engaging video lectures. These videos demonstrate how marine science plays a crucial role in achieving the UN Sustainable Development Goals and addressing the challenges of the Ocean Decade 2030.

Originally designed for a SOLSTICE Project MOOC and hosted by FutureLearn, OSA is now open to everyone. Whether you're a student, a curious mind, or an ocean enthusiast, these videos offer a unique opportunity to learn about marine science in action.

ADDRESSING UN OCEAN DECADE CHALLENGES:

ALLIANCE EXPANDS ROV SENSORS FOR CLIMATE RESEARCH

The BORA Blue Ocean Research Alliance®, a partnership between NOC and Subsea7, expanded the fleet of Subsea7 Remotely Operated Vehicles (ROVs) operating with an integrated BORAbox® following a successful prototype trial in 2022.

Information gathered by the BORAbox®, an integrated suite of sensors developed by our scientists, feeds into a global understanding of climate change and its impact on the ocean. As a result, the research will be used by scientists to better predict how the ocean and weather systems will react over the coming decades.

By combining our scientific prowess with Subsea7's global reach through its diverse fleet, we're ramping up the delivery of marine research around the world for the benefit of humanity. The BORA Blue Ocean Research Alliance® is an example of how research institutions and businesses can partner together to make sense of the changing seas.

The BORAbox® integrated suite of sensors developed through a partnership between NOC and Subsea7

Dr John Siddorn championing the emerging field of digital twin technology

ADVANCING ENVIRONMENTAL DIGITAL TWINS FOR RESEARCH

Building upon the comprehensive Information Management Framework for Environmental Digital Twins (IMFe) roadmap we established in 2021, we are creating a robust foundation for secure, resilient, and interoperable environmental digital twins.

The next big paradigm shift in the way we forecast our world, digital twins are virtual representations of real-world objects or systems that evolve with real-time observations. They hold immense potential to enhance our comprehension of the natural environment. By consolidating data from diverse sources, environmental digital twins can provide invaluable insights into current and future societal challenges.

The Pilot IMFe project embodies the roadmap's principles by creating a digital twin for the Haig Fras Marine Protected Area, an endorsed UN Ocean Decade Action. It also establishes a public digital twin asset register for reusable components, promoting interoperability across projects and maximising impact on environmental research. In collaboration with IMFe roadmap partners NERC/UKRI and the Met Office, the project advances digital capabilities through global cooperation.

ADDRESSING UN OCEAN DECADE CHALLENGES:

CARBON'S ROLE IN TACKLING CLIMATE CHANGE

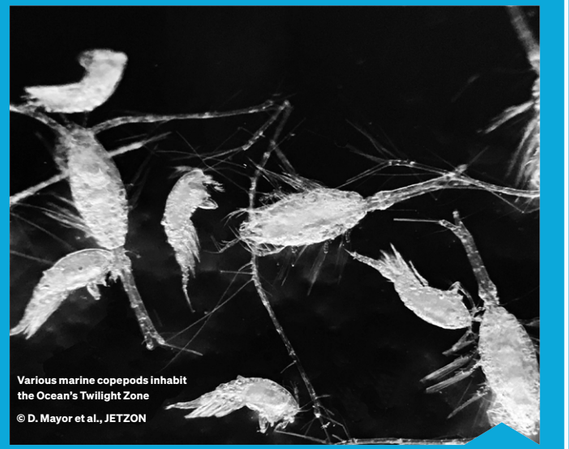
The ocean plays a crucial role in absorbing vast amounts of carbon dioxide (CO_2) that would otherwise be present in our atmosphere .Marine organisms are central to this carbon storage process.

However, recent research suggests that existing climate models may not fully consider their impact, which can undermine carbon policies and national net-zero targets. NERC's BIO-Carbon programme is dedicated to advancing our comprehension of biological processes in the ocean and providing reliable predictions about how the ocean will store carbon in a changing climate.

This endorsement by the UN Ocean Decade acknowledges the vital contribution of BIO-Carbon in addressing this global concern. NOC's Dr Adrian Martin, BIO-Carbon champion, emphasises the importance of this endorsement, highlighting the UK's significant contribution to addressing a pressing worldwide issue.

ADDRESSING UN OCEAN DECADE CHALLENGES:

A sediment trap being deployed to help us understand the movement and storage of carbon


Various marine copepods inhabit the Ocean's Twilight Zone

© D. Mayor et al., JETZON

UNLOCKING THE SECRETS OF THE OCEAN'S TWILIGHT ZONE

The Joint Exploration of the Twilight Zone Ocean Network (JETZON) programme led by NOC, sheds light on one of the most mysterious and crucial parts of our planet.. Known also as the mesopelagic zone, it's the layer of the ocean situated between the sunlit surface waters and the dark, abyssal depths below.

JETZON is a collaborative effort involving scientists from around the world, all joining forces to unlock the secrets hidden within this crucial part of the ocean. The twilight zone is home to a wide array of unique and often undiscovered species, some of which play a vital role in the planet's carbon cycle.

By understanding the creatures and processes of the twilight zone, we can gain crucial insights into climate change, marine ecosystems, and even potential new sources of food and medicine. The exploration network employs advanced technologies gather data and images from the depths, enabling a clearer picture of this mysterious world.

ADDRESSING UN OCEAN DECADE CHALLENGES:

UNDERPINNED BY SUSTAINABILITY AND SOCIAL RESPONSIBILITY

NOC's commitment to sustainability and social responsibility (SSR) is the compass that guides its research, innovation, and outreach activities. It shapes our decisions, influences partnerships, and ultimately, helps create a more sustainable, equitable, and prosperous world. Through this commitment, we showcase the importance of aligning scientific endeavours with ethical principles, setting a powerful example for organisations and individuals worldwide.

The Wellness Day would not have been possible without the dedication of the Culture Club

PEOPLE+CULTURE

NOC thrives because of the dedication and talent of our people, who work collectively towards our purpose. Our dedicated and diverse teams, including scientists, engineers, researchers, and support staff, forms the core of our organisation.

Our People & Culture 2020/25 Strategy continues to commit us to high standards of employee engagement, making employee well-being a priority and ensuring that our people work in an environment that respects and appropriately rewards them.

CULTURE CLUB

With NERC funding, we introduced a dedicated Cultural Cohesion Lead with resource to champion Diversity, Inclusion, and Cultural Development.

This is enabled through the new Culture Club with a strategic focus to foster an inclusive internal culture, aligning with existing strategies like Sustainability and Social Responsibility (SSR), Diversity, Equity and Inclusion (DEI), People and Culture, Marketing, and Health, Safety, and Well-being. We collaborate with recruitment, retention, reward, and recognition teams to integrate cultural considerations.

The Club was pivotal in supporting the Pride, Carers Community and Black History Month (coming October 2023), along with a staff blog for sharing experiences and allyship.

UNITE IN PRIDE

Across all four sites, from ships to shore, we proudly hosted our inaugural Progress flag-raising event during Pride Month, a global celebration of LGBTQIA+ rights and achievements, and a poignant reminder of the ongoing fight for equality. Our active participation in this celebration underscores the pivotal role diversity plays in propelling innovation and progress across diverse fields, such as academia, oceanography, and engineering.

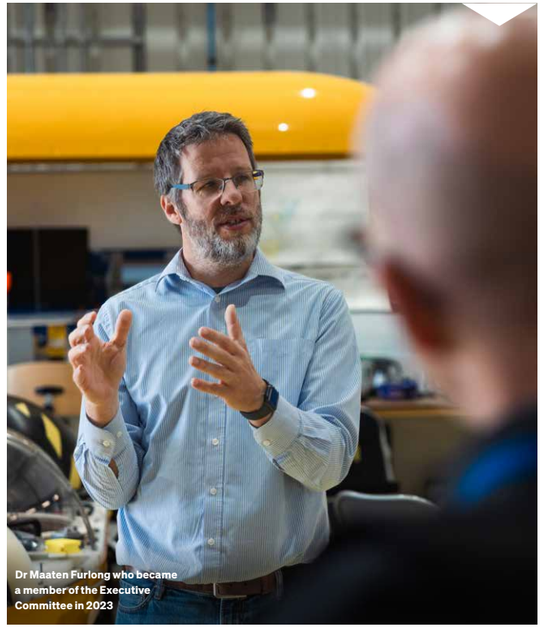
The flag-raising event was a powerful moment of connection, uniting LGBTQIA+ staff and allies in a resounding message of solidarity. This spirit extended throughout the month, with the creation and sharing of various resources, including staff-authored blogs, posters, and educational materials.

The Culture Club were instrumental in our first Pride Flag raising event

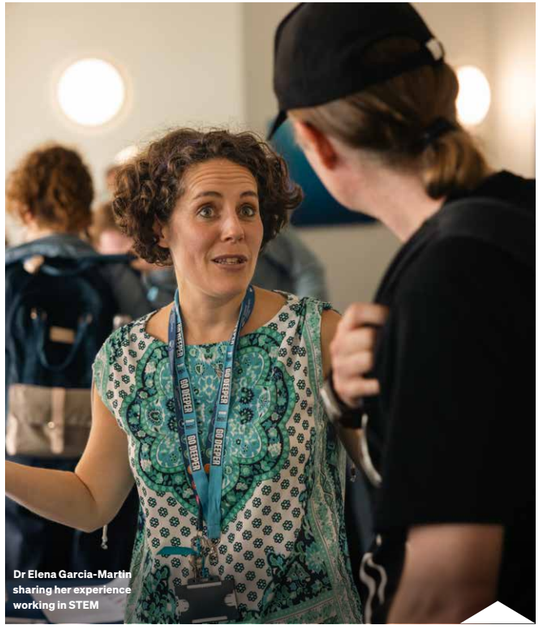
LIVING LEADERSHIP

We recognise the pivotal role that strong, visionary leadership plays in fostering innovation, driving transformation, and enabling teams to reach their full potential. To ensure that our senior leadership team are equipped with these essential skills and capabilities, we implemented the Living Leadership Programme.

However, leadership is not merely about seniority. Leaders can be found across the organisation, guiding and motivating individuals toward a shared vision and fostering a culture of continuous improvement. Thus, to support all our line managers we continue to invest in our world-class manager programme.



Dr Maaten Furlong who became a member of the Executive Committee in 2023



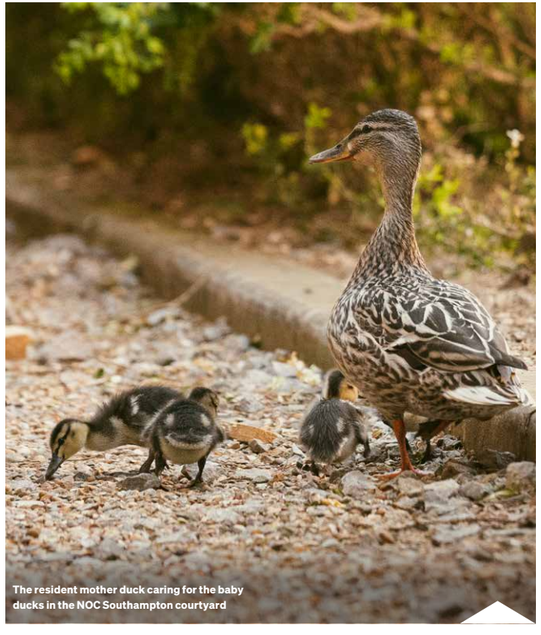
Dr Elena Garcia-Martin sharing her experience working in STEM

DR ELENA GARCIA-MARTIN

This International Women's Day Dr Elena Garcia-Martin shared her own personal story of studying marine science and working for the ocean at a special STEM event hosted by the Southern Universities Network.

Elena said:

"For years women have been under-represented in science, technology, engineering and mathematics (STEM) degrees and occupations. I talk about the gender gap and why we are so few, my personal experiences while studying Marine Science and working in oceanography, and what can be done to balance the numbers."



The resident mother duck caring for the baby ducks in the NOC Southampton courtyard

CARERS COMMUNITY

Launched during Carers Week 2023, our Carers Community provides support and assistance to employees who are caring for children or adults, recognising the challenges they face in balancing care-giving responsibilities with work.

The community has hosted sessions in both Liverpool and Southampton, offering a platform for sharing practical advice, experiences, and solutions, creating a supportive network within the NOC family.

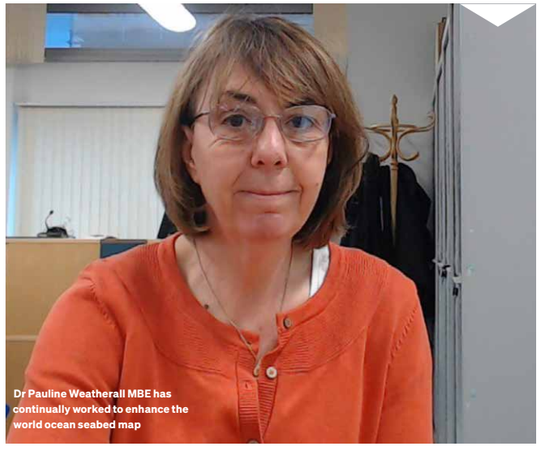
While acknowledging that none of its members are experts, the community emphasises the value of collective learning and support, providing a safe space for NOC staff to navigate the challenges of care giving while pursuing their careers.

DR PAULINE WEATHERALL MBE

We were incredibly proud of Pauline Weatherall, who was honoured with an MBE for her outstanding contributions to bathymetry, the science of mapping the sea floor. Pauline serves as the Digital Atlas Manager for the General Bathymetric Chart of the Ocean (GEBCO), the definitive map of the world's ocean floor.

For over three decades, Pauline's dedication has revolved around gathering digital seabed data from across the globe and integrating it to enhance and continually update the world ocean seabed map. This map is a vital resource, providing authoritative bathymetry data sets for the world's ocean. In recent years, GEBCO's map has become the cornerstone of the Seabed 2030 project, a global endeavour aimed at detailed mapping of the entire world ocean by 2030.

Pauline's expertise has earned her international recognition. She has contributed to numerous ground-breaking reports, including the Intergovernmental Oceanographic Commission of UNESCO's State of the Ocean Report. Her efforts have significantly advanced our understanding of the ocean floor's depth and shape, crucial for comprehending ocean phenomena, environmental changes, underwater hazards, and much more.



Dr Pauline Weatherall MBE has continually worked to enhance the world ocean seabed map

OUR PEOPLE: A STATISTICAL SNAPSHOT

36.03%
OF WORKFORCE IDENTIFY AS FEMALE

32.65%
OF PEOPLE MANAGERS IDENTIFY AS FEMALE

80%
OF EMPLOYEES AGREE NOC IS A GREAT PLACE TO WORK

70%
OF WORKFORCE HAVE ACTIVE BYSTANDER TRAINING

90.60%
OF MANAGERS COMPLETE DEVELOPMENT PROGRAMME

67.65%
OF WORKFORCE ARE ON CLG TERMS & CONDITIONS

11
EMPLOYEE'S TRAINED AS MENTAL HEALTH FIRST AIDERS

28
EMPLOYEE'S WITH FORMAL FLEXIBLE WORKING

175
VACANCIES FILLED

The 2022 edition of the commended State of the UK Climate Report

Dr John Siddorn speaking about Digital Twins on our podcast, Into the Blue

DR SVETLANA JEVREJEVA

Dr Svetlana Jevrejeva achieved remarkable recognition by winning the prestigious International Journal of Climatology Editors Award for 2022. This award is a testament to her outstanding contributions in the field of weather, climate, and related disciplines. Svetlana was part of a dedicated team of authors, including Mike Kendon and Dr Mark McCarthy from the Met Office, Professor Tim Sparks, a volunteer with the Woodland Trust, and other co-authors.

Together, they have been annually producing the State of the UK Climate Report, which have been published as a Special Supplement to the International Journal of Climatology since 2017.

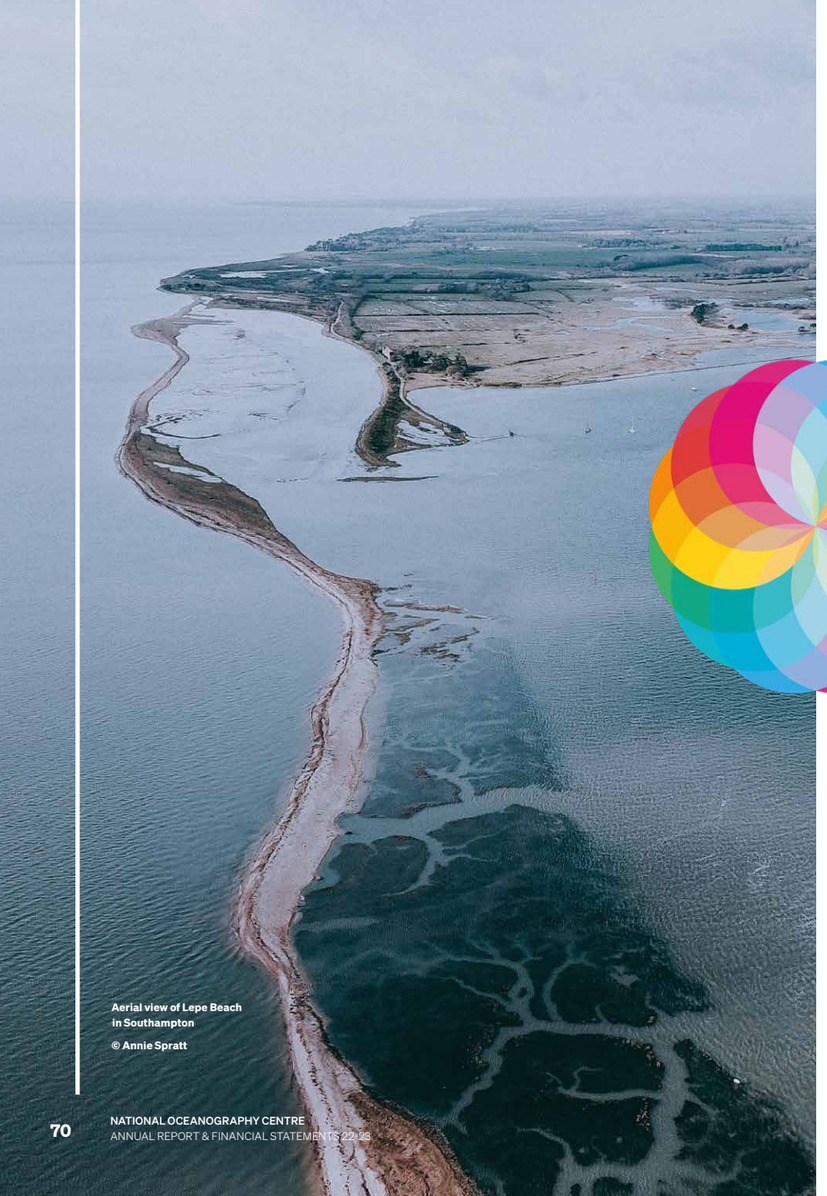
This recognition is a testament to the dedication, commitment, and invaluable contributions made by Svetlana and her colleagues in monitoring and understanding the evolving climate patterns, which are critical for addressing challenges like coastal erosion, flood risk, and rising sea levels.

DR JOHN SIDDORN

The Alan Turing Institute, known for its expertise in data science and artificial intelligence (AI), launched the ground-breaking Turing Research and Innovation Cluster for digital twins (TRIC-DT). Dr John Siddorn, our Director of Data, Science and Technology and NOC Chief Scientist was appointed as the co-director of TRIC-DT. In this role, he leads a dynamic team of experts in the field of digital twins.

Since joining NOC in 2020, John has played a pivotal role in fostering growth and collaboration within the digital twin community. His contributions to the Information Management Framework for Environmental Digital Twins (IMFe) demonstrate his leadership in shaping digital twin innovation.

TRIC-DT aims to establish a knowledge exchange network to address critical societal challenges across multiple domains. It will focus on environmental sustainability, infrastructure resilience, and improving human health and well-being, collaborating closely with partner organisations to generate tangible societal benefits.



Aerial view of Lepe Beach in Southampton

© Annie Spratt

COMMUNITY+CULTURE

We recognise that our actions impact the local and global community, so we are committed to fostering positive relationships, knowledge sharing, and collaboration. Our engagement with the community extends from outreach and education initiatives to partnerships with local organisations, ensuring that our scientific research benefits society as a whole.

By prioritising community as a pillar of our SSR strategy, we strengthen our bonds and collective responsibility for the well-being of our planet's ocean and environment. This commitment reflects our dedication to creating a sustainable and inclusive future for all.

EDUCATION & OUTREACH: A STATISTICAL SNAPSHOT

Below is a visual comparison of this year's Education & outreach data compared to 2021/22*.

71,132
TOTAL SOCIAL MEDIA AUDIENCE
▲ 11.1%

15,764
TOTAL PODCAST VIEWS AND LISTENS
▲ 753.9%

1,418
PIECES OF MEDIA COVERAGE
▲ 126.5%

488,118,116
TOTAL MAINSTREAM MEDIA REACH
▲ 155.4%

5,328,698
TOTAL TRADE MEDIA REACH
▲ 576.2%

733,295
UNIQUE PAGE VIEWS ACROSS WEBSITE
▲ 23.0%

86,309
UNIQUE PAGE VIEWS ON NEWS STORIES
▲ 12.1%

86
NEWS STORIES PUBLISHED ON WEBSITE
▼ 16.5%

4,141
OCEAN NEWS EMAIL SUBSCRIBERS
▼ 28.1%

71,132
TOTAL SOCIAL MEDIA AUDIENCE
▲ 11.1%

6.52%
ENGAGEMENT RATE

*for more information and to see the details of last year's performance, please read our Annual Report 2021/22

EVENTS 2023

GEBCO CONFERENCE

MENTAL HEALTH AWARENESS WEEK

PARLIAMENTARY RECEPTION FOR STAKEHOLDERS

MARINE AUTONOMOUS TECHNOLOGY SHOWCASE (MATS) 2023

OCEAN BUSINESS 2023

SUMMER CELEBRATION AND VALUES AWARDS

PROTECT OUR PLANET PAGE 41

UNITE IN PRIDE PAGE 65

INSPIRING STEM 2023 PAGE 42

OFFSHORE EUROPE 2023

OCEAN QUESTION TIME LABOUR PARTY CONFERENCE

WORLD OCEAN SUMMIT AND EXPO

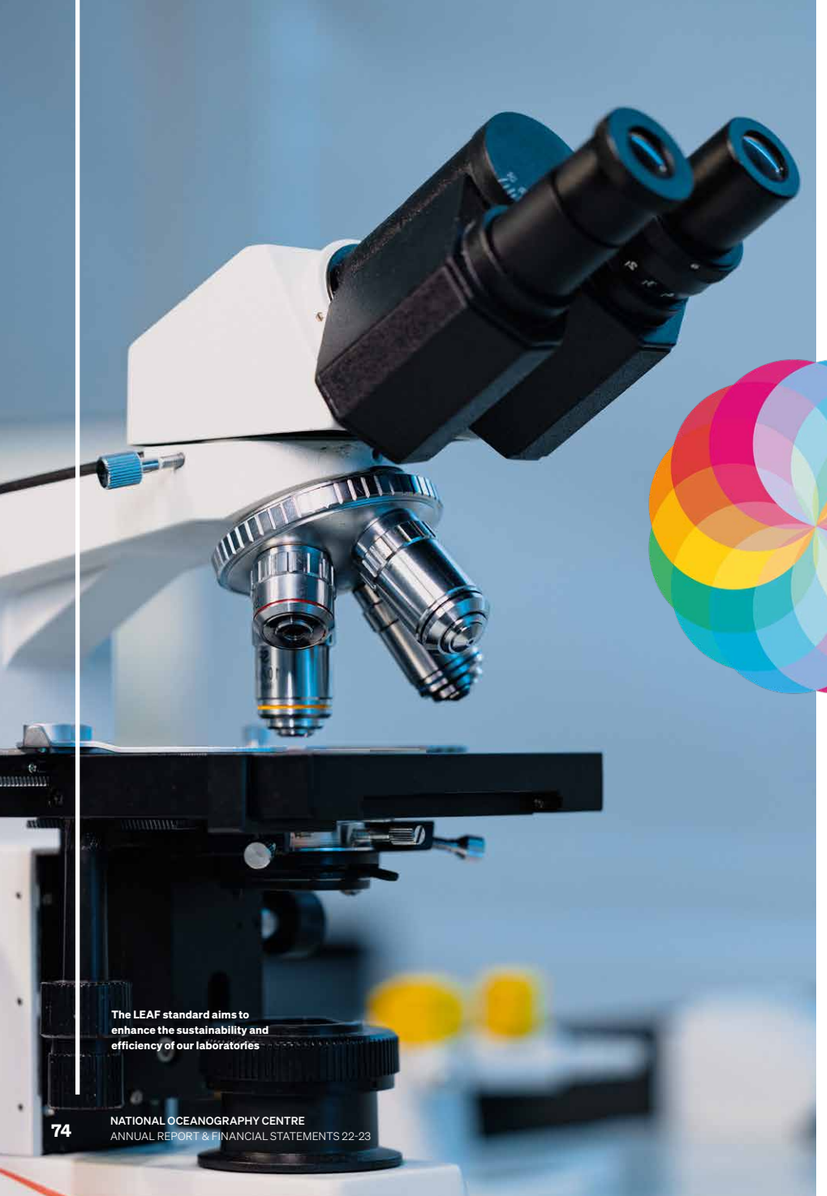
OCEAN QUESTION TIME CONSERVATIVE PARTY CONFERENCE

BENEATH THE WAVES PAGE 36

UN CLIMATE CHANGE CONFERENCE (COP27) PAGE 52

MONSTERS OF THE DEEP PAGE 42

SCIENCE IN WESTQUAY PAGE 42



The LEAF standard aims to enhance the sustainability and efficiency of our laboratories

ENVIRONMENT+CULTURE

As an organisation dedicated to understanding the world's ocean, we recognise our profound responsibility to safeguard the environment in all that we do. This commitment extends to reducing our carbon footprint, conserving biodiversity, and championing sustainable practices in oceanography and marine research.

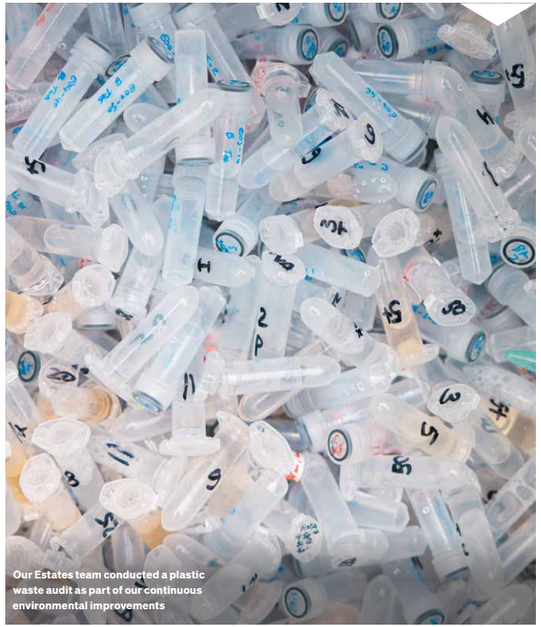
Our dedication to environmental stewardship aligns with our mission to advance knowledge, inform solutions, and foster a more sustainable coexistence with our planet's vital marine ecosystems.

LEARN MORE: STREAMLINED ENERGY AND CARBON REPORTING (SECR) - PAGE 96.

ENVIRONMENTAL MANAGEMENT REACCREDITATION

A big success this year was re-accreditation to ISO14001. The audit, conducted in January 2023, yielded outstanding results with zero non-conformities. This remarkable achievement underscores our unwavering commitment to environmental management excellence.

By maintaining the ISO14001 accreditation, we not only demonstrated our dedication to sustainability but also ensures that our operations aligned with the highest international standards. Such achievements are a testament to the collective efforts in promoting responsible environmental practices, setting a commendable example for organisations worldwide.



Our Estates team conducted a plastic waste audit as part of our continuous environmental improvements

LABORATORY EFFICIENCY ASSESSMENT FRAMEWORK

Our first three laboratories achieved Bronze accreditation from the Laboratory Efficiency Assessment Framework (LEAF) this year. LEAF is a globally recognised standard developed by University College London, designed to enhance the sustainability and efficiency of laboratories.

Participation in the LEAF program demonstrates our commitment to reducing carbon emissions within labs and workshops, fostering a research environment that upholds the highest standards of quality. We have set a challenging target to have Bronze in all labs by the end of 2023, Silver by the end of 2024, and Gold by end of 2025.

Annika Simpson introducing the LEAF standard at our internal launch event

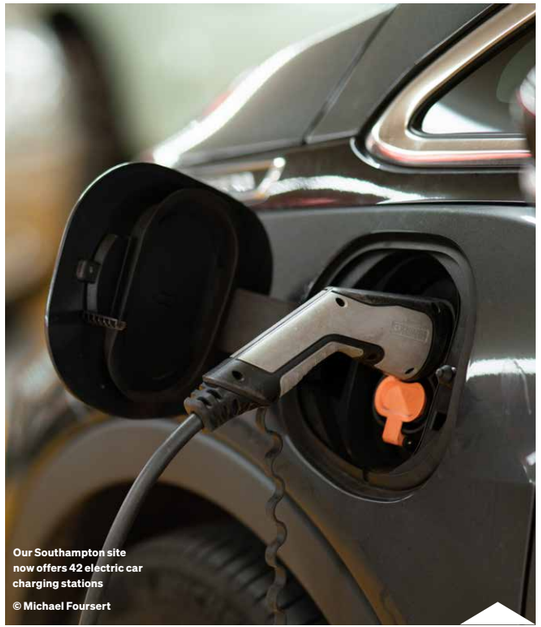
ALTERNATIVE FUEL

In collaboration with NERC, we are conducting a trial of Hydro-processed Vegetable Oil (HVO) as an alternative fuel source for the RRS James Cook and the RRS Discovery. This trial aims to reduce carbon emissions from marine science operations and aligns with NERC's goal to achieve 'net-zero' operational carbon emissions.

The sustainability, availability, cost, logistics, and emissions implications of HVO are carefully considered, including engagement with potential suppliers and regulatory bodies like the International Sustainability and Carbon Certification (ISCC) initiative.

As marine infrastructure accounts for a significant portion of NERC's carbon footprint, NOC's Marine Carbon Project is part of broader efforts to de-carbonise marine activities. Future actions include upgrading propulsion systems, facilitating renewable shore power supplies, and integrating carbon considerations into marine planning. The trial's outcomes will inform decisions on wider adoption, and findings will be shared with the marine industry to support its journey to net zero.

HVO trialled as an alternative fuel source for the RRS *Discovery*



Our Southampton site now offers 42 electric car charging stations

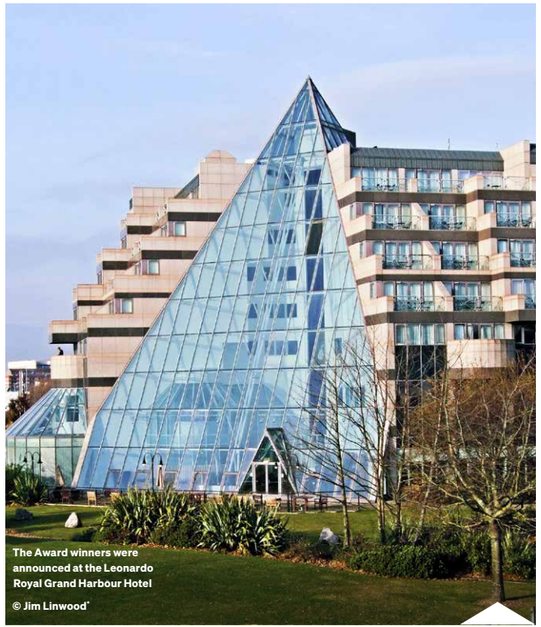
© Michael Foursert

ELECTRIC VEHICLE CHARGING POINTS

To further our commitment to environmental consciousness, we've significantly expanded our Electric Vehicle Charging points at our Southampton site, now offering 42 charging stations. This expansion not only promotes eco-friendly commuting for our staff but also lays the groundwork for an upcoming staff EV car scheme in the next financial year.

The charging points are part of our 100% green energy tariff, another great example of mitigating the carbon footprint associated with our purchased electricity.

Plus, we're always excited to demonstrate and encourage sustainable practices among our workforce while reducing our environmental footprint.



The Award winners were announced at the Leonardo Royal Grand Harbour Hotel

© Jim Linwood*

RECOGNITION FOR NET ZERO EMISSIONS

Our commitment to being a net zero organisation earned us a nomination for the Net Zero Navigator Award at the UK Maritime Solent Awards.

Our innovative collaborations, technology licenses, and dedication to reducing the carbon footprint of environmental research demonstrate our resolve to create a more sustainable world.

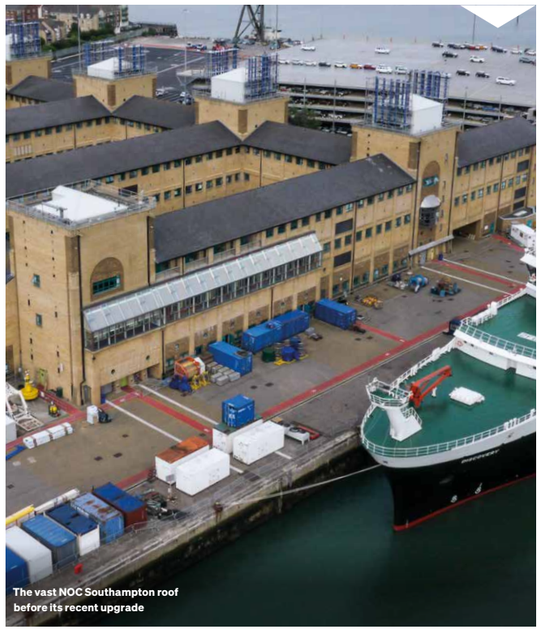
This recognition is a testament to our efforts to advance nature-based climate solutions and environmental data collection methods while contributing to a greener future in the Solent region and beyond.

ECO-CONSCIOUS ROOF UPGRADE

The recent installation of Europe's largest zinc roof at our Southampton site has delivered positive environmental improvements.

Not only has it enhanced the building's energy efficiency to EPC Grade C, but the use of ecological, durable, and 100% recyclable materials reflects our strong commitment to sustainability and environmental responsibility.

This achievement exemplifies our dedication to making eco-conscious choices while maintaining the highest standards in construction and design.



The vast NOC Southampton roof before its recent upgrade

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The Fit for Future project is transforming our built environment

BUSINESS+CULTURE

Our commitment to sustainable business operations extends to responsible procurement, ethical governance, and promoting awareness and good governance within its workforce.

By prioritising these aspects of business operations, we not only set a positive example for others but also ensures the long-term resilience and capacity to fulfil our scientific mission.

One of the many spaces being transformed as we look to the future

FIT FOR FUTURE

The Fit For Future project has begun to transform our Southampton site into an inspiring, future-ready space for staff to work and bring out their best.

Leveraging advanced tech hardware and software, we have created collaborative zones that encourage cross-functional teamwork and spark creative thinking.

The project's aim was to adapt to post-pandemic working styles and promote sustainability, unity, and creativity. This innovative environment now not only serves as an exceptional workplace but also showcases the NOC's commitment to excellence.

CYBER ESSENTIALS ACCREDITATION

The attainment of Cyber Essentials accreditation this year marks a significant milestone in our ongoing commitment to safeguarding our digital assets and ensuring the security of our information and services. It demonstrates our unwavering dedication to maintaining the highest standards of cybersecurity.

In addition, successful IT network upgrades on both vessels have bolstered compliance with marine industry rules and data security standards. Aligned with cybersecurity benchmarks such as NIST and ISO27001, these enhancements fortify protection against cyber threats, safeguarding research data integrity.

This achievement is attributed to the dedication, hard work, and adaptability of contractors, suppliers and crew who met stringent vessel refit schedules **LEARN MORE: CYBER SECURITY AND DATA PROTECTION - PAGE 91**.

Cyber Essentials is a key milestone in protecting the NOC

Our commitment include vetting suppliers and site visits

© Mauricio Gutiérrez

SUSTAINABLE PROCUREMENT

At Ocean Business 2023, we engaged with our top ten suppliers to talk to them about the new Sustainable Procurement Strategy and how we can work together to achieve its aims. This represented £5.1m of NOC supply chain spend in FY2021/22.

Together, we emphasised the need to prioritise eco-friendly practices and foster collaborative efforts to minimise environmental impacts. The outcomes of these discussions were promising, revealing our suppliers' strong dedication to sustainability. Their willingness to collaborate with us represents a significant stride toward embedding sustainable practices across our supply chain, fostering positive change in the marine science and research field.

INVESTING FOR THE FUTURE

Our new Investment Committee will ensure that we have the reserves and investments required for long-term success and to meet the strategic objectives of the organisation.

The Unrestricted reserves will be monitored by the Committee, and they will ensure they are also invested in accordance with our strategic objectives and charitable purpose.

The investment plan for Unrestricted reserves will be drawn up by the Committee and regularly reviewed.

TACKLING MODERN SLAVERY

In our annual Modern Slavery statement review, we enhanced our approach by benchmarking against best practices. We identified areas for improvement and enacted a successful action plan.

Key achievements included a 25% reduction in international suppliers aimed to strengthen our supply chain assurance and having 99% of all purchases go through our Procurement Team in order to ensure we know who we do business with. We conducted comprehensive Modern Slavery Awareness training at divisional meetings, covering the definitions, risks, NOC's actions, and warning signs of modern slavery and human trafficking and there was additional engagement via a NOC intranet news story available to all NOC employees.

LEARN MORE ABOUT RELATED ARRANGEMENTS WHICH SUPPORT OUR INTEGRITY AND ETHICS: GOVERNANCE ARRANGEMENTS - PAGE 91.

Staff enjoying the garden games at Summer Celebration 2023

Our research studies the chemical processes driving the storage of carbon in the ocean

RESEARCH+CULTURE

We are committed to ensuring our stakeholders will have trust and confidence in all our results, the methods used and the processes by which these results were obtained.

We will commit to ensuring that there is trust and confidence in the academic integrity of those who undertake our research.

ETHICAL RESEARCH TRAINING

Our Research Integrity course, a new addition to the standard compulsory induction for all incoming research staff, provides essential guidance on ethical research practices.

We've ensured current staff also benefit from this training by delivering numerous dedicated sessions.

This initiative underscores our commitment to maintaining the highest standards of integrity, honesty, and ethical conduct in our research endeavours.

We believe that nurturing a culture of research integrity not only upholds our reputation but also fosters trust and collaboration within our research community, promoting the responsible and ethical pursuit of knowledge.

LEARN MORE ABOUT OUR ETHICS AND RESEARCH INTEGRITY FRAMEWORK: SECTION 172 STATEMENT - PAGE 95.

Training can take non-conventional routes to inspire new ideas and thinking

RESEARCH PAPERS: A STATISTICAL SNAPSHOT

183
RESEARCH PAPERS PRODUCED

157 - 86%
GOLDEN OPEN ACCESS

26 - 14%
GREEN OPEN ACCESS

28
NON COMPLIANT RESEARCH PAPERS

Engaging with the wider community and sharing our innovations during a visit from UKRI

MANAGEMENT, STRUCTURE AND GOVERNANCE

OVERVIEW

NOC was incorporated on 2 July 2018 as a charitable company limited by guarantee and commenced trading on 1 November 2019. It is registered as a charity with the Charity Commission in England & Wales and the Scottish Charity Regulator and is governed by articles of association in accordance with the Companies Act 2006.

OUR BOARD

ORGANISATIONAL STRUCTURE AND DECISION-MAKING POLICIES - BOARD OF TRUSTEES

NOC's Board of Trustees, who are also Non-Executive Directors for the purposes of company law, have overall responsibility for ensuring that NOC is carrying out its purpose for the public benefit; the continued financial viability of the organisation; and for ensuring that we meet all of our legal and compliance requirements. The Trustees oversee the day-to-day delivery of NOC's strategy which is led by the Executive Committee. Trustee Directors are appointed by the existing Trustee Directors for a term of three years and are eligible for re-appointment for a further three years. The Board of Trustees during the financial year was as follows:

CHAIR

Sir Jeremy Darroch

DIRECTORS

Dr Ruth Boumphrey
Professor Sir Ian Boyd
David Gee
Daniel Hook
Sarah Kenny OBE
Dr Sarah McMath

DELEGATION OF DECISION MAKING - EXECUTIVE COMMITTEE

The Board delegates the day-to-day leadership and operations of NOC to its Executive Committee, which is made up of the Chief Executive Officer; the Chief Operating Officer/ Chief Financial Officer; the Director, Data, Science and Technology; and six Associate Directors. The Executive Committee meets monthly, reviewing progress against NOC's goals; the KPIs set by the Board; and both current and longer-term priorities for the organisation. The Board has approved a formal Statement of Delegations for the Executive Committee to allow them to conduct the business of the organisation effectively. During the financial year, the Board approved an updated Executive Roles and Responsibilities framework, setting out accountabilities for each member of the Executive Committee.

BOARD MEETINGS

The NOC Board meets formally at least quarterly. Standing items covered in Board meetings include strategy, performance, risk and compliance, and sustainability and social responsibility. The Executive reports quarterly to the Board on progress against KPIs set at the start of the financial year, which cover each of NOC's goals. A strategic away day with the Board and wider Executive Team identified key strategic areas for development including Digital Ocean, commercialisation, autonomy and science areas identified for strategic growth. Other activities included providing advice and guidance for moving NOC to a more active role as an ocean advocate and reviewing and approving the business case for the commercialisation of NOC's trading subsidiary.

DELEGATION OF DECISION MAKING - COMMITTEES

The Board of Trustees has established four formal committees: the Audit & Risk Committee; the Nominations Committee; the Remuneration Committee; and the Scientific and Technology Advisory Committee. Their role is to undertake detailed scrutiny of specific subject matters and to make recommendations on those topics. The committees are Chaired by a Trustee Director appointed by the Board and report directly to the Board. The constitution of the committees and their respective Terms of Reference are reviewed at least annually.

AUDIT AND RISK COMMITTEE

The Audit and Risk Committee is chaired by David Gee and meets quarterly. On behalf of the Board, it has overall responsibility for financial reporting and controls; risk management; audit; and whistle-blowing. The committee acts independently from the NOC Executive, to ensure that the interests of the charity are properly protected and to ensure the integrity of the company financial reporting. Standing items within the agenda include cyber security and GDPR. Each quarter the committee also completes a deep dive into one of the strategic risks being managed across the business. During 2022/23 the committee reviewed our due diligence approach for decision-making, for the work being completed by NOC Innovations and they have provided feedback on our budgeting and business planning approaches.

REMUNERATION COMMITTEE

The Remuneration Committee is chaired by Sarah Kenny OBE, and meets quarterly.

It provides a forum for developing policy on trustee and executive remuneration; to recommend levels of remuneration for Directors; and to review the remuneration policy and reward package for all employees. It oversees any major changes in the employee benefits structure throughout the organisation. During 2022/23, the committee advised on the development of a Career Pathways Framework, this has included a new leadership and behavioural framework, career development and organisational re-grading tool-kits. The committee also reviewed and approved Executive pay and performance.

NOMINATION COMMITTEE

The Nomination Committee has the role of leading the process for Board appointments and making recommendations to the Board and meets at least twice a year. It is chaired by Sir Jeremy Darroch and is responsible for long-term succession planning for future trustees, seeking to ensure there is a formal, rigorous, and transparent procedure for the appointment of new directors to the Board and reviewing and evaluating the balance of skills, knowledge, experience and diversity on the board. The Board analyses the capabilities of the existing Trustee Directors using a skills matrix, which is reviewed annually. The committee had oversight of the recruitment and appointment of the new Chair of Trustees. The committee has started the recruitment process for new trustees to join the organisation.

SCIENCE AND TECHNOLOGY ADVISORY COMMITTEE

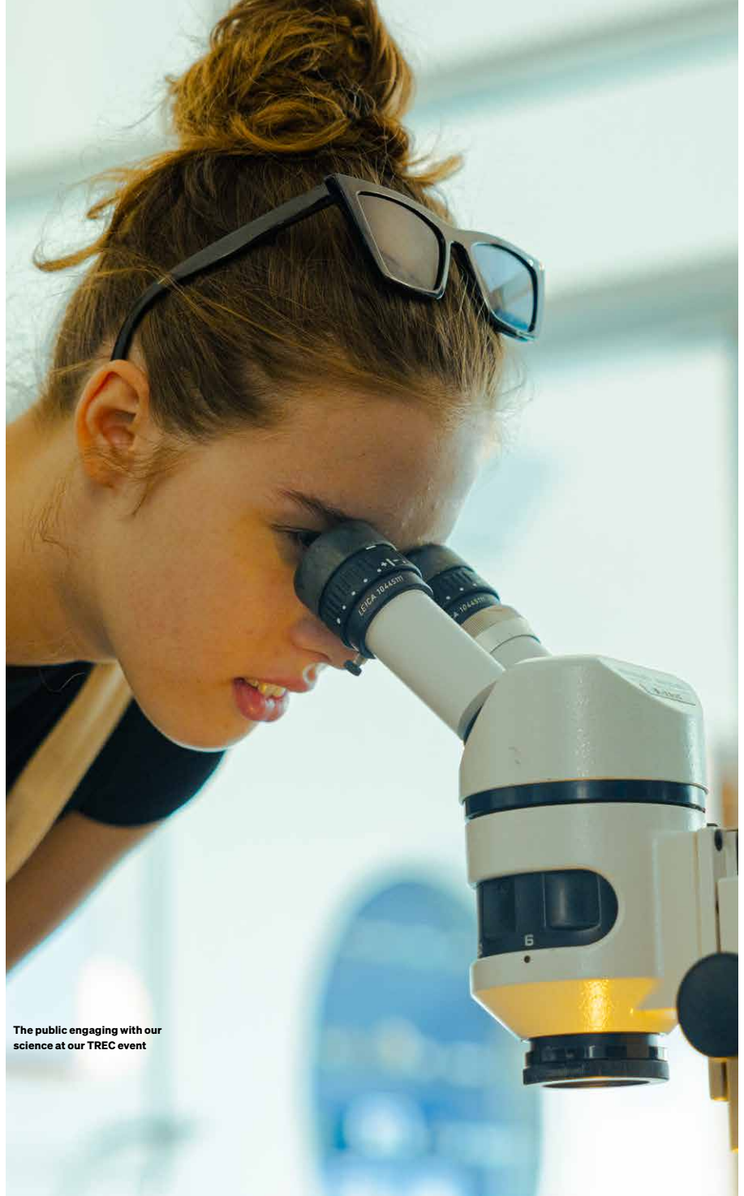
The Science and Technology Advisory Committee is chaired by Professor Sir Ian Boyd. Its remit is to provide independent advice to support the Board of Trustees and the Director Science & Technology in their responsibilities for development and delivery of the research strategy for NOC and on sustaining the quality and impact of NOC's research performance, its research environment and the health of its intellectual capital base. The committee is chaired by a member of the NOC Board and has a membership of no more than 10 people with expertise covering the breadth of NOC's main areas of scientific research and technology development. Members are drawn from outside NOC, taking due consideration of diversity, and bringing stakeholder and international perspectives commensurate with NOC's role as one of a relatively small number of large-scale oceanographic institutions in the world.

TRUSTEES' INDEMNITIES

Under NOC's governing documents, directors and former directors are entitled to an indemnity against liability incurred by them to a third party in the proper performance of their duties as a director or officer of NOC. The governing document also gives NOC powers to provide indemnity insurance for the Trustees in respect of liability arising from breach of trust or duty, negligence, subject to the conditions of s.189 of the Charities Act 2011 (which excludes from such insurance any criminal and regulatory fines and penalties). NOC maintains such insurance for the Trustees, with an annual cap on liability.

PAY POLICY FOR SENIOR STAFF

This year one Trustee received remuneration as disclosed under note 7 to the financial statements. Details of Trustees' expenses incurred in the course of their duties and reimbursed are disclosed under note 7. The Remuneration Committee has responsibility for developing, implementing and reviewing the remuneration, considering market



The public engaging with our science at our TREC event

value; performance; capabilities, values and leadership behaviours, and using up to date and relevant comparative salary information. The Chair of the Remuneration Committee recommends the remuneration package of the Chief Executive Officer to the Chair of the Board, who in turn reports to the Board.

INDUCTION AND TRAINING OF TRUSTEES

As part of our on-boarding process, new Trustees receive an induction to introduce them to our work, which includes an introduction to each member of the Executive team, presentations, tours and meeting various colleagues to learn about the different functions of NOC. NOC also provides a trustee handbook with guidance on both NOC itself, and on charity governance requirements. This year the Chartered Governance Institute (CGI) provided refresher training to all of our Trustees and a number of our staff to help remind us all of the role of the Trustees and to provide an overview to charity Governance.

REVIEW OF BOARD PERFORMANCE

During the spring of 2022 we worked with an external provider to undertake a Board Effectiveness review. The results were discussed with the Board of Trustees at our annual Board review meeting in September 2022. The outcomes of the review were extremely positive, giving us confidence that the Board of Trustees and Executive are working effectively to deliver our purpose. An action list for areas of suggested improvements has been put into place during the year. In August 2023 an internal review of Board Effectiveness was also undertaken with input from Trustees with the outputs of this meeting used to inform the Board's further areas of focus for the next financial year.

SUBSIDIARY GOVERNANCE AND RELATED PARTIES

NOC's wholly owned subsidiary, National Oceanography Centre Innovations Limited ('NOC Innovations'), was established in 2019 as a private limited company. Its role is to undertake more applied and commercial work, to facilitate knowledge exchange and encourage innovation. It has covenanted to donate to NOC all profits earned which it may legally donate and to re-claim gift aid on its profits to NOC. The NOC Innovations Board is chaired by David Gee, and its other directors are members of the Executive Committee. The NOC Innovations Board meets quarterly. Its Associate Director, Huw Gullick, provides regular updates to the NOC Board of Trustees on the activities and financial reporting of NOC Innovations. NOC is eligible to bid for funding from UKRI, including the Natural Environment Research Council (NERC). NOC manages the National Capability funding on behalf of NERC working in partnership with marine centres throughout the UK.

MEMBERS OF THE NOC AND LIABILITY

The Members of the Charity are the Trustee Directors. They guarantee to contribute an amount not exceeding £1 to the assets of the Charity in the event of winding up.

DISCLOSURE OF INFORMATION TO AUDITOR

Each of the persons who are Trustees at the time when this Trustees' Report was approved has confirmed that: so far as that Trustee is aware, there is no relevant audit information of which the charitable company's auditor is unaware; and that Trustee have taken all the steps that ought to have been taken by the Trustees in order to be aware of any relevant audit information and to establish that the charitable company's auditor is aware of that info.

OUR STAKEHOLDERS

During the year, NOC has continued developing formal framework for engagement with stakeholders, led by the Executive Committee, with the Board being briefed on and involved with setting the strategy.

The Board reviewed its interaction with stakeholders, and that of NOC as a whole, as part of its annual Board Effectiveness review in August 23 and is developing actions to embed and extend stakeholder engagement further during the next financial year.

SCIENTISTS, ENGINEERS AND RESEARCHERS

Enabling scientists and researchers is one of our core goals, with activities including;

- operating research ships;
  SHIPS FOR GLOBAL SCIENCE - PAGE 44
- providing key data, and;
  ENHANCING NEAR-REAL-TIME OCEAN DATA SHARING - PAGE 32
- marine robotics facilities.
  GLIDERS REVOLUTIONISE CLIMATE DATA COLLECTION - PAGE 31

MARINE RESEARCH ORGANISATIONS AND PUBLIC AUTHORITIES

We are the hub of many marine networks, providing us with a position of authority and influence, including through;

- the NOC Association of Marine National Capability Beneficiaries;
- the Marine Facilities Advisory Board, and;
- the Cruise Programme Review Group, which provide formal feedback to us from beneficiaries around major areas of our activities.

Our work allows collaborative relationships with national and international marine institutions, as well as government.

OCEAN TAKES CENTRE STAGE AT UN CLIMATE CONFERENCE - PAGE 52

PUBLIC IN THE UK AND WORLDWIDE

By embracing digital technology and hybrid opportunities we have continued to expand our public engagement. We hosted live in-person events and have invested in collaborations with prestigious museums.

SOLENT COMMUNITY ENGAGES IN COASTAL EXPLORATION - PAGE 42
SET YOUR SIGHTS ON BOATY MCBOATFACE - PAGE 36

OUR EMPLOYEES

We continue to be driven by our values, engaging with our people; Trade Unions; and developing our Equality, Diversity and Inclusion approach.

PEOPLE+CULTURE, PAGE 64

YOUNG PEOPLE AND STUDENTS

We continue to work closely with universities, including the Universities of Southampton and Liverpool, and collaborate with schools within our local area and wider.

INSPIRING STEM ENGAGEMENT - PAGE 41

OUR FUNDERS

We regularly engage with funders day to day through the delivery of projects, as well as through more formal interactions with Board Observers from UKRI-NERC and strategic meetings.

OUR BOARD - PAGE 85

OUR SUPPLIERS

Our Procurement team engage with suppliers from tender stage to delivery, building good relationships and high standards.

BUSINESS+CULTURE- PAGE 78

OUR EXECUTIVE COMMITTEE

PROFESSOR ED HILL CBE
CHIEF EXECUTIVE

JULIE PRINGLE-STEWART
CHIEF OPERATING OFFICER AND CHIEF FINANCIAL OFFICER

DR JOHN SIDDORN
DIRECTOR OF DATA, SCIENCE & TECHNOLOGY AND CHIEF SCIENTIST

DR MAATEN FURLONG
ASSOCIATE DIRECTOR FOR NATIONAL MARINE FACILITIES

DR JON BLOWER
ASSOCIATE DIRECTOR FOR DIGITAL OCEAN

NATALIE CAMPBELL
ASSOCIATE DIRECTOR FOR CORPORATE BUSINESS SUPPORT

PROFESSOR DOUG CONNELLY
ASSOCIATE DIRECTOR FOR SCIENCE & TECHNOLOGY

HUW GULLICK
ASSOCIATE DIRECTOR FOR NOC INNOVATIONS & ENGAGEMENT

PROFESSOR PENNY HOLLIDAY
ASSOCIATE DIRECTOR FOR NATIONAL CAPABILITY SCIENCE

OUR BOARD OF TRUSTEES

SIR JEREMY DARROCH
CHAIR OF THE BOARD
For 14 years, Jeremy was instrumental in leading Sky into a new era of environmental awareness with a substantial commitment to environmental sustainability. He helped launch major initiatives designed to bring awareness to the challenges facing the environment. Jeremy was knighted in 2023 for his services to business, charity and sustainability.

DAVID GEE
AUDIT AND RISK COMMITTEE CHAIR
David is a strategically orientated senior business manager and finance professional with a focus on value creation with a proven track record of strategic definition and management.

SARAH KENNY OBE
REMUNERATION COMMITTEE CHAIR
Sarah is the Chief Executive Officer at the BMT Group, a leading international multi-disciplinary engineering, science and technology consultancy offering a broad range of services, particularly in the defence, energy, environment, shipping and ports and logistics sectors.

NOC EXECUTIVE ATTENDEES

Professor Ed Hill CBE

Julie Pringle-Stewart, Company Secretary

Dr John Siddorn

Professor Angela Hatton

DR RUTH BOUMPHREY
Ruth is the Chief Executive Officer at Lloyd's Register Foundation, a global charity protecting life and property and supporting education, engineering-related research and public engagement.

PROFESSOR SIR IAN BOYD FRS
Ian is a marine and polar scientist who was Chief Scientific Adviser to the UK Government on Food and the Environment. He is currently a Professor at the University of St Andrews and the Chairman of the UK Research Integrity Office.

OBSERVERS

NERC
Alison Robinson

NOC Association
Mark Inall

DANIEL HOOK
Dan is a Naval Architect and Chartered Engineer with over 18 years' experience in the marine industry. Dan worked on the development, testing and trials of a wide range of specialist craft. He is now the Co-CEO at RAD Propulsion as well as a consultant at Ocean Infinity and Director of several start-up marine tech companies.

DR SARAH MCMATH
Sarah is the Chief Executive Officer of Market Operator Services Ltd (MOSL) which allows 1.2 million businesses, public sector bodies, charity and not-for-profit organisations in England to choose who provides their water retail services.

GOVERNANCE ARRANGEMENTS

GOVERNANCE FRAMEWORK

We continue to improve and evolve our governance framework in line with the evolving needs of the organisation. Our framework is comprised of three areas: our policies, our statement of delegation and our committees that support and have oversight of our operations. Our internal audit programme continues to provide assurance and feedback on the effectiveness of, and how our governance enables and supports the organisation.

This year we established a project to review all the policies developed at the time we became independent from government. The aim of this review is to understand if the controls are effective and also, importantly, whether they are enabling our day-to-day operations. This will allow our professional heads across the business to update and improve our ways of working. The project is due for completion in summer 2024.

CYBER SECURITY AND DATA PROTECTION

Our Cyber Security has been significantly enhanced this year with investment in our networks and infrastructure. We were delighted to receive Cyber Essentials Accreditation **LEARN MORE: BUSINESS+CULTURE- PAGE 78** and to have delivered a new Information Security (IS) Policy for the organisation. We now partner with an external provider to further enhance our security with our systems, monitored 24 hours a day, 7 days a week, to provide a constant proactive security presence. We adopted the Centre for Security Controls standards to benchmark ourselves and to provide a prescriptive approach to continuous improvement that aligns with best practices. We also procured and now successfully manage our own IS/Cyber Security training platform, which we use to report on a regular basis to NOC Audit and Risk Committee, Associate Directors and Group Heads for the non-completion of training by staff. Since implementing the platform we have seen an increase from 75% to 97% overall completion rates of the mandatory IS/Cyber modules for users who are registered with a NOC account. There have been 0 IS/Cyber incidents that have affected NOC's regulatory obligations.

This year the NOC governance team have sourced an external provider to deliver Information Governance training going forward. This will become part of the NOC induction and on-boarding package, with refresher training to be rolled out for staff throughout the year. The Head of Legal and Governance has completed a review of our IS Policy and procedures and we now have an action plan for a project to update our ways of working during the next financial year. There were no reportable data protection breaches during the financial year.

RISK MANAGEMENT

The Trustees keep oversight of the strategic risks that the organisation faces and provide their guidance and their position with regards to our risk tolerances. This year we have considered how we can improve ease of use and understanding of our risk approaches, looking to align ways of working with other areas of the organisation such as learning from our Health & Safety practices. Our risk management approach is explained to all new starters across the organisation and is embedded well as part of our operational committee meetings. We continue to take feedback from the organisation and tested our understanding of risk via an internal audit and a pulse survey.

ETHICS, SAFEGUARDING AND CONFLICTS OF INTEREST

Research Integrity continues to be a focus for NOC, and we have reviewed and updated our policy and created Research Integrity Training for all of our research staff **LEARN MORE: RESEARCH+CULTURE - PAGE 82**.

DUE DILIGENCE

We continue to improve and evolve our approach to Due Diligence, to enable effective decision-making and to manage our risks. This year the Audit & Risk Committee completed an audit of the approach to counter party due diligence which was undertaken prior to NOC and/or National Oceanography Centre Innovations Limited (NOC Innovations) entering into an agreement with a third party, testing and ensuring our critical assurance approach is effective. This year we made the decision to create a new professional group within Corporate Support to lead and develop our approach to Assurance and Due Diligence. This is a significant area for our organisation that needs central oversight to help coordinate and support everyone throughout the organisation. Next financial year we aim to define and deliver a new assurance service provision to support all at NOC.

For details of how we're improving due diligence in our supply chain **LEARN MORE: BUSINESS+CULTURE- PAGE 78**, how we've established a new Investment Committee and went above and beyond to improve our approach to Modern Slavery. There were no externally reportable conflicts of interest and no significant governance or control issues during the financial year.

The crew of the RRS *Discovery* during the visit to Discovery Point, Dundee

REFERENCE & ADMINISTRATIVE DETAILS

COMPANY REGISTERED NO.
11444362

CHARITY REGISTERED NO.
1185265 and SC049896

REGISTERED OFFICE
National Oceanography Centre
European Way
Southampton
SO14 3ZH

CHAIR
Sir Jeremy Darroch

DIRECTORS & TRUSTEES
Sir Jeremy Darroch
Chair

Professor Sir Ian L Boyd

Dr Ruth Boumphrey

Sarah Kenny OBE

Dr Sarah McMath

David Gee

Daniel Hook

INDEPENDENT AUDITOR
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Water Lane
Leeds
LS11 5DR

SENIOR MANAGEMENT
Professor Ed Hill CBE
Chief Executive

Julie Pringle-Stewart
Chief Operating Officer,
Chief Financial Officer
and Company Secretary

Dr John Siddorn
Director of Data, Science &
Technology and Chief Scientist

Dr Maaten Furlong
Associate Director for
National Marine Facilities

Dr Jon Blower
Associate Director for
Digital Ocean

Natalie Campbell
Associate Director for
Corporate Business Support

Professor Doug Connelly
Associate Director for
Science & Technology

Huw Gullick
Associate Director for National
Oceanography Centre: Innovations Ltd
and Associate Director for Engagement

Professor Penny Holliday
Associate Director for
National Capability Science

Danielle Rossiter Head of Finance

Matt Eades Head of People and Skill

BANK
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Templars Way
Chandlers Ford
SO53 3RY

TAX ADVISORS
BDO LLP
Level 12, Thames Tower
Reading
Berkshire
RG1 1LX

SECTION 172 STATEMENT

The NOC Board of Trustees have acted in a way that they consider to be in good faith, that would be most likely to promote the success of the company for the benefit of its members as a whole, and in doing so have regard to the matters set out in s172(1)(a-f) of the Companies Act 2006, in the decisions taken during the year.

The Board of Trustees are briefed on their legal duties as part of their induction and are able to seek further advice from the Company Secretary, Head of Legal & Governance or access external independent advice if required.

STRATEGY AND CONSIDERATION OF THE CONSEQUENCE OF LONG-TERM DECISIONS

This year we took a strategic decision to evolve our brand to tell a more compelling story whilst clarifying our purpose and creating a distinctive look and feel, to enthuse, engage and enrol our stakeholders. We undertook a detailed analysis, interviewing our industry peers and colleagues to determine the 'old' brand equity and 'new' potential. The results have delivered a stronger charity brand to enable us to reach a wider audience, to boost our voice above the crowd and be the authority on the ocean. Our reinvigorated purpose unites us: To gain deeper knowledge of the ocean to help every living thing on our planet flourish.

We have now finished the third year of delivery of our five-year strategy "Defining our Future" which aims to preserve the very best of what we do and grow our work – exploring new depths; creating the most innovative technologies; being the most exciting place to learn and work. Throughout the year, decisions and considerations at Board meetings are consistently linked to how NOC meet its strategic objectives and how NOC can build and develop further to the environment around and in turn, contribute further to achieving public benefit.

Decisions are underpinned by a detailed business plan, with budgets built from funded projects and forecasts across the following 5 years, based on experience of research funding; pipeline research areas; and market research on future areas of growth.

The Board also considers the longer-term prospects and funding landscape for NOC, taking into account expected changes in technology and skills required and types of research and data analysis to be undertaken in the next 10-15 years, and conscious of NOC's aim to diversify income over the longer term.

SUSTAINABILITY AND SOCIAL RESPONSIBILITY

As a registered charity with public benefit at the heart of the organisation, NOC's aim is to make a positive contribution to society by advancing ocean science and education, supported by continuing substantial public research investment. As the national centre and a world leader in marine science, NOC's aim is to lead by example.

We have now finished the second year of delivery of our Sustainability and Social Responsibility (SSR) Strategy, which we've celebrated in Section 3.6. The SSR Committee has met regularly within the organisation, leading strategic progress towards the pillars of People; Operations; Community; Environment; and Research. In its delivery of this plan, NOC is aiming to work to the principles of ISO 26000 Social Responsibility. The Board reviews SSR as part of its regular programme.

OUR PEOPLE

The Board considers that developing and maintaining good employee engagement and cementing NOC's reputation as an employer of choice, are fundamental to the delivery of the NOC Strategy.

This year we have focused on our ability to attract and retain the best talent. This has included making the decision to end the use of Fixed Term Appointment and to recruit open-ended contracts instead. We have continued to invest in our world-class manager programme recognising the importance of strong leadership as critical to staff experience **LEARN MORE: PEOPLE+CULTURE - PAGE 64**. The major programme of work this year has been the Career Pathways. This has included the creation of a Career development tool-kit and the framework itself has a new leadership and behavioural framework and an organisational re-grading tool-kit. We have maintained proactive engagement with the Trade Unions in setting pay for the year and reviewing our approach to allowances. We continue to engage employees through our Staff Focus Group and Open Staff Meetings, that continue to evolve based on the feedback we encourage.

We completed a Diversity, Equality and Inclusion employee survey. The outputs were shared with staff and the actions identified are being implemented and monitored through the "Culture Club." We launched the new diversity information on UNIT4 that will help us next year to work towards improving our information and data to help us have a better understanding of employee feedback. We continued to run Active Bystander training which has been undertaken by 41 employees.

Further detail on the comprehensive people-focused initiatives undertaken by NOC during the year, and overseen by the Board **LEARN MORE: PEOPLE+CULTURE, PAGE 64**.

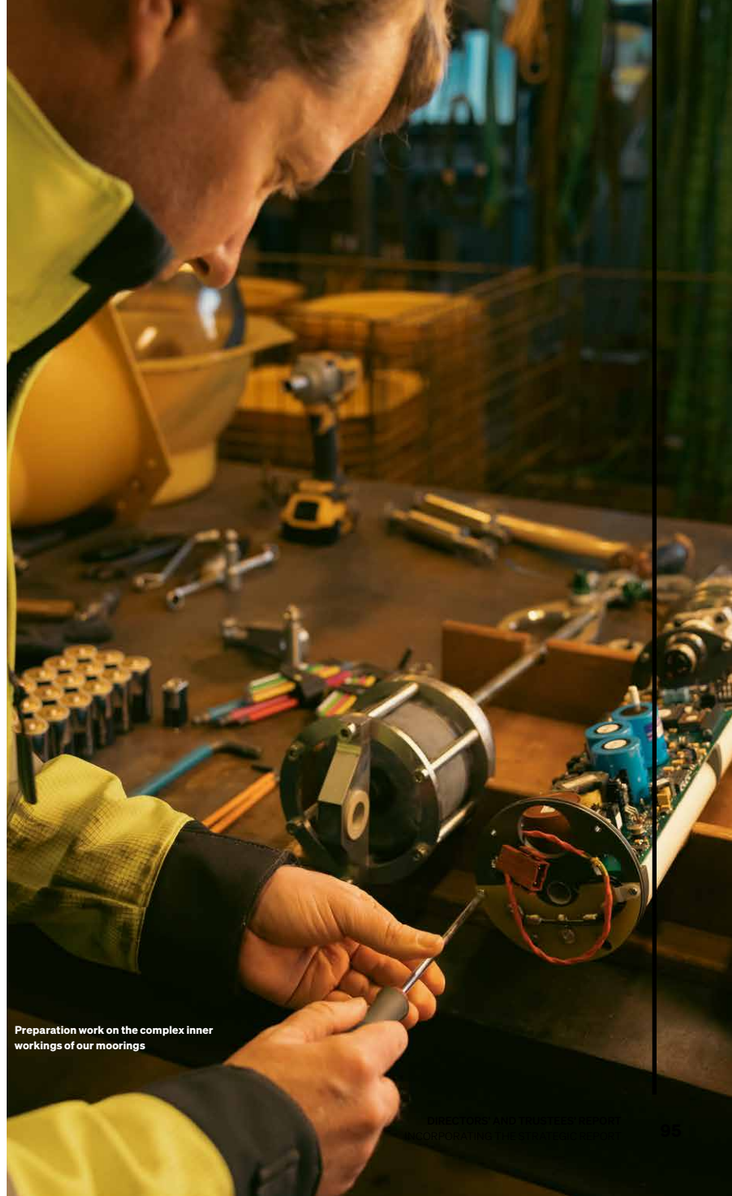
HIGH STANDARDS AND BUSINESS CONDUCT

NOC's values of Excellence, Innovative Thinking, Empowerment, Environmental Responsibility; Integrity; and Working in Partnership, underpin the way in which the Trustee Directors take decisions and set standards for the way in which the organisation operates. Through the delivery of our strategy, NOC's intention is to promote our reputation, reflecting responsible behaviour and maintaining high standards of business conduct **LEARN MORE: BUSINESS+CULTURE- PAGE 78**.

The Board reviews the NOC's Ethics & Research integrity frameworks annually. During the financial year, the Board has had oversight of the operation of the NOC's Ethics Committee, the remit of which is to review new business proposals against NOC's charitable purposes and objectives. NOC continues to be committed to following the Seven Principles of Public Life, which outline the ethical standards to which those working in the public sector are expected to adhere and which complement NOC's own values.

MEMBERS

The Trustee Directors are also the Members of NOC. The Directors, in consultation with the Executives, take decisions jointly, in accordance with company law, and regularly review any conflicts of interest they may have in their other capacities or wider activities.



Preparation work on the complex inner workings of our moorings

STREAMLINED ENERGY & CARBON REPORTING (SECR)

In line with our values and SSR strategy, we have undertaken several initiatives to mitigate our environmental impact, particularly in the areas of Greenhouse Gas emissions, waste reduction, and transportation **LEARN MORE: ENVIRONMENT+CULTURE - PAGE 74.**

In the fiscal year FY2022/23, our commitment to environmental responsibility remained at the forefront as we tracked and reported our carbon dioxide equivalent emissions (CO_2e). This year, we recorded a total of 18,354 tonnes CO_2e. To provide context for our pursuit of lower emissions, we reflect on the previous FY2021/22, when our total CO_2e emissions stood at 15,223 tonnes CO_2e. The increase seen over the FY is the result of an increase in business travel, commuting and buildings use as business practices move closer to pre-pandemic norms.

In 2022/23, our intensity ratio reached 0.34 (tCO_2e/m^2) and 339.67 ($kgCO_2e/m^2$) (refer to Table 1), while the previous year saw us at an intensity ratio of 0.28 (tCO_2e/m^2) and 281.64 ($kgCO_2e/m^2$) (refer to Table 1). These intensity ratios have changed to reflect greater post-pandemic use of the buildings.

Collectively, we have seen a 20.1% increase in our emissions from FY2021/22, reflecting the ongoing challenges we face as we strive to reduce our carbon footprint while sustaining our commitment to environmental stewardship.

EMISSION DETAILS

SCOPE 1 EMISSIONS

In the category of Scope 1 emissions, NOC is responsible for emissions resulting from gas combustion, which amounted to 969 tonnes of CO_2e, emissions from the consumption of fuel for ship transport, totalling 16,172 tonnes of CO_2e, and emissions resulting from fleet vehicles, which amounted to 18 tonnes of CO_2e. Scope 1 emissions total 17,160 tCO_2e.

The 24% increase in carbon emissions from our research ships compared to last FY can be attributed to their successful re-mobilisation for scientific deployment post-pandemic. Read Alternative Fuel Story to see how we're reducing the environmental impact of our ships whilst continuing critical ocean observations in pursuit of a thriving ocean.

The 48% decrease in emissions from our fleet vehicles compared to last FY shows the success of streamlining our operations, allowing for more efficient routes and reduced fuel consumption.

SCOPE 2 EMISSIONS

Additionally, in the Scope 2 emissions category, our annual emissions from the purchase of electricity for internal consumption amounted to 1147 tonnes of CO_2e, and our annual emissions from the purchase of heating at our Liverpool office amounted to 18 tonnes CO_2e. Scope 2 emissions total 1165 tCO_2e. We have moved onto a 100% green energy tariff **LEARN MORE: ECO-CONSCIOUS ROOF UPGRADE - PAGE 77**, to mitigate the carbon footprint associated with our purchased electricity.

SCOPE 3 EMISSIONS

Expanding our environmental impact assessment, Scope 3 emissions encompass a range of factors. These include emissions arising from water, business travel, which encapsulates rental cars, employee-owned vehicles, and air and rail travel emissions. Moreover, our commitment to responsible waste management is reflected in emissions from various waste practices such as incineration, landfill disposal, food waste management, anaerobic digestion, and recycling. Collectively, our approach to emissions evaluation extends to Scope 3, with a total emissions figure in this category of 15 tCO_2e reinforcing our dedication to sustainability and environmental awareness.

It's noteworthy to emphasise that while there has been a surge in business travel, it only accounts for a mere 0.07% of our total carbon footprint.

We've witnessed a commendable increase in our recycling rates, a trend that aligns with our sustainability objectives and signifies progress in the right direction. To find out more about our accredited laboratories **LEARN MORE: LABORATORY EFFICIENCY ASSESSMENT FRAMEWORK - PAGE 75**.

SOURCES OF EMISSIONS

GAS USE FOR HEATING

The annual energy consumption attributed to gas combustion, for which the organisation is responsible, was 5,310.28 m^3.

RRS *DISCOVERY* AND RRS *JAMES COOK* SHIP FUEL

RRS *Discovery* used 2,529 tonnes of ship fuel while RRS *James Cook* used 2,530 tonnes.

FLEET VEHICLE FUEL

For the consumption of fuel for fleet vehicles, we utilised 6,149 litres of diesel.

ELECTRICITY

The annual energy consumption resulting from electricity purchases for internal use was 5,299 kWh.

HEAT PURCHASED - LIVERPOOL

The annual consumption of heat purchased for our Liverpool office was 100 mWh.

BUSINESS TRAVEL

In the realm of Scope 3 emissions, our focus primarily revolves around business travel. This category encompasses emissions stemming from fuel utilization for business transportation. We spent £7,080 on vehicle fuel and drove 50,110 miles for business purposes.

WATER

In our operations, we used 10,667 litres of water in our office building.

WASTE (TABLE 2)

Shifting our focus to waste management, we conduct an extensive examination. This encompasses emissions stemming from diverse waste management methods, including incineration, landfill disposal, food waste management, anaerobic digestion, and recycling. Specifically, we recycled 93 tonnes of waste, directed 48 tonnes to heat recovery incineration, disposed of 19 tonnes in landfills, and processed 4 tonnes via anaerobic digestion, yielding renewable biogas.

ADDITIONAL REPORTING - AIR AND RAIL EMISSIONS (TABLE 3)

CO_2e data for rail and air travel related primarily to scientist attendance at conferences, scientific research trips, and essential operational travel for ship crews, scientists, and mariners was obtained from our transport provider.

EMISSIONS AND ENERGY DATA

We employed the following methodologies to calculate the disclosed information regarding emissions and energy data:

SCOPE 1 SOURCES

GAS USE FOR HEATING

Energy data collected from the main meters at our sites was converted into CO_2e using the UK Government GHG Conversion Factors for corporate reporting.

RRS DISCOVERY AND RRS JAMES COOK SHIP FUEL

Ship fuel data is reported by ship Captains and converted into CO_2e using carbon conversion factors for Marine Gas Oil.

FLEET VEHICLE FUEL

Transport data for fleet vehicles was compiled from our Logistics Group's turnover records and converted into CO_2e using carbon conversion factors for LPG and Diesel (100% mineral oil).

SCOPE 2 SOURCES

ELECTRICITY

Energy data collected from the main meters at our sites was converted into CO_2e using the UK Government GHG Conversion Factors for corporate reporting.

PURCHASED HEAT - LIVERPOOL

Energy data was collected from our Liverpool site meters and converted into CO_2e using the UK Government GHG Conversion Factors for corporate reporting.

SCOPE 3 SOURCES

BUSINESS TRAVEL

A third-party hire company provided us with the annual spending on fuel consumption, which we converted into litres using the cost of petrol per litre. We then calculated the CO_2e emissions by applying the emission factor for an average petrol car, as separate data for petrol and diesel were unavailable.

We calculated the transportation of employee-owned vehicles used for business travel by using the mileage claims from our Finance system. The total mileage was then converted into CO_2e emissions using the emission factor for an average car.

WASTE (TABLE 2)

Our approach to collecting data for Scope 3 waste management is rooted in meticulous scrutiny. We gather comprehensive information pertaining to waste practices, including incineration, landfill disposal, food waste management, anaerobic digestion, and recycling. Data is obtained from various sources, such as waste management reports, disposal records, and recycling statistics. Through rigorous data collection and analysis, we ensure a transparent and accountable assessment of our waste emissions, underscoring our commitment to environmentally responsible practices.

ADDITIONAL REPORTING - AIR AND RAIL EMISSIONS (TABLE 3)

CO_2e data for rail and air travel related primarily to scientist attendance at conferences, scientific research trips, and essential operational travel for staff, ship crews, scientists, and mariners was obtained from our travel provider.

TABLE 1: PRINCIPAL SOURCES

UNITS	SCOPE	REPORTING YEAR 2021-22 SOUTHAMPTON	LIVERPOOL	TOTAL	REPORTING YEAR 2022-23 SOUTHAMPTON	LIVERPOOL	TOTAL
Gas Consumption m^3	1	5,394.96	-	**5,394.96**	5,310.28	-	**5,310.28**
RRS *Discovery* Fuel tonnes	1	2,762.40	-	**2,762.40**	2,529.00	-	**2,529.00**
RRS *James Cook* Fuel tonnes	1	1,657.00	-	**1,657.00**	2,530.00	-	**2,530.00**
Fleet Vehicles Fuel litres	1	-	-	**11,637.01**	6,149.00	-	**6,149.00**
Gas Used for Transport Purposes- Fleet Vehicles tonnes	1	-	-	**1.30**	0.61	-	**0.61**
Electricity kWh	2	4,931.72	318.59	**5,250.31**	4,996.00	303.00	**5,299.00**
Heat Purchased for Own Use (CHP/District Heating) mWh	2	-	103.12	**103.12**	-	100.03	**100.03**
Business Travel - Rental Car Fuel £GBP	3	-	-	**-**	-	-	**7,080.00**
Fuel Used for Business Transport - Employee Owned Vehicles miles	3	-	-	**252.69**	-	-	**50,110.14**
Metred Mains Water Consumption and Waste Water m^3	3	10,158.00	500.00	**10,658.00**	10,338.00	329.00	**10,667.00**
RESULTING EMISSIONS	**SCOPE**	**SOUTHAMPTON**	**LIVERPOOL**	**TOTAL**	**SOUTHAMPTON**	**LIVERPOOL**	**TOTAL**
Gas Consumption tonnes CO_2e	1	988.14	-	**988.14**	969.34	-	**969.34**
RRS *Discovery* Fuel tonnes CO_2e	1	7,666.74	-	**7,666.74**	8,219.23	-	**8,219.23**
RRS *James Cook* Fuel tonnes CO_2e	1	5,385.23	-	**5,385.23**	7,953.32	-	**7,953.32**
Fleet Vehicles Fuel tonnes CO_2e	1	-	-	**35.22**	16.28	0.09	**16.37**
Gas Used for Transport Purposes- Fleet Vehicles tonnes CO_2e	1	-	-	**-**	1.82	-	**1.82**
Electricity tonnes CO_2e	2	1,047.15	67.65	**1,114.80**	1,083.96	62.78	**1,146.74**
Heat Purchased for Own Use (CHP/District Heating) tonnes CO_2e	2	-	18.82	**18.82**	-	18.32	**18.32**
Business Travel - Rental Car Fuel tonnes CO_2e	3	-	-	**8.52**	-	-	**11.09**
Fuel Used for Business Transport - Employee Owned Vehicles tonnes CO_2e	3	-	-	**0.74**	-	-	**13.44**
Metred Mains Water Consumption and Waste Water tonnes CO_2e	3	4.28	0.21	**4.49**	4.00	0.12	**4.12**
Total tonnes CO_2e			**-**	**15,222.70**	**-**	**-**	**18,353.79**
Floor Space m^2		51,234.80	2,800.00	**54,034.80**	51,234.80	2,800.00	**54,034.80**
Intensity Ratio tCO_2e/m^2		-	-	**0.28**	-	-	**0.34**
Intensity $kgCO_2e/m^2$		-	-	**281.72**	-	-	**339.67**

TABLE 2: ADDITIONAL REPORTING WASTE

	REPORTING YEAR 2021-22 SOUTHAMPTON	LIVERPOOL	TOTAL	REPORTING YEAR 2022-23 SOUTHAMPTON	LIVERPOOL	TOTAL
Incinerated Waste tonnes	39.36	0.37	**39.73**	48.02	0.36	**48.38**
Landfill tonnes	2.28	-	**2.28**	18.76	-	**18.76**
Anaerobic Digestion of Food Waste, Producing Renewable Biogas tonnes	3.24	-	**3.24**	4.25	-	**4.25**
Recycled tonnes	35.47	1.15	**36.62**	89.84	2.71	**92.55**
Total Emissions from Disposal of Waste Generated In Operations for which the Company Does Not Own or Control Scope 3 / tCO_2e		**Sub Total** tCO_2e	**2.72**		**Sub Total** tCO_2e	**11.49**

TABLE 3: ADDITIONAL REPORTING - AIR AND RAIL EMISSIONS

BUSINESS TRAVEL	REPORTING YEAR 2021-22 TOTAL	REPORTING YEAR 2022-23 TOTAL
Domestic Air emissions tCO_2e	**10.29**	**32.58**
Short-Haul Air tCO_2e	**51.63**	**123.12**
Long-Haul Air tCO_2e	**90.39**	**446.59**
International Air tCO_2e	**41.35**	**340.44**
Domestic Rail tCO_2e	**14.97**	**15.24**
International Rail tCO_2e	**0.09**	**0.13**
Travel Sub Total tCO_2e	**208.72**	**958.10**
Grand Total tCO_2e	**15,434.14**	**19,323.38**

RISK MANAGEMENT STATEMENT

NOC takes risks in pursuit of its strategic objectives within a pre-defined risk appetite. We maintain a thorough record of the risks arising from the activities of the organisation which is discussed regularly throughout the organisation.

Our Risk Management Framework provides management with the ability to anticipate the evolution of risks and the mitigations necessary to remain within appetite; to increase our resilience to change, and to reduce the threats and uncertainty faced by the organisation. It also supports management in the maximisation of opportunities by better facilitating informed decision-making whilst also providing assurance that the company taking steps to ensure it is operating within appetite.

The Executive play a lead role in identifying and managing risk throughout the organisation, acting as the escalation route for risks to the Executive, the Risk and Audit Committee and the Board of Trustees. The Board and management are aided by a Risk Management function providing oversight, advice, challenge, and guidance for the management of risk; support for risk reporting and the development of policies, procedures, regulatory compliance and training.

PRINCIPAL RISKS AND UNCERTAINTIES

The Board of Trustees and the Risk and Audit Committee provide essential and valued external challenge and advice through an ongoing assessment of the company's emerging and principal risks. Notably, our Board committees have provided challenge and support to management on the key risks impacting the company over the past 12 months. Principal amongst these risks have been:

- managing the risks associated with changes to the NOC's infrastructure, systems and controls put in place since independence to support the company as an organisation operating independently from government;
- continued challenges in the management of prevailing economic conditions characterised by high inflation especially for energy and raw materials;
- supply chain shortages and delays resulting from ongoing shortages of raw materials and as an outcome of the introduction of new import / export requirements as the UK adjusts to operating outside the EU;
- the ongoing challenges associated with the retention and recruitment of staff to ensure we remain competitive and as a result of barriers to continued reliance on talent based in the EU;
- ongoing management of the continuously evolving threat of cyber-attack through the implementation of available safeguards and recommended best practice whilst also maintaining access to the scientific data we manage and support the communities who access our IT estate; and
- NOC's goal to increase the diversity of its sources of funding against an uncertain landscape for funding from our traditional and largest sources.

NOC continues to evolve its Risk Management Framework in support of improvements in risk insights, accountability, and the future evolution of the organisation.

Autosub Hover 1 being prepared for a trial in Southampton

FINANCIAL REVIEW

RESULTS FOR THE YEAR

The net income and total increase to reserves for the year ended 30 September 2023 amounted to £229k (2022: £4,613k)

INCOME

Total income for the year for the group amounted to £85,401k (2022: £78,717k). The income was principally derived from UKRI-NERC funding for research, the operation of research infrastructure, data management and services and facilities of £61.6m (2022: £64.0m). A further £14.0m (2022: £9.1m) of other grant income was derived from other grants such as EU and GCRF funding.

EXPENDITURE

Total expenditure for the year amounted to £85,202k (2022: £74,093k). Staff costs accounted for £38,002k (45%) (2022: £35,055k, 48%) of expenditure in the year. The increase in staff costs compared to the prior year relates to the annual pay award.

RESERVES POSITION AND POLICY

NOC recorded a net increase in unrestricted reserves of £2,027k (2022: £6,506k increase) and a £1,411k increase (2022: £812k decrease) recorded in restricted reserves. This is due to the phasing of projects with income being earned on restricted projects and released as unrestricted funds to cover central overhead on projects. The restricted fixed asset reserves decreased by £3,239k (2022: £1,081k decrease) being the net of capital additions, capital disposals and depreciation charged during the year.

It is the policy of the Trustees to ensure that an amount is held in the unrestricted reserves to mitigate against operational risk likely to materialise over any 12-month period.

On commencing its activities, NOC's reserve policy was that a £2,000k unrestricted sustainability reserve is held for working capital to be grown by £6m over the next 5 years to cover the operational risk. In FY23 the financial and operational risk of the charity changed with some indemnities and guarantees from UKRI-NERC falling away. In addition, rising inflation saw the operational costs of the charity increase against a fixed committed income. In considering these changes the reserves policy has been agreed as unrestricted reserves to £7.5m needed as free cash for operational risk cover.

As at 30 September 2023 unrestricted reserves were £17,649k (2022: £15,622k). The planned investment of unrestricted reserves is set out in the Investment Policy below.

INVESTMENT POLICY

The investment policy ensures that unrestricted reserves earmarked for investment opportunities are agreed, prioritised and approved in line with the NOC Strategy and Business Plan. As well as ensuring the delivery of the associated benefits and enhanced capability, whether this is financial or qualitative or both.

NOC use the TRAC (Transparent Approach to Costing) FEC (Full Economic Cost) as the framework for pricing all contracts and projects and so ensuring it monitors its sustainability. Under TRAC there is the Margin for Sustainability and Investment (MSI) that is built into the FEC recovery that will contribute to the unrestricted reserves annually and then become the overall investment pot and provide ongoing risk cover. It is in the interests of the charity and the beneficiaries of NOC

£2,057k
INCREASE IN UNRESTRICTED RESERVES

£3.5m
COMMITTED INVESTMENT IN FY24

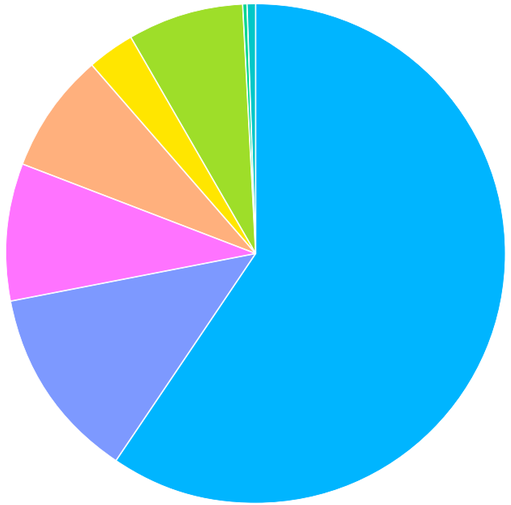


CHART 1: INCOME	£'000
Core Grant	50,825
Other UKRI Grant	10,787
Other Grant	7,480
EU Grant	6,567
NOC Innovations income	2,610
Trading income	6,380
Investment income	444
Other income	244
Donations	51
TOTAL INCOME	**85,388**

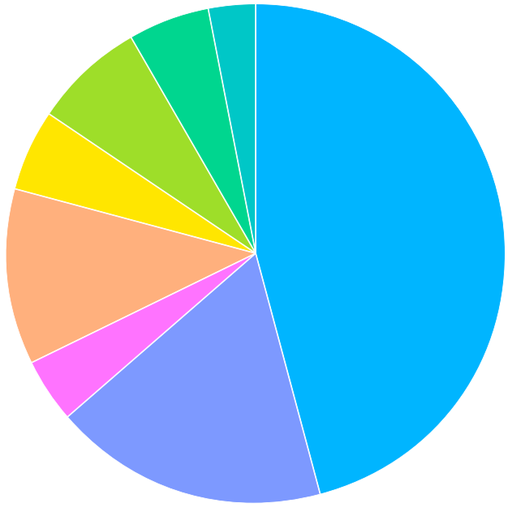


CHART 2: EXPENDITURE	£'000
Staff Costs	38,002
Vessel Costs	14,665
Research Equipment & Consumables	3,428
Research Services	9,386
Premises & Estate Costs	4,446
Administration Costs	5,993
Depreciation & Amortisation	4,320
Other costs	2,334
TOTAL EXPENDITURE	**82,574**

6
BUSINESS CASES APPROVED

£206k
VALUE OF BUSINESS CASES

to continue to invest in replacing assets as well as in new capability and further the aims of the charity in terms of its advance of science. TRAC requires that NOC does not hold too much in the sustainability reserve and encourages continual investment using the amount over the sustainability margin.

The continual investment is managed by the Finance and Investment Committee against a 5-year investment plan approved by the Board of Trustees. The Committee regularly invite staff to submit business cases for investment as part of the engagement with growth in new capability. In considering each case the Finance and Investment Committee ensures it is for the purposes of making a return as well as advancing the strategic aims and charitable objectives of NOC. Approved business cases will be kept under regular review for performance.

At the end of the FY23 year the committee had approved the use of £7.5m of unrestricted reserves. £4m of this is designated funds earned from revenue generating opportunities to be used for the running of the research ships. The £3.5m of approved investment opportunities were; £1.4m of core IT infrastructure, £1m investment into the autonomous capability and capacity at NOC, £850k to upgrade and replenish assets and £206 of approved business cases.

During the current year the Trustees approved investment of free and designated cash into cash deposits to mitigate against the rising costs due to inflation. Deposits placed yielded interest of £444k (2022: £18k) during the year.

TRADING SUBSIDIARY

NOC's trading subsidiary, National Oceanography Centre Innovations Limited, was incorporated on 9 October 2019 and is a wholly-owned subsidiary of NOC. In the year to 30 September 2022 the subsidiary reported a loss for the financial year of £4k (2022: loss £37k). NOCI has a strong opportunity pipeline and a high-level certainty that this will be converted to revenue and increase profits in FY24.

There is an Operating Agreement in place between the charity and the trading subsidiary to ensure there is a structured and governed relationship. This includes detailed clauses which ensure the protection of licensed IP for the charity.

The trading subsidiary undertakes four significant areas of activity; product sales (marine data products), Events (Commercial activity only), Intellectual Property licensing (agreements) and Marine Robotic Innovation Centre – membership and renewal.

The Chair of NOC Innovations reports to the NOC Board of Trustees. The Board of Trustees review the progress of the subsidiary, ensuring that the strategic objectives of the subsidiary are not in conflict with its own and that the financial return is satisfactory. One member of the NOC Board of Trustees is a member of the trading subsidiary board.

FUNDRAISING POLICY

NOC seeks to ensure all fundraising activity is conducted with due regard to the guidance of the Charity's Commission and the Fundraising Regulator. NOC has undertaken limited fundraising activity during the year to 30 September 2023. Going forward, NOC's approach to fundraising will be to seek support from charitable foundations, trusts and corporations through their foundations. In addition, there will be the opportunity for the public to donate via regular or one-off giving or supporting fundraising events.

GOING CONCERN

In assessing the ability of the NOC to continue as a going concern management have considered the future pipeline of income and costs to build a bottom up budget for the financial years 2024 – 2026. The income for FY24 is anticipated to be greater than the current year due to an extra award of National Capability and a strong pipeline of commercial opportunities which are highly likely to materialise. This profile of income is expected to continue cross the three-year period. The Large Research Infrastructure funding went through a mid-term commission review and NERC have agreed a funding approach for the next 4 years. The resource required for projects is covered by funded projects. Detailed resource planning is in place to inform recruitment with plans to continue to grow across FY24 -26.

Taking into consideration, signed Awards for National Capability infrastructure and science facilities and services, current indications of recommissioning for National Capability Science, previous success rates in research grant rounds with sustained bid submission and forecast of future income based on a strong commercial pipeline, indications are that NOC can continue to cover its managed cost base over the coming three-year period.

In conclusion there are no material uncertainties to cast doubt on NOC's ability to continue as a going concern.

AUDITOR

The auditor, BDO LLP, has indicated their willingness to continue in office. The designated Trustees will propose a motion reappointing the auditor at a meeting of the Trustees.

Approved by order of the members of the board of Trustees and signed on their behalf by

SIR JEREMY DARROCH
CHAIR OF BOARD OF TRUSTEES
13 DECEMBER 2023

STATEMENT OF TRUSTEES' RESPONSIBILITIES

The Trustees (who are also the directors of the Charity for the purposes of company law) are responsible for preparing the Trustees' Report including the Strategic Report and the financial statements in accordance with applicable law and United Kingdom Accounting Standards (United Kingdom Generally Accepted Accounting Practice).

Company law requires the Trustees to prepare financial statements for each financial year. Under company law the Trustees must not approve the financial statements unless they are satisfied that they give a true and fair view of the state of affairs of the Group and the Charity and of the incoming resources and application of resources, including the income and expenditure of the Group for that period. In preparing these financial statements, the Trustees are required to:

- select suitable accounting policies and then apply them consistently;
- observe the methods and principles in the Charities SORP;
- make judgements and accounting estimates that are reasonable and prudent;
- state whether applicable UK Accounting Standards have been followed, subject to any material departures disclosed and explained in the financial statements; and
- prepare the financial statements on the going concern basis unless it is inappropriate to presume that the Company will continue in business.

The Trustees are responsible for keeping adequate accounting records that are sufficient to show and explain the Charity's transactions and disclose with reasonable accuracy at any time the financial position of the Charity and enable them to ensure that the financial statements comply with the applicable accounting regulations. They are also responsible for safeguarding the assets of the Group and the Charity and hence for taking reasonable steps for the prevention and detection of fraud and other irregularities.

Financial statements are published on the Charity's website in accordance with legislation in the United Kingdom governing preparation and dissemination of financial statements, which may vary from legislation in other jurisdictions. The maintenance and integrity of the Charity's website is the responsibility of the trustees. The Trustees' responsibility also extends to the ongoing integrity of the financial statements contained therein.

Approved by order of the members of the board of Trustees and signed on their behalf by:

SIR JEREMY DARROCH
CHAIR OF BOARD OF TRUSTEES
13 DECEMBER 2023

Equipment developed by our Ocean Technology and Engineering(OTE) department being lowered into the dock

INDEPENDENT AUDITOR'S REPORT

TO THE MEMBERS AND TRUSTEES OF NATIONAL OCEANOGRAPHY CENTRE

OPINION ON THE FINANCIAL STATEMENTS

In our opinion the financial statements:

- give a true and fair view of the state of the Group's and of the Parent Charitable Company's affairs as at 30 September 2023 and of the Group's incoming resources and application of resources and the Parent Charitable Company's incoming resources and application of resources for the year then ended;
- have been properly prepared in accordance with United Kingdom Generally Accepted Accounting Practice; and
- have been prepared in accordance with the requirements of the Company's Act 2006, Charities and Trustee Investment (Scotland) Act 2005 and regulations 6 and 8 of the Charities Accounts (Scotland) Regulations 2006, as amended.

We have audited the financial statements National Oceanography Centre ("the Parent Charitable Company") and its subsidiary ("the Group") for the year ended 30 September 2023 which comprise the consolidated statement of financial activities, the consolidated and charity balance sheets, the consolidated statement of cash flows and notes to the financial statements, including a summary of significant accounting policies. The financial reporting framework that has been applied in their preparation is applicable law and United Kingdom Accounting Standards, including Financial Reporting Standard 102 The Financial Reporting Standard applicable in the UK and Republic of Ireland (United Kingdom Generally Accepted Accounting Practice).

BASIS FOR OPINION

We conducted our audit in accordance with International Standards on Auditing (UK) (ISAs (UK)) and applicable law. Our responsibilities under those standards are further described in the Auditor's responsibilities for the audit of the financial statements section of our report. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

INDEPENDENCE

We are independent of the Group and the Parent Charitable Company in accordance with the ethical requirements that are relevant to our audit of the financial statements in the UK, including the FRC's Ethical Standard, and we have fulfilled our other ethical responsibilities in accordance with these requirements.

CONCLUSIONS RELATING TO GOING CONCERN

In auditing the financial statements, we have concluded that the Trustees' use of the going concern basis of accounting in the preparation of the financial statements is appropriate.

Based on the work we have performed, we have not identified any material uncertainties relating to events or conditions that, individually or collectively, may cast significant doubt on the Group and the Parent Charitable Company's ability to continue as a going concern for a period of at least twelve months from when the financial statements are authorised for issue.

Our responsibilities and the responsibilities of the Trustees with respect to going concern are described in the relevant sections of this report.

OTHER INFORMATION

The Trustees are responsible for the other information. The other information comprises the information included in the Annual Report & financial statements, other than the financial statements and our auditor's report thereon. Our opinion on the financial statements does not cover the other information and, except to the extent otherwise explicitly stated in our report, we do not express any form of assurance conclusion thereon. Our responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the financial statements or our knowledge obtained in the course of the audit, or otherwise appears to be materially misstated. If we identify such material inconsistencies or apparent material misstatements, we are required to determine whether this gives rise to a material misstatement in the financial statements themselves. If, based on the work we have performed, we conclude that there is a material misstatement of this other information, we are required to report that fact.

We have nothing to report in this regard.

OTHER COMPANIES ACT 2006 REPORTING

In our opinion, based on the work undertaken in the course of the audit:

- the information given in the Trustees' Report, which includes the Directors' Report and the Strategic report prepared for the purposes of Company Law, for the financial year for which the financial statements are prepared is consistent with the financial statements; and

- the Strategic report and the Directors' Report, which are included in the Trustees' Report, have been prepared in accordance with applicable legal requirements.

In the light of the knowledge and understanding of the Group and the Parent Charitable Company and its environment obtained in the course of the audit, we have not identified material misstatement in the Strategic report or the Trustees' report.

We have nothing to report in respect of the following matters in relation to which the Companies Act 2006 and the Charities Accounts (Scotland) Regulations 2005 requires us to report to you if, in our opinion:

- proper and adequate accounting records have not been kept by the Parent Charitable Company, or returns adequate for our audit have not been received from branches not visited by us; or
- the Parent Charitable Company financial statements are not in agreement with the accounting records and returns; or
- certain disclosures of Directors' remuneration specified by law are not made; or
- we have not received all the information and explanations we require for our audit.

RESPONSIBILITIES OF TRUSTEES

As explained more fully in the Trustees' responsibilities statement, the Trustees (who are also the directors of the charitable company for the purposes of company law) are responsible for the preparation of the financial statements and for being satisfied that they give a true and fair view, and for such internal control as the Trustees determine is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, the Trustees are responsible for assessing the Group's and the Parent Charitable Company's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless the Trustees either intend to liquidate the Group or the Parent Charitable Company or to cease operations, or have no realistic alternative but to do so.

AUDITOR'S RESPONSIBILITIES FOR THE AUDIT OF THE FINANCIAL STATEMENTS

We have been appointed as auditor under 44(1)(c) of the Charities and Trustee Investment (Scotland) Act 2005 and the Companies Act 2006 and report in accordance with the Acts and relevant regulations made or having effect thereunder.

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with ISAs (UK) will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

EXTENT TO WHICH THE AUDIT WAS CAPABLE OF DETECTING IRREGULARITIES, INCLUDING FRAUD

Irregularities, including fraud, are instances of non-compliance with laws and regulations. We design procedures in line with our responsibilities, outlined above, to detect material misstatements in respect of irregularities, including fraud. The extent to which our procedures are capable of detecting irregularities, including fraud is detailed below:

NON-COMPLIANCE WITH LAWS AND REGULATIONS

Based on:

- Our understanding of the Group and Charitable Company and the sector in which it operates;
- Discussion with management and those charged with governance;
- Obtaining and understanding of the Group's and Charitable Company's policies and procedures regarding compliance with laws and regulations; and

We considered the significant laws and regulations to be the Companies Act 2006, Charity regulations in England and Scotland and UK tax legislation.

The Group and Charitable company is also subject to laws and regulations where the consequence of non-compliance could have a material effect on the amount or disclosures in the financial statements, for example through the imposition of fines or litigations. We identified such laws and regulations to be the health and safety legislation.

Our procedures in respect of the above included:

- Review of minutes of meeting of those charged with governance for any instances of non-compliance with laws and regulations;
- Review of correspondence with tax authorities for any instances of non-compliance with laws and regulations;
- Review of financial statement disclosures and agreeing to supporting documentation;

FRAUD

We assessed the susceptibility of the financial statements to material misstatement, including fraud. Our risk assessment procedures included:

- Enquiry with management and those charged with governance regarding any known or suspected instances of fraud;
- Obtaining an understanding of the Group and the Charitable Company's policies and procedures relating to:
  - Detecting and responding to the risks of fraud; and
  - Internal controls established to mitigate risks related to fraud.
- Review of minutes of meeting of those charged with governance for any known or suspected instances of fraud;
- Discussion amongst the engagement team as to how and where fraud might occur in the financial statements;
- Performing analytical procedures to identify any unusual or unexpected relationships that may indicate risks of material misstatement due to fraud;

Based on our risk assessment, we considered the areas most susceptible to fraud to be the posting of inappropriate journal entries to manipulate financial results, particularly in relation to recording revenue in the correct period.

Our procedures in respect of the above included:

- Testing a sample of journal entries throughout the year, which met a defined risk criteria, by agreeing to supporting documentation;

We also communicated relevant identified laws and regulations and potential fraud risks to all engagement team members who were all deemed to have appropriate competence and capabilities and remained alert to any indications of fraud or non-compliance with laws and regulations throughout the audit.

Our audit procedures were designed to respond to risks of material misstatement in the financial statements, recognising that the risk of not detecting a material misstatement due to fraud is higher than the risk of not detecting one resulting from error, as fraud may involve deliberate concealment by, for example, forgery, misrepresentations or through collusion. There are inherent limitations in the audit procedures performed and the further removed non-compliance with laws and regulations is from the events and transactions reflected in the financial statements, the less likely we are to become aware of it.

A further description of our responsibilities for the audit of the financial statements is located at the Financial Reporting Council's ("FRC's") website at:

https://www.frc.org.uk/auditorsresponsibilities. This description forms part of our auditor's report.

USE OF OUR REPORT

This report is made solely to the Charitable Company's members, as a body, in accordance with Chapter 3 of Part 16 of the Companies Act 2006. Our audit work has been undertaken so that we might state to the Charitable Company's members those matters we are required to state to them in an auditor's report and for no other purpose. To the fullest extent permitted by law, we do not accept or assume responsibility to anyone other than the Charitable Company, the Charitable Company's members as a body, for our audit work, for this report, or for the opinions we have formed.

DocuSigned by:

David I'Anson

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DAVID I'ANSON (SENIOR STATUTORY AUDITOR)
FOR AND ON BEHALF OF BDO LLP, STATUTORY AUDITOR
SOUTHAMPTON, UK

19 DECEMBER 2023

BDO LLP is a limited liability partnership registered in England and Wales (with registered number OC305127).

CONSOLIDATED STATEMENT OF FINANCIAL ACTIVITIES

FOR THE YEAR ENDED 30 SEPTEMBER 2023 INCORPORATING AN INCOME & EXPENDITURE ACCOUNT

	NOTE	UNRESTRICTED FUNDS £'000	RESTRICTED FUNDS £'000	RESTRICTED FIXED ASSET FUNDS £'000	TOTAL 2023 £'000
INCOME FROM:					
Donations, grants and legacies	1	50,889	24,513	308	75,710
Income from trading subsidiary	10	2,623	-	-	2,623
Other trading activities	2	6,356	24	-	6,380
Investments	3	444	-	-	444
Other		244	-	-	244
Total incoming resources		**60,556**	**24,537**	**308**	**85,401**
EXPENDITURE ON:					
Expenditure	10	2,628	-	-	2,628
Charitable activities	4	53,566	25,326	3,682	82,574
Total expenditure		**56,194**	**25,326**	**3,682**	**85,202**
Net income/ (expenditure)		4,362	(789)	(3,374)	199
Transfers between funds	15	(2,027)	2,200	135	-
Net movement in funds	15	**2,027**	**1,411**	**(3,239)**	**199**
RECONCILIATION OF FUNDS:					
Fund balances at beginning of year	15	15,622	1,139	10,313	27,074
Net movement in funds		2,027	1,411	(3,239)	199
Total fund balances at 30 September 2023	15	**17,649**	**2,550**	**7,074**	**27,273**

The notes on pages 115-128 form part of these financial statements.

FOR COMPARATIVE PURPOSES – FINANCIAL PERFORMANCE FOR THE PRIOR FINANCIAL YEAR

	NOTE	UNRESTRICTED FUNDS £'000	RESTRICTED FUNDS £'000	RESTRICTED FIXED ASSET FUNDS £'000	TOTAL 2022 £'000
INCOME FROM:					
Donations, grants and legacies	1	36,495	29,100	7,563	73,158
Income from trading subsidiary	10	1,122	-	-	1,122
Other trading activities	2	4,215	92	-	4,307
Investments	3	18	-	-	18
Other		110	2	-	112
Total incoming resources		**41,960**	**29,194**	**7,563**	**78,717**
EXPENDITURE ON:					
Expenditure	10	1,158	-	-	1,158
Charitable activities	4	40,198	27,471	5,266	72,935
Total expenditure		**41,356**	**27,471**	**5,266**	**74,093**
Net income/ (expenditure)		604	1,723	2,297	4,624
Transfers between funds	15	5,902	(2,535)	(3,378)	(11)
Net movement in funds	15	**6,506**	**(812)**	**(1,081)**	**4,613**
RECONCILIATION OF FUNDS:					
Fund balances at beginning of year (as restated)	15	9,116	1,951	11,394	22,461
Net movement in funds		6,506	(812)	(1,081)	4,613
Total fund balances at 30 September 2022	15	**15,622**	**1,139**	**10,313**	**27,074**

All amounts are derived from continuing activities during the above two periods. The consolidated statement of financial activities includes all gains and losses recognised in the year.

The notes on pages 115-128 form part of these financial statements.

CONSOLIDATED BALANCE SHEET

AT 30 SEPTEMBER 2023

	NOTE	2023	2023	2022	2022
COMPANY NUMBER: 11444362		**£'000**	**£'000**	**£'000**	**£'000**
FIXED ASSETS					
Intangible assets	8		1		45
Tangible assets	9		14,411		15,645
			14,412		**15,690**
CURRENT ASSETS					
Investments	10	4,000		-	
Stocks	11	553		583	
Debtors	12	13,527		16,639	
Cash at bank and in hand	17	33,347		43,243	
		51,427		**60,465**	
Creditors: amounts falling due within one year	13	(38,566)		(49,081)	
Net current assets			12,861		11,384
Net assets	16		**27,273**		**27,074**
FUNDS					
Unrestricted	15		17,649		15,622
Restricted	15		2,550		1,139
Restricted fixed asset	15		7,074		10,313
Total funds	15, 21		**27,273**		**27,074**

The financial statements were approved and authorised for issue by the Trustees and signed on their behalf by:

SIR JEREMY DARROCH
CHAIR OF BOARD OF TRUSTEES
13 DECEMBER 2023

The notes on pages 115-128 form part of these financial statements.

CHARITY BALANCE SHEET

AT 30 SEPTEMBER 2023

	NOTE	2023	2023	2022	2022
COMPANY NUMBER: 11444362		**£'000**	**£'000**	**£'000**	**£'000**
FIXED ASSETS					
Intangible assets	8		1		45
Tangible assets	9		14,390		15,598
			14,391		**15,643**
CURRENT ASSETS					
Investments	10	4,000		-	
Stocks	11	553		583	
Debtors	12	13,457		17,773	
Cash at bank and in hand	17	32,681		41,853	
		50,691		**60,209**	
Creditors: amounts falling due within one year	13	(37,671)		(48,645)	
Net current assets			13,020		11,564
Net assets	16		**27,411**		**27,207**
FUNDS					
Unrestricted	15		17,787		15,755
Restricted	15		2,550		1,139
Restricted fixed asset	15		7,074		10,313
Total funds	15		**27,411**		**27,207**

As permitted by S408 of the Companies Act 2009, the Charity has not presented its own income and expenditure account and related notes. The Charity's surplus for the year was £204k (2022: surplus £4,662k).

The financial statements were approved and authorised for issue by the Trustees and signed on their behalf by:

SIR JEREMY DARROCH
CHAIR OF BOARD OF TRUSTEES
13 DECEMBER 2023

The notes on pages 115-128 form part of these financial statements.

CONSOLIDATED STATEMENT OF CASH FLOWS

	NOTE	2023 £'000	2022 £'000
CASH FLOWS FROM OPERATING ACTIVITIES			
Net income for the year:		199	4,624
Depreciation charges	9	4,302	4,737
Amortisation charges	8	44	529
Loss on disposal of equipment		340	109
Investment income	3	(444)	(18)
Decrease/ (increase) in stocks	11	30	(95)
Decrease in debtors	12	3,112	14,016
Decrease in creditors	13	(10,515)	(19,002)
Net cash (used in)/ provided by operating activities		**(2,932)**	**4,900**
CASH FLOWS FROM INVESTING ACTIVITIES			
Investment income	3	444	18
Proceeds from sale of tangible assets		16	-
Increase in cash deposits > 30 days		(4,000)	-
Purchase of tangible assets	9	(3,424)	(4,535)
Net cash used in investing activities		**(6.964)**	**(4,517)**
(Decrease)/ increase in cash and cash equivalents in the year		**(9,896)**	**383**
Cash and cash equivalents at the beginning of the year	17	**43,243**	**42,860**
Cash and cash equivalents at the end of the year	17	**33,347**	**43,243**

A net debt reconciliation has not been prepared as the Group does not have any debt.

The notes on pages 115-128 form part of these financial statements.

NOTES TO THE FINANCIAL STATEMENTS

COMPANY AND CHARITABLE STATUS

National Oceanography Centre, a public benefit entity, is incorporated in England and Wales as a company limited by guarantee not having share capital. There are currently seven Trustees who are also the members of the company. Each member has undertaken to contribute to the assets in the event of winding up a sum not exceeding £1. National Oceanography Centre is a registered charity. The registered office and charity registration numbers are given on **PAGE 93**.

The financial statements have been prepared in accordance with the Charities SORP Accounting and Reporting by Charities: Statement of Recommended Practice applicable to charities preparing their accounts in accordance with the Financial Reporting Standard applicable in the UK and Republic of Ireland (FRS 102) (effective 1 January 2019), the Financial Reporting Standard applicable in the UK and Republic of Ireland (FRS 102) and the Companies Act 2006.

The preparation of financial statements in compliance with FRS 102 requires the use of certain critical accounting estimates. It also requires management to exercise judgement in applying the Group's accounting policies.

The following principal accounting policies have been applied consistently:

BASIS OF CONSOLIDATION

The Consolidated Statement of Financial Activities (SOFA) and Consolidated Balance Sheet consolidate the financial statements of the Company and its subsidiary undertaking. The results of the subsidiary are consolidated on a line-by-line basis.

The Parent Charitable Company has taken advantage of the exemption allowed under section 408 of the Companies Act 2006 and has not presented its own Statement of Financial Activities in these financial statements.

EXEMPTIONS FOR QUALIFYING ENTITIES UNDER FRS 102

The Parent Charitable Company has taken advantage of the following disclosure exemptions available in FRS 102:

- from preparing a statement of cash flows;
- from financial instruments disclosures; and
- from the aggregate remuneration of the key management personnel as their remuneration is included in the totals for the group as a whole.

GOING CONCERN

The Trustees have reviewed whether it is appropriate for the financial statements to be prepared on a going concern basis.

In assessing the ability of the NOC to continue as a going concern management have considered the future pipeline of income and costs to build a bottom up budget for the Financial Years (FY) 2024 – 2026. The income for FY24 is anticipated to be greater than the current year due to an extra award of National Capability and a strong pipeline of commercial opportunities which are highly likely to materialise. This profile of income is expected to continue cross the three-year period. The Large Research Infrastructure funding went through a mid-term commission review and NERC have agreed a funding approach for the next 4 years. The resource required for projects is covered by funded projects. Detailed resource planning is in place to inform recruitment with plans to continue to grow across FY24 -26.

Taking into consideration, signed Awards for National Capability infrastructure and science facilities and services, current indications of recommissioning for National Capability Science, previous success rates in research grant rounds with sustained bid submission and forecast of future income based on a strong commercial pipeline, indications are that NOC can continue to cover its managed cost base over the coming three-year period.

In conclusion there are no material uncertainties to cast doubt on NOC's ability to continue as a going concern.

INCOME

All income is recognised once the Group has entitlement to the income, it is probable that the income will be received, and the amount of income receivable can be measured reliably.

Grants are included in the Consolidated Statement of Financial Activities on a receivable basis. The balance of income received for specific purposes but not expended during the year is shown in the relevant funds on the Balance Sheet. Where income is received in advance of entitlement of receipt, its recognition is deferred and included in creditors as deferred income. Where entitlement occurs before income is received, the income is accrued. Donations and grants for particular purposes are included in income as restricted funds.

Donated fixed assets are measured at fair value, unless it is impractical to measure this reliably, in which case the cost of the item to the donor is used. The gain is

recognised as income from donations and a corresponding amount is included in the appropriate fixed asset class and depreciated over the useful economic life, in accordance with the Group's accounting policies.

Investment income relates to interest on funds held on deposit and is included when receivable and the amount can be measured reliably by the Group; this is normally upon notification of the interest paid or payable by the institution with whom the funds are deposited.

Incoming resources from charitable trading activity are accounted for when earned.

Where a contract for services is performed gradually over time the revenue is recognised as the activity progresses. The amount of revenue reflects the costs incurred up to the balance sheet date.

EXPENDITURE

Expenditure is recognised once there is a legal or constructive obligation to transfer economic benefit to a third party, it is probable that a transfer of economic benefits will be required in settlement and the amount of the obligation can be measured reliably.

Expenditure is classified by activity. The costs of each activity are made up of the total of direct costs and shared costs, including support costs involved in undertaking each activity.

Direct costs attributable to a single activity are allocated directly to that activity. Shared costs which contribute to more than one activity and support costs which are not attributable to a single activity are apportioned between those activities on a basis consistent with the use of resources. Central staff costs are allocated on the basis of time spent, and depreciation charges allocated on the portion of the asset's use.

Expenditure on raising funds includes all expenditure incurred by the Group to raise funds for its charitable purposes and includes costs of all fundraising activities events and non-charitable trading.

Expenditure on charitable activities is incurred on directly undertaking the activities which further the Group's objectives, as well as any associated support costs.

Governance costs include those incurred in the governance of the Charity and its assets and are primarily associated with constitutional and statutory requirements.

FOREIGN CURRENCIES

The financial statements are prepared in Sterling, which is the functional currency of the Group. Monetary amounts in these financial statements are rounded to the nearest thousand pounds.

Monetary assets and liabilities denominated in foreign currencies are translated into sterling at rates of exchange ruling at the reporting date.

Transactions in foreign currencies are translated into sterling at the rate ruling on the date of the transaction.

Exchange gains and losses are recognised in the Consolidated Statement of Financial Activities.

INTANGIBLE ASSETS AND AMORTISATION

Intangible assets are capitalised and recognised when future economic benefits are probable, and the cost or value of the asset can be measured reliably.

Intangible assets are initially recognised at cost. After recognition, under the cost model, intangible assets are measured at cost less any accumulated amortisation and any accumulated impairment losses.

At each reporting date the Charity assesses whether there is any indication of impairment. If such indication exists, the recoverable amount of the asset is determined to be the higher of its fair value less costs to sell and its value in use. An impairment loss is recognised where the carrying amount exceeds the recoverable amount.

Amortisation is provided on intangible assets at rates calculated to write off the cost of each asset on a straight-line basis over its expected useful life.

The estimated useful lives are as follows:

Computer software - 5 years straight line

TANGIBLE FIXED ASSETS AND DEPRECIATION

Tangible fixed assets are capitalised and recognised when future economic benefits are probable, and the cost or value of the asset can be measured reliably.

Tangible fixed assets are initially recognised at cost. After recognition, under the cost model, tangible fixed assets are measured at cost less accumulated depreciation and any accumulated impairment losses. All costs incurred to bring a tangible fixed asset into its intended working condition should be included in the measurement of cost.

Assets in the course of construction are included at costs incurred to date. Depreciation on these assets is not charged until they are brought into use.

At each reporting date the Charity assesses whether there is any indication of impairment. If such indication exists, the recoverable amount of the asset is determined to be the higher of its fair value less costs to sell and its value in use. An impairment loss is recognised where the carrying amount exceeds the recoverable amount.

Depreciation is charged on a straight-line basis over their estimated useful lives.

Depreciation is provided on the following bases;

Scientific equipment - 5 years

Marine pool - 5 years

Fixtures and fittings - 5 years

Computer equipment - 3 years

Plant and machinery - 5 years

The assets' residual values, useful lives and depreciation methods are reviewed, and adjusted prospectively if appropriate, or if there is an indication of a significant change since the last reporting date.

Gains and losses on disposals are determined by comparing the proceeds with the carrying amount and are recognised in the Consolidated Statement of Financial Activities.

INVESTMENTS

Investments in subsidiaries are valued at cost less provision for impairment. Included in investments are deposits that do not classify as cash and cash equivalents, these are presented as short-term investments.

STOCKS

Stocks comprise of fuel held in storage for vessels and ship bond stock. Fuel stock is recorded at cost. Ship bond stock is valued at the lower of cost and net realisable value after making due allowance for obsolete and slow-moving stocks.

DEBTORS

Trade and other debtors are recognised at the settlement amount after any trade discount offered. Prepayments are valued at the amount prepaid net of any trade discounts due.

Work in progress reflects the costs incurred to balance sheet date on a contract for services.

CASH AND CASH EQUIVALENTS

Cash at bank and in hand includes cash on hand and on demand deposit accounts, Cash equivalents are short term highly liquid investments with a short maturity of three months or less from the date of acquisition or opening of the deposit or similar account.

LIABILITIES AND PROVISIONS

Liabilities and provisions are recognised when there is an obligation at the reporting date as a result of a past event, it is probable that a transfer of economic benefit will be required in settlement, and the amount of the settlement can be estimated reliably.

Liabilities are recognised at the amount that the Group anticipates it will pay to settle the debt or the amount it has received as advanced payments for the goods or services it must provide.

Provisions are initially measured at the best estimate of the amount required to settle the obligation at the reporting date and subsequently reviewed at each reporting date and adjusted to reflect the current best estimate of the amount that would be required to settle the obligation. Any adjustments to provision previously recognised are recognised as surplus or expenditure in the statement of financial activities.

FINANCIAL INSTRUMENTS

The Group only has financial assets and financial liabilities of a kind that qualify as basic financial instruments. Basic financial instruments are initially recognised at transaction value and subsequently measured at their settlement value with the exception of bank loans which are subsequently measured at amortised cost using the effective interest method.

LEASES

Rentals paid under operating leases are charged to the Consolidated Statement of Financial Activities on a straight-line basis over the lease term. The organisation has not entered into any finance leases.

PENSIONS

The Group operates a defined contribution pension scheme, and the pension charge represents the amounts payable by the Group to the fund in respect of the year.

The Group is also participating in a multi-employer plan with the National Environmental Research Council which is a defined benefit scheme funded from annual grant

in aid on a pay as you go basis. It is not possible for the Group to obtain sufficient information to enable it to account for the plan as a defined benefit plan, it therefore accounts for the plan as a defined contribution plan.

National Oceanography Centre, as a registered charity, is exempt from corporation tax to the extent that surpluses are applied to its charitable activities. No corporation tax charge arises in the charity's subsidiary due to its policy of gifting all taxable profits to National Oceanography Centre each year.

Irrecoverable VAT is charged against the category of total expenditure for which it was incurred .

TAXATION

National Oceanography Centre, as a registered charity, is exempt from corporation tax to the extent that surpluses are applied to its charitable activities. No corporation tax charge arises in the charity's subsidiary due to its policy of gifting all taxable profits to National Oceanography Centre each year.

Irrecoverable VAT is charged against the category of total expenditure for which it was incurred.

FUND ACCOUNTING

General funds are unrestricted funds which are available for use at the discretion of the Trustees in furtherance of the general objectives of the Group and which have not been designated for other purposes.

Designated funds comprise unrestricted funds that have been set aside by the Trustees for particular purposes. The aim and use of each designated fund is set out in the notes to the financial statements.

Restricted funds are funds which are to be used in accordance with specific restrictions imposed by donors or which have been raised by the Group for particular purposes. The costs of raising and administering such funds are charged against the specific fund. The aim and use of each restricted fund is set out in the notes to the financial statements.

Restricted fixed asset funds are funds for the sole use of acquiring the moveable assets of NOC on the 1 November 2019 and the expenditure is the subsequent depreciation of these assets.

Investment income, gains and losses are allocated to the appropriate fund.

GIFT AID DONATIONS MADE TO THE CHARITY

Donations made by the subsidiary to the Parent Charity are recognised as income in the charity either when paid or at the date when the subsidiary has a legal liability to make the donation payment if earlier.

RESEARCH VESSELS

NOC operates and manages two research vessels owned by UKRI under a bareboat charter at peppercorn rates. The terms of the bareboat charter do not meet the definition of a lease and, due to the unique nature of the vessels, it is not possible to reasonably quantify the value ascribed to the ownership and operation of them.

CRITICAL ACCOUNTING ESTIMATES AND AREAS OF JUDGEMENT

Estimates and judgements are continually evaluated and are based on historical experience and other factors, including expectations of future events that are believed to be reasonable under the circumstances.

CRITICAL ACCOUNTING ESTIMATES AND ASSUMPTIONS

The Group makes estimates and assumptions concerning the future. The resulting accounting estimates and assumptions will, by definition, seldom equal the related actual results. The estimates and assumptions that have a significant risk of causing a material adjustment to the carrying amounts of assets and liabilities within the next financial year are discussed below.

CRITICAL AREAS OF JUDGEMENT

Depreciation is a key estimate in the accounts which requires management judgement over the useful life of the assets and the residual values. The policy has been set out in the notes above.

1 INCOME FROM DONATIONS, GRANTS AND LEGACIES

	UNRESTRICTED FUNDS 2023	RESTRICTED FUNDS 2023	RESTRICTED FIXED ASSET FUNDS 2023	TOTAL FUNDS 2023	TOTAL FUNDS 2022
	£'000	£'000	£'000	£'000	£'000
DONATIONS					
Other donations	1	50	-	51	19
	1	**50**	**-**	**51**	**19**
INCOME FROM GRANTS					
UKRI NERC grant	26,484	24,048	293	50,825	57,636
UKRI other grants	10,464	323	-	10,787	6,350
Other grants	13,940	92	15	14,047	9,153
	50,888	**24,463**	**308**	**75,659**	**73,139**
	50,889	**24,513**	**308**	**75,710**	**73,158**

2 INCOME FROM OTHER TRADING ACTIVITIES

	UNRESTRICTED FUNDS 2023	RESTRICTED FUNDS 2023	TOTAL FUNDS 2023	TOTAL FUNDS 2022
	£'000	£'000	£'000	£'000
Rental	1,300	-	1,300	1,767
Disbursements	1,909	-	1,909	1,025
Maintenance and repairs income	3,062	24	3,086	1,423
Bond sales	66	-	66	51
Ship charter income	19	-	19	41
Other trading income	16	25	41	25
	6,356	**24**	**6,380**	**4,307**

3 INVESTMENT INCOME

	UNRESTRICTED FUNDS 2023	TOTAL FUNDS 2023	TOTAL FUNDS 2022
	£'000	£'000	£'000
Bank interest	**444**	**444**	**18**

4 EXPENDITURE ON CHARITABLE ACTIVITIES

	STAFF COSTS 2023	VESSEL COSTS 2023	RESEARCH COSTS 2023	ESTATE COSTS 2023	DEPRE-CIATION 2023	OTHER COSTS 2023	TOTAL 2023	TOTAL 2022
	£'000	£'000	£'000	£'000	£'000	£'000	£'000	£'000
ACTIVITIES UNDERTAKEN DIRECTLY								
Scientific research	27,372	14,665	3,428	554	3,760	11,196	60,974	51,543
Support costs:								
- Operations & finance staff	10,630	-	-	-	-	-	10,630	10,181
- Management, operations & facilities costs	-	-	-	3,892	-	5,993	9,885	9,729
- Depreciation	-	-	-	-	560	-	560	1,229
- Governance costs	-	-	-	-	-	524	524	253
	38,002	**14,665**	**3,428**	**4,446**	**4,320**	**17,713**	**82,574**	**72,935**

Total expenditure on charitable activities for the year was £82,574k (2022: £72,935k). Of that expenditure £53,566k (2022: £40,198k) was unrestricted, £25,326k (2022: £27,471k) was restricted and £3,682k (2022: £5,266k) was restricted fixed asset funds.

	TOTAL FUNDS 2023	TOTAL FUNDS 2022
	£'000	£'000
ANALYSIS OF GOVERNANCE COSTS		
Fees payable to the charity's auditor (inclusive of VAT):		
- The audit of the charity's financial statements	113	98
- The audit of the charity's subsidiary pursuant to legislation	12	
- Tax advisory services	178	28
Trustee remuneration and expenses (Note 7)	8	9
Legal and professional fees	200	102
Finance costs	13	16
	524	**253**

5 TOTAL EXPENDITURE

	2023	2022
	£'000	£'000
TOTAL EXPENDITURE INCLUDES:		
Depreciation of tangible fixed assets	4,302	4,737
Amortisation of intangible fixed assets	44	529
Loss on disposal	340	109
Operating lease charges	1,500	1,500
Loss/ (Gain) on foreign exchange	288	(173)

6 STAFF COSTS

GROUP AND CHARITY	2023 £'000	2022 £'000
Wages and salaries	30,337	27,556
National insurance contributions	3,219	2,871
Pension costs	4,446	4,628
	38,002	**35,055**

During the year there were redundancy costs of £61k (2022: £378k) which were paid to 9 (2022: 23) members of staff. Of these 2 (2022: 14) were statutory redundancy pay and 7 (2022: 14) were severance pay.

The average number of employees for the year was as follows:

GROUP AND CHARITY	2023 NUMBER	2022 NUMBER
Science and research staff	266	237
Fundraising staff	2	4
Operations and finance staff	207	201
Engineers and technicians	112	119
Mariners	86	86
	673	**647**

All staff are employed by the charity. No staff are employed directly by the subsidiary entity.

The number of employees whose employee benefits (excluding employer pension costs and National Insurance) exceeded £60,000 was:

	2023 NUMBER	2022 NUMBER
£60,001 - £70,000	46	28
£70,001 - £80,000	19	10
£80,001 - £90,000	5	5
£90,001 - £100,000	3	1
£100,001 - £110,000	1	-
£110,001 - £120,000	-	2
£120,001 - £130,000	1	-
£130,001 - £140,000	1	-
£140,001 - £150,000	-	1

	2023 £'000	2022 £'000
Key management personnel salaries (inc. employer pension contributions and employers National Insurance) (Key management personnel are the Senior Management Team, as set out on **PAGE 89** of this report)	539	438

7 TRUSTEES' REMUNERATION AND EXPENSES

During the year, one Trustee (David John Gee) received £8k (2022: £9k) in relation to remuneration or other benefits.

The remuneration was agreed and provided under a provision in the governing document of the Charity. Remuneration was provided due to the Trustees' role as the Chair of the Audit and Risk Committee, which requires a range of specialist knowledge and experience and has a wide remit in terms of the role that the Trustee is required to provide. No other benefits were provided.

During the year ended 30 September 2023, one Trustee was reimbursed £0.5k (2022: one Trustee received £0.5k) for expenses in relation to travel and subsistence.

During the year indemnity insurance of £78k (2022: £47k) was purchased in respect of all the Trustees and Officers of the Charity.

8 INTANGIBLE ASSETS

GROUP AND CHARITY	COMPUTER SOFTWARE AND TOTAL £'000
COST	
At 1 October 2022	1,609
Additions	-
At 30 September 2023	**1,609**
AMORTISATION	
At 1 October 2022	1,564
Charge for the year	44
At 30 September 2023	**1,608**
NET BOOK VALUE	
At 30 September 2023	**1**
At 30 September 2022	**45**

9 TANGIBLE FIXED ASSETS

GROUP	SCIENTIFIC EQUIPMENT £'000	MARINE POOL £'000	FIXTURES & FITTINGS £'000	COMPUTER EQUIPMENT £'000	PLANT & MACHINERY £'000	TOTAL £'000
COST OR VALUATION						
At 1 October 2022	18,485	9,441	47	2,082	2,286	32,341
Additions	1,482	1,897	-	359	(314)	3,424
Disposals	(1,154)	(16)	-	-	(78)	(1,248)
At 30 September 2023	**18,813**	**11,322**	**47**	**2,441**	**1,894**	**34,517**
DEPRECIATION						
At 1 October 2022	10,160	4,020	-	1,137	1,379	16,696
Charge for the year	2,537	1,223	26	211	305	4,302
On disposals	(811)	(8)	-	-	(73)	(892)
At 30 September 2023	**11,886**	**5,235**	**26**	**1,348**	**1,611**	**20,106**
NET BOOK VALUE						
At 30 September 2023	**6,927**	**6,087**	**21**	**1,093**	**283**	**14,411**
At 30 September 2022	**8,325**	**5,421**	**47**	**945**	**907**	**15,645**

9 TANGIBLE FIXED ASSETS (CONTINUED)

CHARITY	SCIENTIFIC EQUIPMENT £'000	MARINE POOL £'000	FIXTURES & FITTINGS £'000	COMPUTER EQUIPMENT £'000	PLANT & MACHINERY £'000	TOTAL £'000
COST OR VALUATION						
At 1 October 2022	18,485	9,441	-	2,082	2,286	32,294
Additions	1,482	1,897	-	359	(314)	3,424
Disposals	(1,154)	(16)	-	-	(78)	(1,248)
At 30 September 2023	**18,813**	**11,322**	**-**	**2,441**	**1,894**	**34,470**
DEPRECIATION						
At 1 October 2022	10,160	4,020	-	1,137	1,379	16,696
Charge for the year	2,537	1,223	-	211	305	4,276
On disposals	(811)	(8)	-	-	(73)	(892)
At 30 September 2023	**11,886**	**5,235**	**-**	**1,348**	**1,611**	**20,080**
NET BOOK VALUE						
At 30 September 2023	**6,927**	**6,087**	**-**	**1,093**	**283**	**14,390**
At 30 September 2022	**8,325**	**5,421**	**-**	**945**	**907**	**15,598**

10 INVESTMENTS

INVESTMENT IN SUBSIDIARIES

The following is a subsidiary undertaking of the Charity:

NAME	COMPANY NUMBER	REGISTERED OFFICE OR PRINCIPAL PLACE OF BUSINESS	PRINCIPAL ACTIVITY	CLASS OF SHARES	HOLDING
National Oceanography Centre Innovations Limited	12250763	National Oceanography Centre, European Way, Southampton, UK, SO14 3ZH	Development of products and services based on the output of ocean science research and engineering	Ordinary	100%

	2023 £'000	2022 £'000
Income	2,623	1,122
Expenditure	(2,628)	(1,158)
Net liabilities	(4)	(36)

INVESTMENT IN CASH DEPOSITS

The value of cash deposits held as investment as at 30 September 2023:

	2023 £'000	2022 £'000
Cash Deposits with maturity of more than three months on inception	4,000	-

11 STOCKS

	2023	2022
	£'000	£'000
Marine fuel	501	546
Ship bond	52	37
	553	**583**

12 DEBTORS

	GROUP 2023	GROUP 2022	CHARITY 2023	CHARITY 2022
	£'000	£'000	£'000	£'000
Trade debtors	4,094	10,705	3,965	10,577
Due from subsidiary company	-	-	216	1,360
Prepayments	1,888	1,505	1,888	1,505
Accrued income	7,180	4,337	7,023	4,239
Other debtors	365	92	365	92
	13,527	**16,639**	**13,457**	**17,773**

13 CREDITORS
AMOUNTS FALLING DUE WITHIN ONE YEAR

	GROUP 2023	GROUP 2022	CHARITY 2023	CHARITY 2022
	£'000	£'000	£'000	£'000
Trade creditors	768	1,861	768	1,861
Due to Marine and EU partners	118	3,347	118	3,347
Pension accrual	294	268	294	268
Social security and other taxes	2,228	2,062	2,048	1,851
Accruals	2,532	4,017	2,532	4,007
Deferred income (see note 14)	32,626	37,526	31,911	37,311
	38,566	**49,081**	**37,671**	**48,645**

14 DEFERRED INCOME

	GROUP 2023	GROUP 2022	CHARITY 2023	CHARITY 2022
	£'000	£'000	£'000	£'000
At 1 October	37,526	59,672	37,311	59,655
Released to income	(78,502)	(72,043)	(78,486)	(72,027)
Amounts deferred in year	73,602	49,897	73,086	49,683
Carried forward	**32,626**	**37,526**	**31,911**	**37,311**

Deferred income relates to grant income, including research grants, which are received in advance of specific conditions being met. The income is shown as deferred until those conditions are fully satisfied.

15 FUNDS

GROUP	BALANCE AT 30 SEPTEMBER 2022 £'000	INCOME £'000	EXPENDITURE £'000	TRANSFERS £'000	BALANCE AT 30 SEPTEMBER 2023 £'000
UNRESTRICTED FUNDS					
Designated unrestricted:					
Designated funds	-	-	-	3,924	3,924
General unrestricted:					
Unrestricted funds	15,622	60,556	(56,194)	(6,259)	13,725
Total unrestricted funds	**15,622**	**60,556**	**(56,194)**	**(2,335)**	**17,649**
RESTRICTED FUNDS					
Restricted funds	1,139	24,537	(25,326)	2,200	2,550
Restricted fixed asset funds	10,313	308	(3,682)	135	7,074
Total restricted funds	**11,452**	**24,845**	**(29,008)**	**2,335**	**9,624**
Total funds	**27,074**	**85,401**	**(85,202)**	**-**	**27,273**

CHARITY	BALANCE AT 30 SEPTEMBER 2022 £'000	INCOME £'000	EXPENDITURE £'000	TRANSFERS £'000	BALANCE AT 30 SEPTEMBER 2023 £'000
UNRESTRICTED FUNDS					
Designated unrestricted:					
Designated funds	-	-	-	3,924	3,924
General unrestricted:					
Unrestricted funds	15,755	57,933	(53,566)	(6,259)	13,863
Total unrestricted funds	**15,755**	**57,933**	**(53,566)**	**(2,335)**	**17,787**
RESTRICTED FUNDS					
Restricted funds	1,139	24,537	(25,326)	2,200	2,550
Restricted fixed asset funds	10,313	308	(3,682)	135	7,074
Total restricted funds	**11,452**	**24,845**	**(29,008)**	**2,335**	**9,624**
Total funds	**27,207**	**82,778**	**(82,574)**	**-**	**27,411**

15 FUNDS (CONTINUED)

GROUP	BALANCE AT 30 SEPTEMBER 2021 AS RESTATED £'000	INCOME £'000	EXPENDITURE £'000	TRANSFERS £'000	BALANCE AT 30 SEPTEMBER 2022 £'000
UNRESTRICTED FUNDS					
General unrestricted:					
Unrestricted funds	9,116	41,960	(41,356)	5,902	15,622
Total unrestricted funds	**9,116**	**41,960**	**(41,356)**	**5,902**	**15,622**
RESTRICTED FUNDS					
Restricted funds	1,951	29,194	(27,471)	(2,535)	1,139
Restricted fixed asset funds	11,394	7,563	(5,266)	(3,378)	10,313
Total restricted funds	**13,345**	**36,757**	**(32,737)**	**(5,913)**	**11,452**
Total funds	**22,461**	**78,717**	**(74,093)**	**(11)**	**27,074**

CHARITY	BALANCE AT 30 SEPTEMBER 2021 AS RESTATED £'000	INCOME £'000	EXPENDITURE £'000	TRANSFERS £'000	BALANCE AT 30 SEPTEMBER 2022 £'000
UNRESTRICTED FUNDS					
General unrestricted:					
Unrestricted funds	9,210	40,838	(40,198)	5,905	15,755
Total unrestricted funds	**9,210**	**40,838**	**(40,198)**	**5,905**	**15,755**
RESTRICTED FUNDS					
Restricted funds	1,951	29,194	(27,471)	(2,535)	1,139
Restricted fixed asset funds	11,394	7,563	(5,266)	(3,378)	10,313
Total restricted funds	**13,345**	**36,757**	**(32,737)**	**(5,913)**	**11,452**
Total funds	**22,555**	**77,595**	**(72,935)**	**(8)**	**27,207**

General funds are unrestricted funds which are available for use at the discretion of the Trustees in furtherance of the general objectives of the Group and which have not been designated for other purposes.

Designated funds comprise unrestricted funds that have been set aside by the Trustees for particular purposes. The designated funds is the surplus earned from revenue generating opportunities to be used to the running of the research ships.

Restricted funds are funds which are to be used in accordance with specific restrictions imposed by donors or which have been raised by the Group for particular purposes. The costs of raising and administering such funds are charged against the specific fund.

Restricted funds comprise of NMF ship operating income, charter income balance and NMEP capital replacement.

Restricted fixed asset funds are the donated funds for the sole use of acquiring the moveable assets of NOC upon independence the 1 November 2019 and the expenditure is the subsequent depreciation of these assets.

16 NET ASSETS

GROUP	FIXED ASSETS 2023 £'000	INVESTMENTS 2023 £'000	CURRENT ASSETS 2023 £'000	CURRENT LIABILITIES 2023 £'000	TOTAL 2023 £'000
General unrestricted	2,539	-	34,729	(23,543)	13,725
Designated unrestricted	-	-	3,924	-	3,924
Restricted	3,862	-	13,711	(15,023)	2,550
Restricted fixed asset	8,011	-	(937)	-	7,074
	14,412	**-**	**51,427**	**(38,566)**	**27,273**

GROUP	FIXED ASSETS 2022 £'000	INVESTMENTS 2022 £'000	CURRENT ASSETS 2022 £'000	CURRENT LIABILITIES 2022 £'000	TOTAL 2022 £'000
General unrestricted	47	-	51,435	(35,860)	15,622
Designated unrestricted	-	-	-	-	-
Restricted	5,330	-	9,030	(13,221)	1,139
Restricted fixed asset	10,313	-	-		10,313
	14,412	**4,000**	**47,469**	**(38,658)**	**27,223**

CHARITY	FIXED ASSETS 2023 £'000	INVESTMENTS 2023 £'000	CURRENT ASSETS 2023 £'000	CURRENT LIABILITIES 2023 £'000	TOTAL 2023 £'000
General unrestricted	2,518	-	33,993	(22,648)	13,863
Designated unrestricted	-	-	3,924	-	3,924
Restricted	3,862	-	13,711	(15,203)	2,550
Restricted fixed asset	8,011	-	(937)	-	7,074
	14,391	**-**	**50,691**	**(37,671)**	**27,411**

CHARITY	FIXED ASSETS 2022 £'000	INVESTMENTS 2022 £'000	CURRENT ASSETS 2022 £'000	CURRENT LIABILITIES 2022 £'000	TOTAL 2022 £'000
General unrestricted	-	-	51,179	(35,424)	15,755
Designated unrestricted	-	-	-	-	-
Restricted	5,330	-	9,030	(13,221)	1,139
Restricted fixed asset	10,313	-	-	-	10,313
	15,643	**-**	**60,209**	**(48,645)**	**27,207**

17 CASH AND CASH EQUIVALENTS

	GROUP 2023 £'000	GROUP 2022 £'000	CHARITY 2023 £'000	CHARITY 2022 £'000
Cash at bank	21,347	43,243	20,681	41,853
Cash equivalents	12,000	-	12,000	-
	33,347	**42,243**	**32,681**	**41,853**

18 OPERATING LEASE

As at 30 September 2023 the group and charity had future minimum lease payments of:

	GROUP & CHARITY 2023 £'000	GROUP & CHARITY 2022 £'000
No later than 1 year	1,500	1,500
Between 1 and 5 years	250	1,750
	1,750	**3,250**

19 PENSION COMMITMENTS

UKRI-NERC employees are entitled to be members of the Research Council's Pension Scheme which is a defined benefit scheme funded from annual grant-in-aid and pay-as-you-go basis. The pension scheme is contributory and is administered by the Research Council's Joint Superannuation Service.

The scheme is a multi-employer scheme, for which a separate Research Council's Pension Scheme account is published. NERC are unable to identify their share of the underlying assets and liabilities and those relating to NOC.

Employees who joined after 1 November 2019 are entitled to be members of the National Oceanography Centre Group Pension Scheme. This is a defined contribution pension scheme administered by Legal and General. Contributions for the year were employer's 10% and employees a minimum of 5%.

The pension costs charge for the year represents contributions payable to the schemes and amounted to £4,446k (2022: £4,628k).

20 RELATED PARTY TRANSACTIONS

The Charity recharged employment costs of £919k (2022: £514k) to National Oceanography Centre Innovations Limited, its subsidiary and also incurred costs of £1,666k (2022: £616k) on behalf of its subsidiary.

At the year end the Charity was owed £216k (2022: £1,360k) by National Oceanography Centre Innovations Limited.

Transactions with Trustees are detailed in note 15.

STAY IN TOUCH

The National Oceanography Centre is one of the world's top oceanographic institutions.

We provide the UK's National Capability needed to be a top global player, to lead and participate in international co-operations. We undertake world leading research in large scale oceanography and ocean measurement technology innovation; working with government and business to turn great science and technology into advice and applications.

We support scientists in universities and research institutes with facilities, research infrastructure and irreplaceable data assets – enabling the UK to harness the full power and diversity of its ocean science talent.

To get bite-sized updates on our Science and Technology, Latest News, Public Events, Career Opportunities and Educational Resources, subscribe to Ocean News via our website or follow us on social media:

NOC.AC.UK

@NOCNEWS

/NATIONALOCEANOGRAPHYCENTRE

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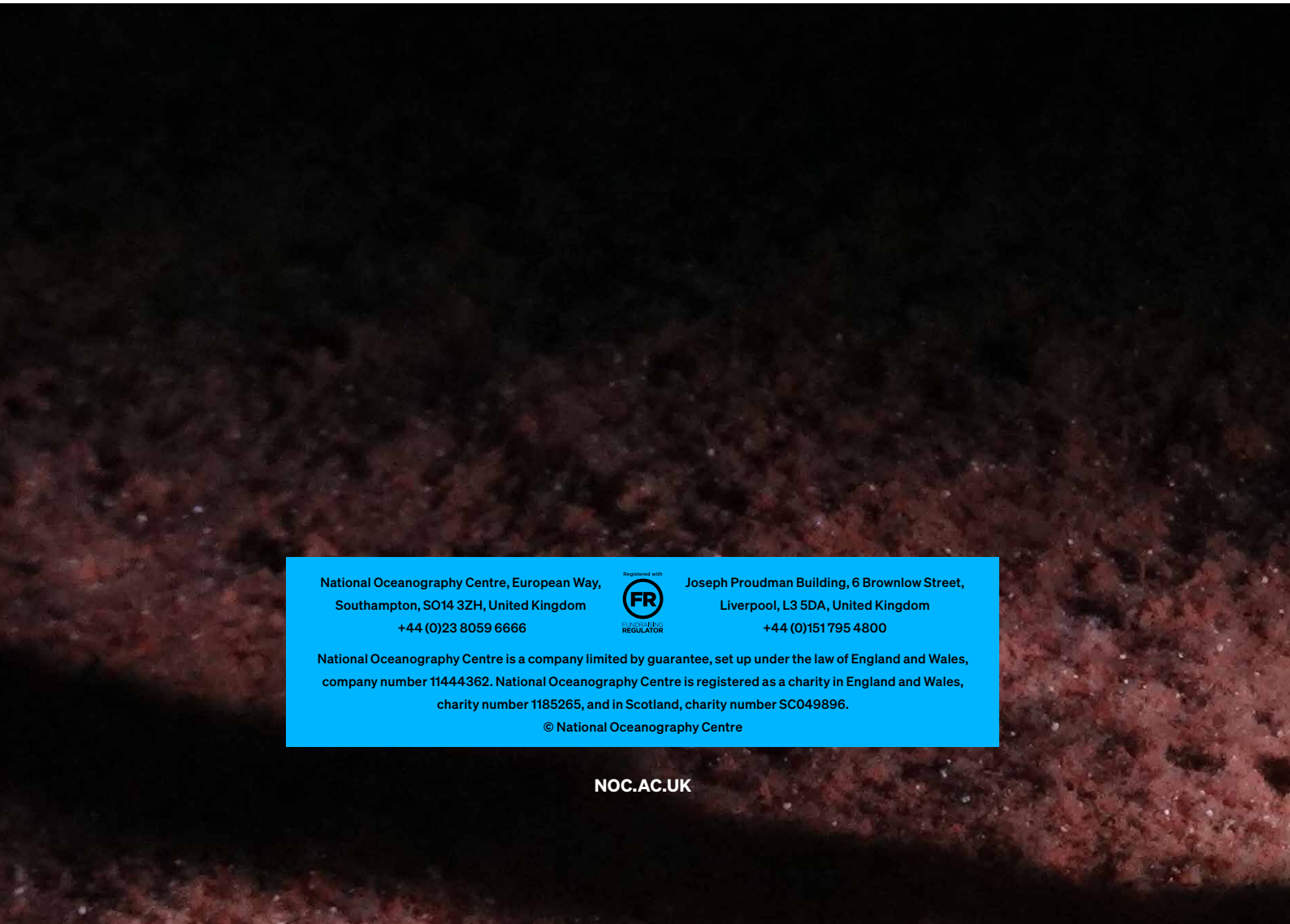
/NOCNEWS

Cover image: An example of the type of biodiversity found in the Clarion-Clipperton Zone



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National Oceanography Centre is a company limited by guarantee, set up under the law of England and Wales, company number 11444362. National Oceanography Centre is registered as a charity in England and Wales, charity number 1185265, and in Scotland, charity number SC049896.
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NATIONAL OCEANOGRAPHY CENTRE

England & Wales - Charity number 1185265

Accounts

National Oceanography Centre

ANNUAL REPORT & FINANCIAL STATEMENTS

FOR THE YEAR ENDED 30 SEPTEMBER 2022

REGISTERED NUMBER 11444362

CHARITY NUMBERS 1185265 & SC049896

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NATIONAL OCEANOGRAPHY CENTRE
A COMPANY LIMITED BY GUARANTEE

Annual Report and Financial Statements

Year Ended 30 September 2022

Registered Number 11444362

Charity Numbers 1185265 & SC049896

FOREWORD BY THE CHAIR OF TRUSTEES

I would like to thank John Hirst for his outstanding leadership, and I am looking forward to chairing a Board of such committed and knowledgeable leaders.

I am thrilled to be joining NOC at such a critical time for ocean research and technology. The work done by the dedicated scientists and innovators at NOC is crucial to protecting our ocean and our planet. The passion NOC's experts have for their work is inspiring to see and I look forward to helping them ensure that their important work has global impact and recognition.

With the turbulent political and economic environment, there will be challenging times ahead for all organisations. NOC is an established world leader with a strong reputation for excellence and a sound sustainability strategy and business plan. I look forward to us continuing our vital work in the coming year.

JEREMY DARROCH
CHAIR OF BOARD OF TRUSTEES
27 APRIL 2023

MESSAGE FROM THE FORMER CHAIR

The 2021 State of the UK Climate report was a reminder that temperatures continue to rise, and with that, we see considerable sea level rise. The important role of the ocean in climate was clear at COP26 last year, and growing from that, we are now part of a global Blue Ocean Pavilion at COP27, working with the world's leading ocean institutes to influence the climate agenda. We have been prominent on the national and international stage this year when it comes to advocating for the ocean and putting science and technology at the heart of understanding our seas.

Another key area where NOC is leading in this space is in the development of net zero oceanographic capability. We published a ground-breaking report on this, leading to the Natural Environment Research Council developing its own programme for across the whole community. As others set their own net-zero targets, NOC can work in partnership with industry to inform and advise on solutions and mitigation.

We continue to raise awareness of the ocean with public and policy makers, and we celebrated World Ocean's Day this year with a stakeholder event for Government colleagues and donors, and a huge Open Day for thousands of members of the public to learn about the importance of the ocean and the role NOC plays in educating and advocating for its future health.

This is our third annual report as an independent charity, and my last as Chair because I reach the end of my term this year. I will miss working with NOC, but I step down knowing it is in good hands, with a very strong Board and a dynamic new Chair in Jeremy Darroch. I would like to thank my fellow Board members and all the staff at NOC, who strive to make a difference to the world through our work with the ocean.

JOHN HIRST CBE
FORMER CHAIR OF BOARD OF TRUSTEES

REPORT OF THE CHIEF EXECUTIVE

We took the opportunity of our third year of independence to ensure we are staying true to our core purpose – balancing our science and technology aspirations with our determination to diversify our income by working in new areas. As a result, we reviewed and refreshed our Purpose as an organisation with our staff, and we know that we unite around our goals with a shared passion.

We continue to play a vital role in the United Nations Decade of Ocean Science, and have led and partnered on a number of projects endorsed this year. We have grown our activity influencing domestic and global agendas, with our experts advising the UK Government at G7 fora and international meetings, as well as providing the scientific evidence and expertise on key ocean issues with our own Parliamentarians at home, through Select Committees, events and Party Conferences. There is no doubt that NOC is ensuring conversations and decisions about the ocean are based on sound science and innovation leadership.

I was particularly proud of our work with the Government of Saint Lucia this year, through the Disaster Vulnerability Reduction Project. We installed three new tide gauges to help reduce the island's vulnerability to natural hazards and climate change. The network of tide gauges will continuously measure and report sea level and tidal variability, providing valuable information to local seafarers and port authorities, as well as being an important addition to the Caribbean Early Warning System for tsunamis and other coastal hazards.

This example clearly illustrates how observing the ocean remains fundamental to understanding its effect on human lives. This year, we led a review of the UK funded ocean observations, both in the context of our own science and as global contributors to the shared efforts in this area. We will publish the outcomes of this and make recommendations to the Natural Environment Research Council on what the UK priorities are in this area. Our world leading developments in observing were also recognised by industry, when Teledyne chose NOC to service all of its European gliders. This year, we celebrated the 25th anniversary of our first underwater autonomous vehicle mission, so it was a great time to reflect how far we have come in this technology.

Thank you to every person and every team at NOC. Our staff continue to be our greatest assets and we were proud to be awarded our Silver accreditation by Investors in People this year. We continue to house world leaders; nurture our own talent, and build teams that support our organisation to grow and thrive.

PROFESSOR ED HILL CBE
CHIEF EXECUTIVE
27 APRIL 2023

CHARITABLE PURPOSE & OBJECTS

NOC's charitable objects, which were developed to benefit the public and the world in which we live together, are as follows:

THE ADVANCEMENT OF SCIENCE, in particular enhancing the scientific knowledge and understanding of oceanographic sciences, and the ocean and its interaction with the earth system, and facilitating the use and application of that knowledge and understanding, particularly by:

a. Undertaking and causing to be undertaken research including through technology development, experimentation, analysis, long term ocean observation, monitoring, mapping, survey and modelling of a high international standard and disseminating the useful results of research.

b. Providing access to scientific research and technology development facilities and infrastructure including research ships and other measurement platforms and systems to the ocean science community.

c. Obtaining, managing, curating and providing access to digital data, samples and other specimens.

d. Being the UK national focus for ocean science, exercising leadership for and promoting co-operation with the wider UK science community, and providing national and international visibility and expert representation for oceanographic sciences.

e. Innovation or by encouraging and supporting innovation.

THE ADVANCEMENT OF EDUCATION IN OCEANOGRAPHIC SCIENCES, and the ocean and its interaction with the earth system and relationship with people, particularly by:

a. Contributing to the education (particularly post graduate higher education), training and development of the next generation of scientists, engineers, technologists including the supervision of postgraduate research students.

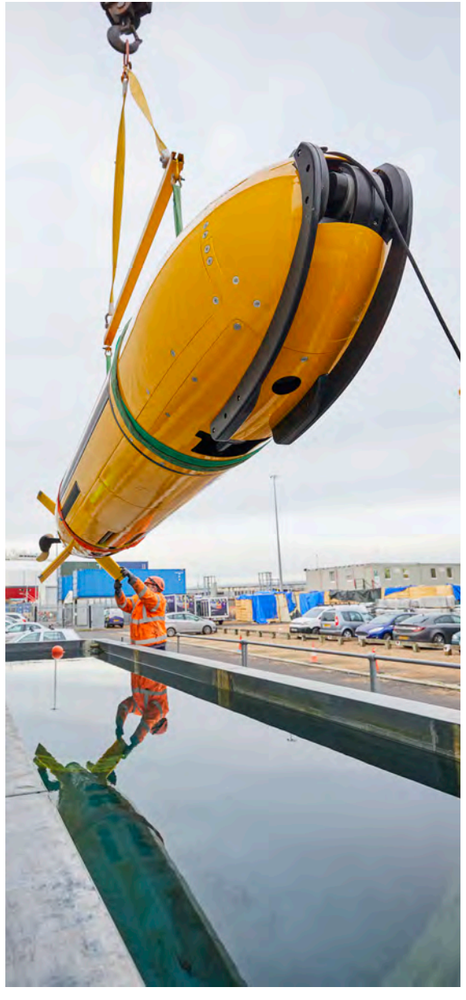
b. Supporting the building of marine research scientific and technical capacity in other countries around the world.

c. Communicating with and engaging with the public in relation to ocean science and technology through seminars, talks, leaflets, papers and other means.

OUR BENEFICIARIES

We exist to make a difference, so our beneficiaries are at the forefront of all we do. They include:

- **The public all over the world** - inspiring, informing and educating.
- **Marine life and ecosystems** - protecting our world so it works in harmony.
- **Scientists, engineers and researchers** - nationally, internationally and in developing countries.
- **Young people and students** - encouraging study, research and careers in oceanography.
- **Government** - informing decision making through robust evidence.
- **Offshore operators** - ensuring those who use the ocean do so in a safe and sustainable way.
- **NOC teams** - making sure our people have a career that inspires and motivates them.



OUR VISION, MISSION & VALUES

OUR VISION

Our vision for the NOC is by 2025 to be seen as the world's most innovative oceanographic institution.

OUR MISSION

Our main mission is to make sense of changing seas, upon which future human prosperity and well-being depends. The way in which we intend to achieve our mission is by:

- undertaking and enabling world-class science and technology development;
- providing large research facilities and access to data and samples for the benefit of UK science; and
- creating value and public benefit by supporting, with scientific evidence, the development of public policy, hazard assessment, ocean governance and regulation, and sustainable development.

Going forwards, we will better exploit the synergies across these different supporting pillars of our mission to drive novel and innovative approaches to our work, enabling us to do things that are distinctive and that few others could do.

OUR VALUES

EXCELLENCE

ENVIRONMENTAL RESPONSIBILITY

INNOVATIVE THINKING

INTEGRITY

EMPOWERMENT

WORKING IN PARTNERSHIP

PUBLIC BENEFIT STATEMENT

In setting the vision and mission for the NOC, the Trustees gave due consideration to the guidance on public benefit, as outlined by the Charity Commission of England and Wales and the Scottish Charity Regulator OSCR.

NOC's key driver for selecting topics for research is always what will take ocean science forward for the furtherance of our charitable purpose, our touch stone in all endeavours is increasing knowledge to deliver public benefit.

To enable the organisation and individuals to exercise independent discretion in this decision making we have established an Activity Decision Tree. Its general principles are applied when deciding whether activity is routed through the National Oceanography Centre (NOC) or the trading subsidiary: National Oceanography Centre Innovations Limited (NOC Innovations Ltd). This includes examination of ethical considerations, reputational risks, organisation and scientific independence of NOC, where the benefit is accrued and risk and mitigations thereof.

Where contract research is undertaken by NOC we do so in line with the Commission's guidance on Research by Higher Education Institutions, and ensure it is funded at full economic cost, often by matching funding across the portfolio. NOC retains scientific control of any IP licensed so that it can continue to advance science and technology for the benefit of the public.

NOC and our trading subsidiary, NOC Innovations, bring benefits in a number of ways, including through scientific research, marine technology, education, information and advice. Through our work, we aim to do five things:

GROW MARINE-BASED ECONOMIES WHILST PROTECTING THE OCEAN'S FUTURE HEALTH

PROTECT PEOPLE AND ECONOMIC INFRASTRUCTURE FROM MARINE-RELATED DISASTERS

MAKE SENSE OF GLOBAL ENVIRONMENTAL CHANGES IN WHICH THE OCEAN IS DEEPLY IMPLICATED

ADVOCATE FOR THE OCEAN BY EDUCATING AND ENGAGING HUMANKIND IN UNDERSTANDING ITS ROLE IN OUR LIVES

ADDRESS ISSUES OF NATIONAL IMPORTANCE REQUIRING INTERDISCIPLINARY SCIENCE; A STRONG EMPHASIS IN GLOBAL INFLUENCE

OUR BOARD OF TRUSTEES

JEREMY DARROCH
INCOMING CHAIR OF THE BOARD

For 14 years, Jeremy has been instrumental in leading Sky into a new era of environmental awareness with a substantial commitment to environmental sustainability. He helped launch major initiatives designed to bring awareness to the challenges facing the environment.

DAVID GEE
AUDIT AND RISK COMMITTEE CHAIR

David is a strategically orientated senior business manager and finance professional with a focus on value creation with a proven track record of strategic definition and management.

SARAH KENNY OBE
REMUNERATION COMMITTEE CHAIR

Sarah is the Chief Executive Officer at the BMT Group, a leading international multi-disciplinary engineering, science and technology consultancy offering a broad range of services, particularly in the defence, energy, environment, shipping and ports and logistics sectors.

JOHN HIRST CBE
FORMER CHAIR OF THE BOARD

John is a highly experienced business leader in both the private and public sectors serving at board level for over 20 years. His previous roles include CEO of the Met Office, where he was also the UK Permanent Representative to the World Meteorological Organisation. He is also chairman of BSI and Anglian Water.

DR RUTH BOUMPHREY

Ruth is the Chief Executive Officer at Lloyd's Register Foundation, a global charity protecting life and property and supporting education, engineering-related research and public engagement.

PROFESSOR SIR IAN BOYD FRS

Ian is a marine and polar scientist who was Chief Scientific Adviser to the UK Government on Food and the Environment. He is currently a Professor at the University of St Andrews and the Chairman of the UK Research Integrity Office.

NOC EXECUTIVE ATTENDEES

Professor Ed Hill CBE
Julie Pringle-Stewart, Company Secretary
Professor Angela Hatton

OBSERVERS

NERC

Victoria McMyn (Up to June 2022)
Nigel Bird (July 2022 onwards)

NOC Association

David Thomas (Up to December 2021)
Mark Inall (January 2022 onwards)

DANIEL HOOK

Dan is a Naval Architect and Chartered Engineer with over 18 years' experience in the marine industry. Dan worked as a naval architect on the development, testing and trials of a wide range of specialist craft. He is now the Chief Technology Officer of Ocean Infinity and Director of several start-up marine tech companies.

DR SARAH MCMATH

Sarah is the Chief Executive Officer, of Market Operator Services Ltd (MOSL). MOSL allows 1.2 million businesses, public sector bodies, charity and not-for-profit organisations in England to choose who provides their water retail services.

OUR STAKEHOLDERS

During the year, NOC has continued developing its formal framework for engagement with stakeholders, led by the Executive Committee, with the Board being briefed on and involved with setting the strategy.

The Board reviewed its interaction with stakeholders, and that of NOC as a whole, as part of its annual Board Effectiveness review in September 2021 and is developing actions to embed and extend this further during the next financial year.

SCIENTISTS, ENGINEERS AND RESEARCHERS	Enabling scientists and researchers is one of our core goals, with activities including operating research ships; providing key data; as well as marine robotics facilities.	Goal 3 Innovate Goal 4 Enable
MARINE RESEARCH ORGANISATIONS AND PUBLIC AUTHORITIES	We are the hub of many marine networks, providing us with a position of authority and influence, including through the NOC Association of Marine National Capability Beneficiaries; the Marine Facilities Advisory Board; and the Cruise Programme Review Group, which provide formal feedback to us from beneficiaries around major areas of our activities. Our work allows collaborative relationships with national and international marine institutions, as well as government.	Goal 1 Advance
PUBLIC IN THE UK AND WORLDWIDE	Despite the challenges of the last year, which limited in-person opportunities, our public engagement has successfully continued, including virtual events such as World Oceans Day.	Goal 2 Share
YOUNG PEOPLE AND STUDENTS	We continue to work closely with universities, including the Universities of Southampton and Liverpool, and collaborate with schools within our local area.	
EMPLOYEES	We continue to be driven by our values, engaging with our people; Trade Unions; and developing our Equality, Diversity and Inclusion approach.	Goal 7 People and Culture
FUNDERS	We regularly engage with funders day to day through the delivery of projects, as well as through more formal interactions with Board Observers from UKRI-NERC and strategic meetings.	Goal 5 Grow & Diversify
SUPPLIERS	Our Procurement team engage with suppliers from tender stage to delivery, building good relationships and high standards.	Goal 6 Governance

OUR EXECUTIVE COMMITEE

PROFESSOR ED HILL CBE
CHIEF EXECUTIVE

PROFESSOR ANGELA HATTON
DIRECTOR OF DATA, SCIENCE AND TECHNOLOGY

JULIE PRINGLE-STEWART
CHIEF OPERATING OFFICER, CHIEF FINANCIAL OFFICER

CAIT ALLEN
ASSOCIATE DIRECTOR ENGAGEMENT

NATALIE CAMPBELL
ASSOCIATE DIRECTOR CORPORATE BUSINESS SUPPORT

PROFESSOR DOUG CONNELLY
ASSOCIATE DIRECTOR SCIENCE AND TECHNOLOGY

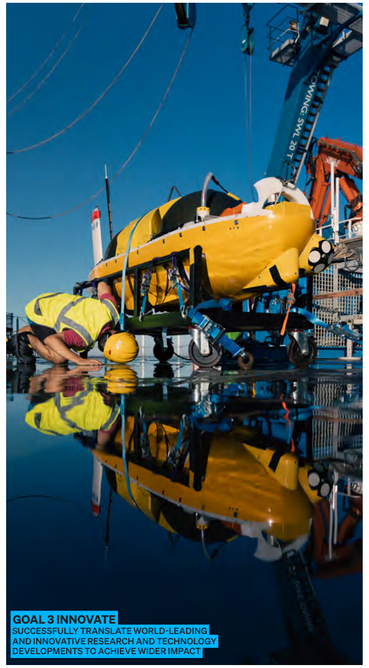
DR MAATEN FURLONG
ASSOCIATE DIRECTOR NATIONAL MARINE FACILITIES

HUW GULLICK
ASSOCIATE DIRECTOR NOC INNOVATIONS

DR JOHN SIDDORN
ASSOCIATE DIRECTOR DIGITAL OCEAN

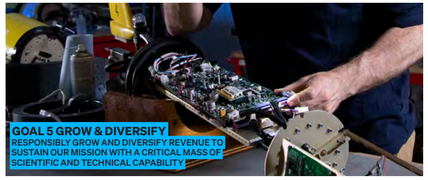
GOAL 1 ADVANCE
UNDERTAKE INTERNATIONALLY EXCELLENT RESEARCH AND TECHNOLOGY DEVELOPMENT TO ADVANCE THE FRONTIERS OF KNOWLEDGE ABOUT THE OCEAN

GOAL 2 SHARE
CREATE PUBLIC BENEFIT FROM ALL OF NOC'S CAPABILITIES



GOAL 3 INNOVATE
SUCCESSFULLY TRANSLATE WORLD-LEADING AND INNOVATIVE RESEARCH AND TECHNOLOGY DEVELOPMENTS TO ACHIEVE WIDER IMPACT

GOAL 4 ENABLE
PROVIDE WORLD-CLASS UNDERPINNING CAPABILITIES THAT ENABLE THE UK AND GLOBAL OCEAN SCIENTIFIC ENDEAVOUR



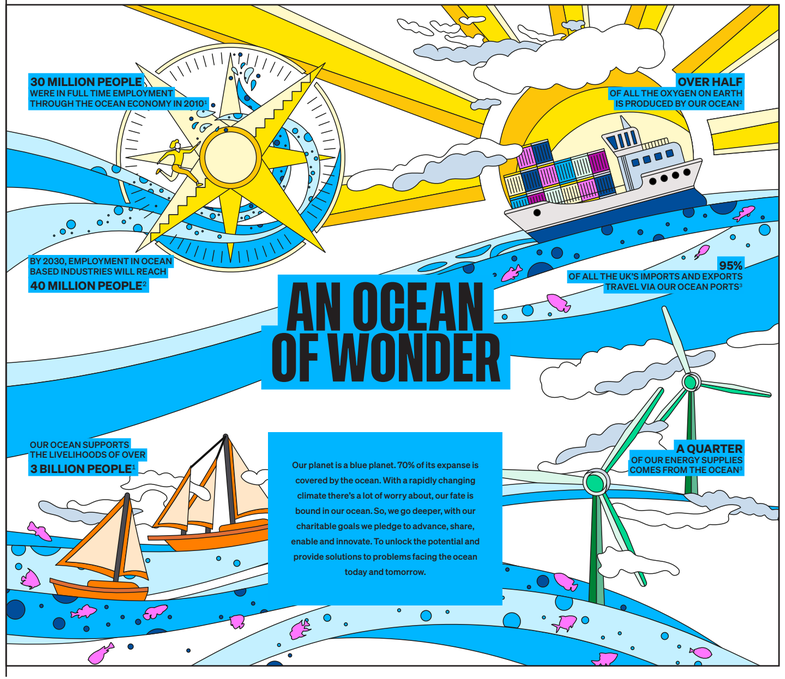
GOAL 5 GROW & DIVERSIFY
RESPONSIBLY GROW AND DIVERSIFY REVENUE TO SUSTAIN OUR MISSION WITH A CRITICAL MASS OF SCIENTIFIC AND TECHNICAL CAPABILITY

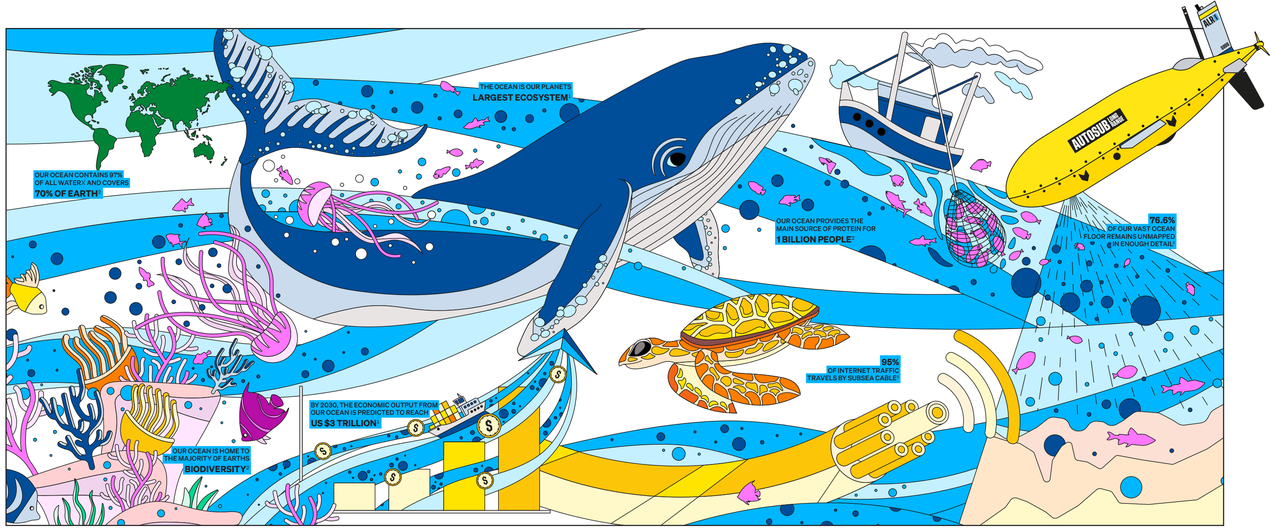
GOAL 6 GOVERNANCE
TRANSFORM THE WAY NOC IS GOVERNED AND OPERATED

GOAL 7 PEOPLE & CULTURE
INVEST AND REINVEST IN NOC AND ITS PEOPLE

DELIVERING OUR STRATEGIC GOALS

The delivery of our five-year strategy is structured around seven clear goals, each of which links directly to our Charitable Purpose and Objects. Together with the Board of Trustees, our Executive Committee are united in the delivery of these goals as well as living by our values every day.





[1]The Sustainable Development Goals Report 2022 (Unstats.un.org/sdgs/report/2022) & Sustainable Development Goal 14 (sdgs.un.org/goals/goal14)
[2]UN World Oceans Day 2022 (un.org/en/observances/oceans-day) [3]National Oceanography Centre (noc.ac.uk) British Oceanographic Data Centre (bodc.ac.uk)

1/4

OF GLOBAL ANNUAL CO_2 EMISSIONS ARE ABSORBED BY OUR OCEAN

93%

OF EXCESS HEAT FROM CLIMATE CHANGE IS ABSORBED BY OUR OCEAN

"The second report from the IPCC emphasises that climate change is a major threat to human wellbeing and the health of the planet. It has highlighted that climate change is continuing to cause substantial damage to open ocean marine ecosystems.

Ocean warming and acidification have adversely affected food production from fisheries in some oceanic regions, and forecast levels of climate change, plus habitat destruction, will lead to the loss of much of the world's coral reefs and low-lying coastal wetlands.

The next 20-50 years will see a change in the Earth's climate, and how that will affect nature and humans will depend on how plants, animals and people adapt.

There is a rapidly closing window of opportunity to both reduce greenhouse gas emissions and develop climate resilient adaptation measures. By conserving, protecting and restoring ocean ecosystems, we can reduce the vulnerability of biodiversity to climate change."

PROFESSOR STEPHANIE HENSON
PRINCIPAL SCIENTIST, NATIONAL OCEANOGRAPHY CENTRE

DISCUSSING THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE (IPCC) SIXTH ASSESSMENT REPORT

"Tide gauge records provide robust observational evidence that sea level around the UK continue to rise due to increased rate of ice loss from the Greenland and Antarctic ice sheets, as well as continued glacier mass loss and warming of the ocean.

Our long term records show that over the past few decades the rate of sea level rise in the UK is increasing. As sea levels rise there can be greater impacts from storm surges. Last year storm surges of over 1.5m were seen during Storm Arwen, but extreme sea levels were avoided as this occurred during low water and a neap tide.

DR SVETLANA JEVREJEVA
PRINCIPAL SCIENTIST, NATIONAL OCEANOGRAPHY CENTRE

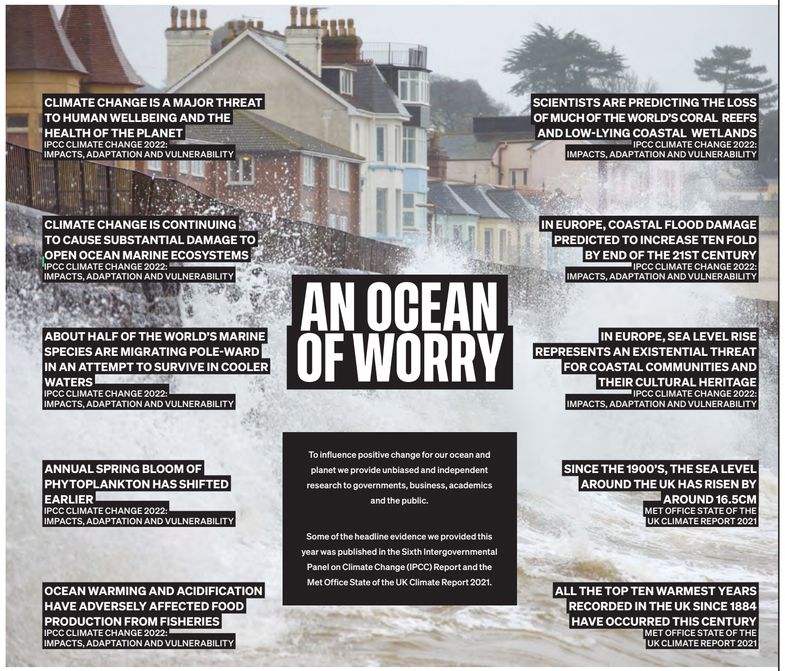
DISCUSSING THE MET OFFICE STATE OF UK CLIMATE 2021 REPORT

50%

LOWER ATMOSPHERIC CO_2 LEVEL IS ONLY POSSIBLE DUE TO THE CONTRIBUTIONS OF THE 'BIOLOGICAL CARBON PUMP'[2]

2/3

OF BRITISH PEOPLE SURVEYED SUPPORT INVESTMENT INTO SEA LEVEL MONITORING SYSTEMS TO TACKLE COASTAL FLOODING



GOAL 1
ADVANCE

Undertake internationally excellent research and technology development to advance the frontiers of knowledge about the ocean

To solve the huge problems facing our world and climate today, we need to go deeper. We need to go further in our thinking than ever before. That's why with the intellect and dedication of world leading scientists we've pursued deeper understanding and have collaborated on the most influential, agenda setting research and reports this year, both at home and internationally. Whilst our facts highlight threats to human wellbeing our long-term goal to advance solution-focused work continues stronger than ever. We are committed to not only understand the issues better but to mitigate the impacts on our coasts and deep ocean.

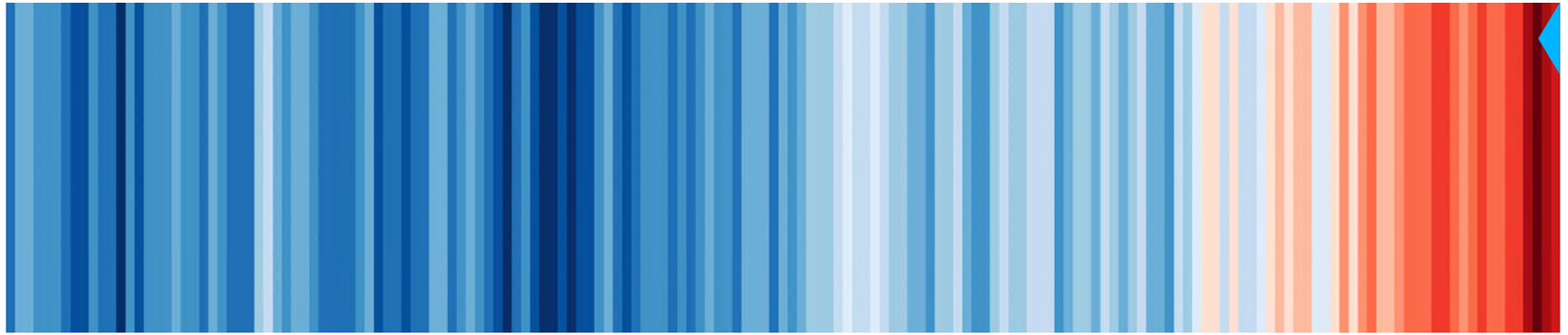
197
RESEARCH PAPERS PRODUCED

154
GOLD OPEN ACCESS RESEARCH PAPERS

9
GREEN OPEN ACCESS RESEARCH PAPERS

34
NON-COMPLIANT RESEARCH PAPERS

83%
OF ALL RESEARCH PAPERS ARE OPEN ACCESS



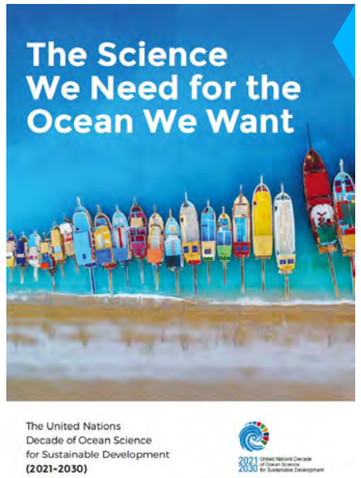
Hawkins, Ed, 2018. "Warming stripes for 1850-2018" Climate Lab Book. 4 December 2018. Creative Commons Attribution-ShareAlike 4.0 International License.

PREDICTING CHANGE

From real life ocean observations, we can inform digital climate models to forecast how the world will respond to climate change caused by increasing carbon dioxide in the atmosphere.

UN Ocean Decade endorsed initiative FLAME will act as the international focal point and coordinator for understanding the impacts of future climate change in the global coastal ocean.

Within the project we'll generate innovative, high-resolution, projections of future coastal ocean climates and the impacts on coastal ecosystems, hazards, services and resources. We will do this at the local-regional scales necessary for informed decision making across a range of polar, temperate, subtropical and tropical regions.



OCEAN EYES

At the 2021 United Nations Climate Change Conference, more commonly referred to as COP26, we called for investment in the global ocean observation system, after all, how can we manage what we cannot measure. We're nothing without quality data so this action is imperative to fulfil our collective stewardship responsibility and understand the effects of climate change on human life, economic, and environmental wellbeing.

To fully realise this service, we must expand our view of the value of ocean observing and move towards a sustained observing system to deliver crucial information to stakeholders and policymakers. UN Ocean Decade endorsed initiative AtlantOS, supports Atlantic basin scale implementation by identifying and fostering collaborative partnerships among user communities and ocean observing and data networks. AtlantOS is actively building formal relationships with international bodies and AtlantOS-connect will facilitate engagement with national and regional entities, connecting observing networks and providing visibility to the common challenges, needs and opportunities of Atlantic communities.

STRENGTH IN NUMBERS

We joined with other leading UK climate science organisations to develop a new national alliance focused on climate solutions for society. Together, with six Natural Environment Research Council (NERC) supported centres and the Met Office, we will work together as the new UK National Climate Science Partnership (UKNCSP) to respond to threats posed by a rapidly changing climate by putting climate science at the forefront of the solutions agenda.

Recognising the urgency of accelerating action towards the goals of the Paris Agreement and UN Framework Convention on Climate Change, the UKNCSP will play a leading role in the development of an end-to-end climate strategy.

The solutions-focused approach is supporting the UK Government in developing and evaluating solutions to the challenges of mitigating and adapting to climate change. The partnership will also work with the public and private sectors to ensure decision makers and businesses have access to the climate information they need, in order to build resilience and adapt to the pressing challenges of the coming decades.

"The UK has world-leading capabilities for monitoring, modelling and predicting UK and global climate change and its impacts. We need to continue to develop these capabilities to address new challenges, provide early warning of potential high impact changes that may emerge and evaluate specific policy options to mitigate and adapt to climate change. The UKNCSP provides the foundations to enable the UK to continue to lead in these areas."

PROFESSOR ANGELA HATTON
DIRECTOR OF SCIENCE AND TECHNOLOGY, NATIONAL OCEANOGRAPHY CENTRE

BLUE MEADOWS

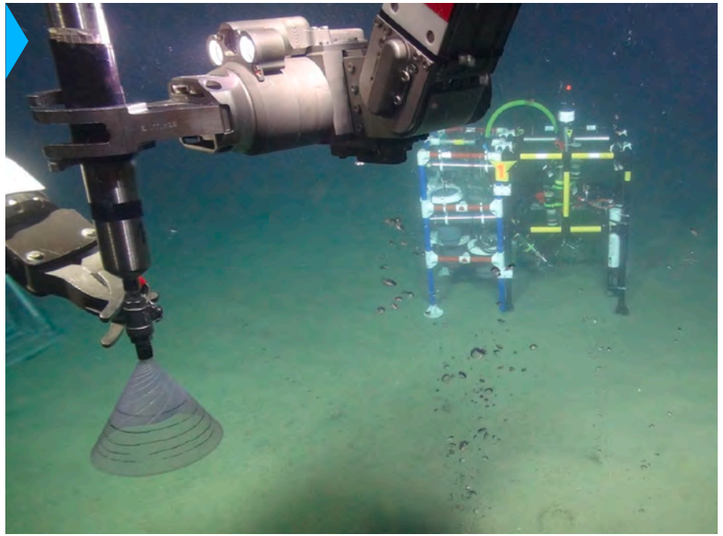
A study underway on the Isle of Man is investigating, for the first time, the Island's marine and coastal role in storing carbon to help mitigate climate change.

Blue carbon habitats like seagrass meadows, which are found around the Isle of Man, capture significant amounts of carbon, and they can also protect coastal communities against storms and flooding, improve ocean health and provide habitats for a multitude of species and commercially important fisheries. Understanding the management and restoration of these environments supports the Manx government's ambition to achieve carbon neutrality on the Isle of Man by 2050.

CARBON VAULT

In a world-first, our research off the coast of Scotland suggested that storing carbon dioxide (CO_2) under the sea is both viable and safe.

The process known as carbon capture and storage (CCS) is regarded as one of the more effective tools in the fight against climate change. The process involves separating the CO_2 generated during industrial processes and injecting it directly into rock formations or depleted oil and gas reservoirs deep underground. Evidence from our pilot study will now help inform the direction of technology development for the long-term monitoring of offshore CO_2 storage reservoirs. It is a huge step forward in assuring regulators that this process is safe by being able to monitor any potential leaks as well as assess any potential damage to marine life.

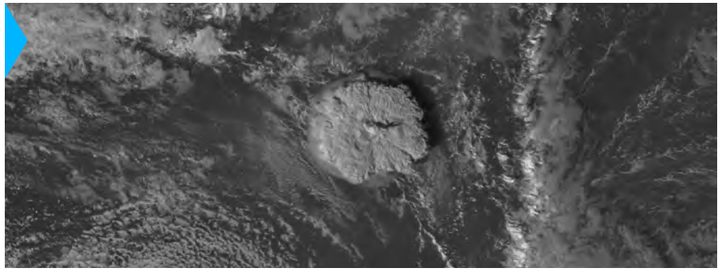


RAPID RESPONSE

The eruption of the Tongan Volcano Hunga Tonga – Hunga Ha'apai, which culminated in the most explosive eruption in more than a hundred years, took the world by surprise and highlighted a global vulnerability to large magnitude volcanic events. The most explosive phase of the eruption broke the only seafloor telecommunication cables that connected the Kingdom of Tonga to international telecommunications; effectively cutting an entire nation off from the rest of the world for more than 5 weeks, at a critical time for disaster response.

Commitment to our Values and Sustainability and Social Responsibility Strategy (see Goal 7) saw us rally into action and form an international collaboration. Working with the National Institute of Water and Research (NIWA), New Zealand, the Japan Agency for Marine-Earth Science and Technology (JAMSTEC), collaborators across the Kingdom of Tonga and subsea cable companies we coordinated ambitious research to understand the processes that drove the eruption and the resultant cascades of hazards.

We led a NERC Urgency Grant, which enabled seafloor surveys to be performed within 2 months of the event - revealing powerful seafloor flows were triggered by the eruption, travelling at fast speeds over tens of kilometres, explaining the widespread damage to seafloor telecommunications cables. These findings were immediately transferred to local stakeholders and subsea cable companies to select optimal locations for the repaired cables and design new cable routes that are required to improve resilience in the region.
The power of the Hunga Tunga – Hunga Ha'apai eruption was unexpected, but there are many similar volcanoes along the Tongan Volcanic Arc. A new NERC Global Seedcorn project aims to improve our knowledge of these kinds of hazards, identifying other volcanoes that pose a similar risk. This research builds on our strong background in assessing threats to critical infrastructure and volcanic hazard research across the Pacific including a similarly rapid response to the 2019 eruptions of Tongan Volcano F and Late'iki.



SAFTEY FIRST

Working on behalf of the Government of Saint Lucia through the Disaster Vulnerability Reduction Project we installed three new tide gauges to help reduce the island's vulnerability to natural hazards and climate change. The network of tide gauges will continuously measure and report sea level and tidal variability, providing valuable information to local seafarers and port authorities, as well as being an important addition to the Caribbean Early Warning System for tsunamis and other coastal hazards.

Alongside an existing tide gauge installed by NOC under the Commonwealth Marine Economies Programme in 2016, the data from these gauges will be transmitted in near real-time to the Sea Level Station Monitoring Facility, enabling the data to be publicly accessible globally.

With the frequency of coastal inundation due to storm surges projected to increase and global mean sea level likely to rise by up to 0.23m by 2050*, the installations will help local planning authorities to decide how high to build coastal defences to protect coastal populations from the dangers of flooding. In addition, the gauges will enable the Saint Lucia Meteorological Service to produce tide tables that show times and heights of sea level to aid safe navigation and port operations.

GOAL 2
SHARE

Create public benefit from all of NOC's capabilities

Our science must go deeper than just gaining academic understanding. Understanding needs to translate into awareness, action and positive change. That's why we're inspiring and empowering the next generation of ocean scientists and technologists through community events, school projects, education resources and online engagement. We're helping young people have a deeper connection and a deeper understanding of the ocean. We passionately believe positive change for the planet starts with ocean literacy.

SMALL BUT MIGHTY

Our scientists, engineers and mariners worked with students from King Edward VI School in Southampton to send a miniature research sailboat on a 46-day expedition of discovery.

Named 'KES Kraken' by the students, the mini-boat was built over several weeks as part of a hands-on afterschool project. The students equipped it with a sail and a satellite tracker, as well as a unique suite of scientific sensors, that enabled them to track in real time the air and water temperature and compare it to NOC research.

During the build, to support our commitments to ocean literacy, NOC scientists dropped in to provide support and educational talks on ocean and environmental issues including microplastics and climate change.

Once complete KES Kraken was launched into the Atlantic Ocean by our crew on board RRS Discovery on the 19th February. After 46 days at sea KES Kraken was successfully recovered on the shores of Brazil having travelled 40,000km and provided the captivated students a unique and unforgettable experience.

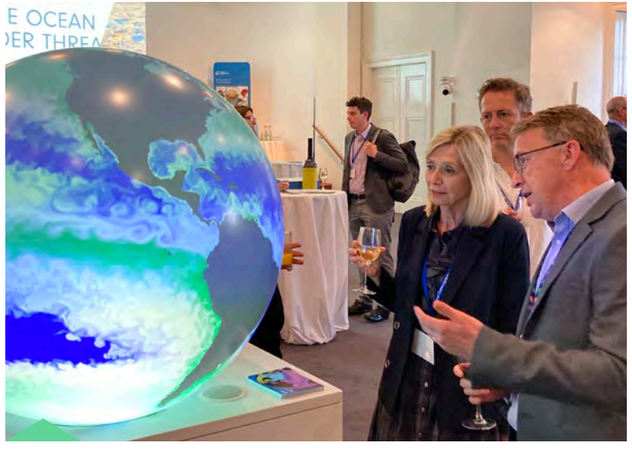
The King Edward VI School project is a collaboration between NOC, Educational Passages non-profit and EU Interreg iFADO project, with additional support from the EU-funded GOCART project and the NERC-funded DIAPOD projects.

"I hope all students involved in the project were inspired by the NOC experts who visited the school, and have dedicated their careers to science. It was also wonderful to see Sixth Form assisting younger students with the project."

DR MAYOR
TEACHER,
KING EDWARDS VI SCHOOL

"We really enjoyed working with this group of young students to engage them in oceanography in such a unique way. It's so important to inspire people from a young age, especially on crucial environmental issues like climate change and microplastics that they might not otherwise be exposed to in school."

DR B.B. CAEL
RESEARCHER, NATIONAL OCEANOGRAPHY CENTRE



1207
ONLINE DELEGATES

2759
VIEWS ON DEMAND

175K
SOCIAL MEDIA REACH

WORLD OCEAN DAY

In London our Board of Trustees and Executive team welcomed friends, supporters and Ocean Alliance partners from across government and business who, like us, recognise the need to act to protect our ocean and our planet.

Our position as the UK's leading marine charity, having left the public sector in 2019, allows us to unite and explore new innovative opportunities. Keynote speaker The Right Honourable Lord Goldsmith, Minister of State for the Pacific and the International Environment, acknowledged our work has been key to understanding the urgency with which we need to act to protect our ocean.

Internationally, as part of the United Nations Ocean Conference, we partnered with aligned research organisations, UN agencies and industry partners in delivering many side events. We participated on a number of exciting panels to raise awareness and champion ocean sustainability, women leadership and empowerment, and inclusive governance. All causes supported by our vision, vision and values.

Digitally, our education focused hybrid event on site in Southampton, UK allowed us to broadcast live into classrooms and homes internationally. Our experts shared knowledge on the challenges we face, as well as the solutions we're helping to advance.

4140 TOTAL "OCEAN SCIENCE IN ACTION" MOOC LEARNERS

2271 TOTAL ACTIVE MOOC PARTICIPANTS

721 FULLY COMPLETED MOOC COURSES

145 COUNTRIES WITH MOOC PARTICIPANTS

4199 INTERACTIVE COMMENTS

3 MARINE TECHNOLOGIES

4 CASE STUDIES IN THE INDIAN OCEAN

MOOC

The highly successful Massive Open Online Course (MOOC) ran for its fifth year with 2021-22 seeing new lectures launched on Somalia upwelling and fisheries.

The free course introduces learners to innovative marine technologies and their applications used to tackle the challenges of the sustainable management of marine ecosystems. Digitally, our education focused hybrid event on site in Southampton, UK allowed us to broadcast live into classrooms and homes internationally. Our experts shared knowledge on the challenges we face, as well as the solutions we're helping to advance.

889

PODCAST LISTENS SINCE LAUNCH ON WORLD OCEANS DAY 2022

957

VIDEO VIEWS SINCE LAUNCH ON WORLD OCEANS DAY 2022

CASTING FURTHER

Into the Blue is our latest free and online resource designed to share our understanding of the ocean environment and enable everyone to dive deeper.

In each episode we unravel the complexity of issues facing today's ocean and the variety of ways a healthy ocean supports human wellbeing and prosperity. These conversations complement the already popular 'Under the Surface' pages on our website, giving even more accessibility to ocean literacy. The podcast introduces the wealth of talented scientists and engineers working at NOC and gives them a platform to educate and inform about their passion projects and world leading work.

OCEAN NEWS

We pride ourselves on being the spokespeople for the ocean, we're a trusted source of facts and our people are passionate. We share stories of our research and experiences in lots of different ways to turn ocean worriers into action advocates. You've likely seen some of our work on the news, or in a magazine, you may have read our newsletters or visited our website. If so, we're delighted you've joined us as part of our growing ocean news community.

5763 OCEAN NEWS EMAIL SUBSCRIBERS

64K TOTAL SOCIAL MEDIA AUDIENCE

1846 TOTAL PODCAST VIEWS AND LISTENS

626 PIECES OF MEDIA COVERAGE

191.1M TOTAL MAINSTREAM MEDIA REACH

788K TOTAL TRADE MEDIA REACH

596K UNIQUE PAGE VIEWS ACROSS NOC WEBSITE

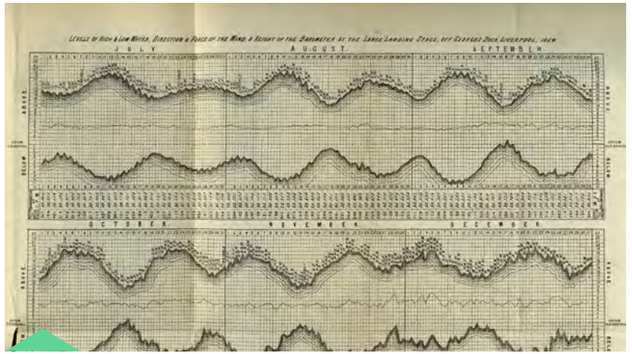
77K UNIQUE PAGE VIEWS ON NOC NEWS STORIES

103 NOC NEWS STORIES PUBLISHED ON WEBSITE

TRUST TRAINING

Microplastics are of emerging global concern, due to their potential to cause harm across eco systems, but more data is needed about their spread in the ocean, and their interaction with plankton – a food source for many aquatic organisms.

In order to fill this data gap, we're training citizen scientists at The Wildlife Trusts to generate a microplastic and plankton time-series using Stanford University's PlanktoScope. The PlanktoScope, a low-cost flow imaging microscope, is composed of a Rapsberry Pi computer and a camera, two lenses for magnification and a flow system. The flow system affords efficient imaging of microscopic particles in a water sample as they move past the camera.



TIDE OF SUPPORT

Over 3,800 volunteers from The Zooniverse, an online citizen science platform, helped to digitise historical data of tides and sea level near Liverpool.

We launched the UK Tides Citizen Science Project in January 2021 and asked you to help transcribe hand-written tide data from two gauges in Hilbre Island and George's Pier between 1853–1903. The new data gathered will help the science community understand how tides and extreme sea levels have changed over the past two centuries and allow them to better quantify the risks we face from flooding in the future.

"Wildlife Trusts all over the country, at coastal locations and inland on our waterways are preparing to construct PlanktoScope to take a closer look at the animals and plants that lie hidden from the naked eye in our waters.

We are excited about the opportunities that having these specialised microscopes will bring. We hope to raise awareness of these tiny life forms and use the PlanktoScope to give us the ability to monitor long term and help us address conservation questions about the health of our waters, both fresh and salty. The adventure awaits!"

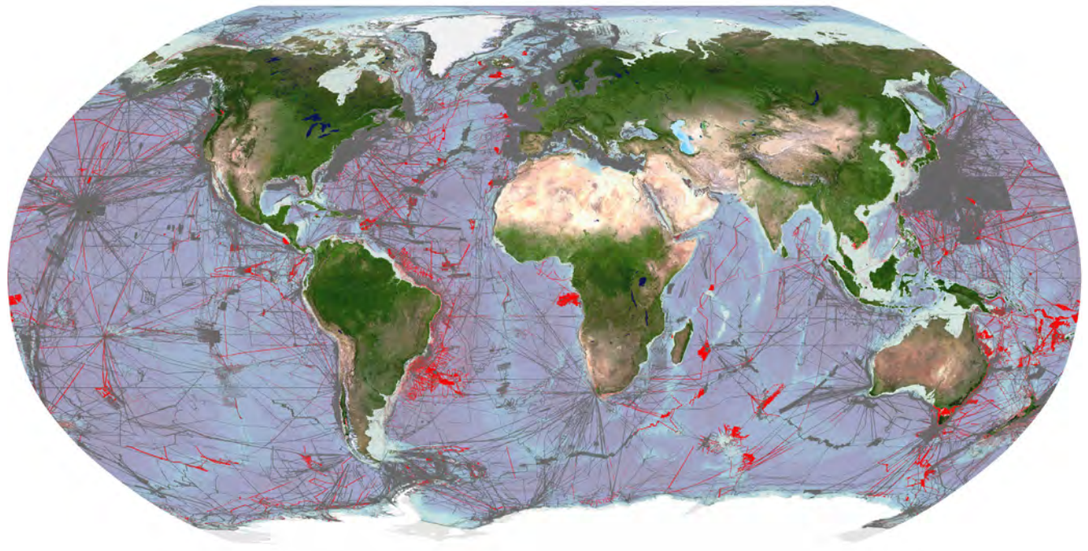
DR LISSA BATEY
HEAD OF MARINE CONSERVATION, THE WILDLIFE TRUSTSS

GOAL 3

INNOVATE

Successfully translate world-leading and innovative research and technology developments to achieve wider impact

The brilliant minds at the helm of ocean discovery need equally brilliant technology to push the boundaries of innovation. That's why the latest, cutting-edge technology plays a major underpinning role in our work. This technology doesn't just take us to the depths of the ocean, it gives us a deeper understanding of everything past, present and future, from the coast to deep ocean. From deep diving data, to pioneering measurement technology, we're living our value of innovation.



The Nippon Foundation-GEBCO Seabed 2030 Global Center (GDACC) on behalf of Seabed 2030

MAPPING UNKNOWN

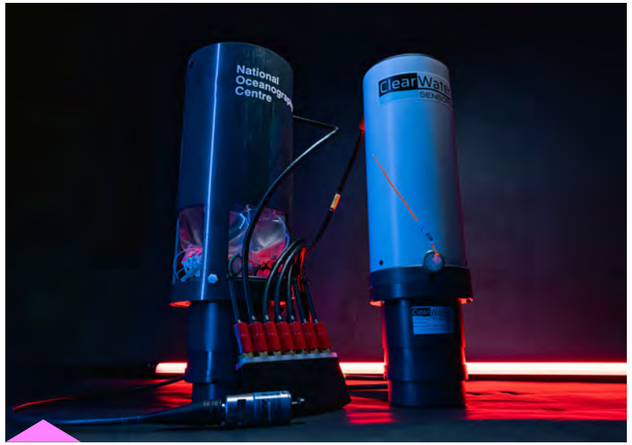
It covers 70% of our blue planet yet the ocean is still a greater mystery than our moon.

But Seabed 2030 is out to change that, endorsed by the UN Ocean Decade it's an international effort to chart the world's entire ocean floor. This year the total amount of sea floor mapped now stands at 23.4%, reflecting an increase of 10.1 million square kilometres of new bathymetric data. This increase is equivalent to an area around the size of Europe; and slightly larger than the Sahara - Earth's largest hot desert. As the global centre for Seabed 2030, NOC's British Oceanographic Data Centre brought together the regional compilations into a single, global, harmonised, data set. This will help identify underwater hazards and inform sustainable marine resource management and infrastructure development, ultimately saving lives.

76.6%

OF THE SEA FLOOR IS UNMAPPED IN ENOUGH BATHYMETRIC DETAIL

THE GEBCO SEABED 2030 PROJECT AIMS TO MAP THE WHOLE OCEAN TO THE ORDER OF TENS OF METRES IN SCALE BY 2030



INDUSTRY ALLIANCE

The launch of the BORA Blue Ocean Research Alliance™ has helped us bridge the gap between industry and science to support sustainable research and development. Together the Alliance is providing researchers access to hard-to-reach areas and sharing open access scientific data and knowledge at every step of the way.

The Alliance successfully developed a prototype essential ocean variable sensor box and deployed it for trials in the North Sea with Subsea7. The first complete box is now being commissioned in Brazil with Subsea7 on one of their client sites and will be in service for 18 months to supply key data on the health of the ocean in that region. There are also projects in development to research acoustic monitoring in deep-sea canyons and management of endangered species.

"With innovation at its heart, BORA Blue Ocean Research Alliance™ will help push the limits of scientific knowledge, setting the standard for collaboration between the industrial and scientific communities and delivering meaningful research on a global scale that will provide benefits for all communities."

HUW GULLICK
ASSOCIATE DIRECTOR,
NOC INNOVATIONS

DOUBLE ACT

Digital Twins, a virtual representation of an object or system, have the potential to be a massive step-change in the way we understand our evolving environment.

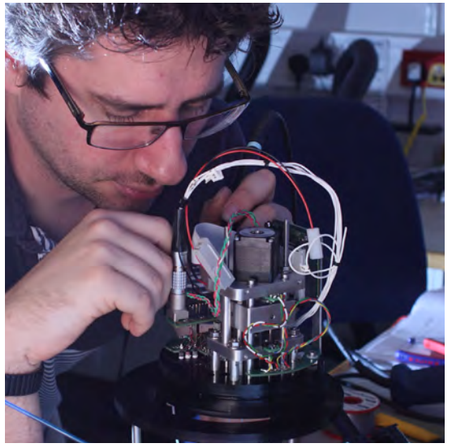
These intelligent systems, using simulations or data-based methods such as machine learning, are already revolutionising how some sectors work. Our experts are championing progress towards digital twins of the ocean and environment as they could be a solution towards net-zero targets and a paradigm shift in protecting and managing our ocean.

In pursuit of this vision our experts lead a community report, which has outlined the building blocks necessary for unlocking the true potential of environmental digital twins. The recommendations cover everything from a conceptual framework, management and governance, common language to pilot studies and computational architecture. This first report, 'An Information Management Framework for Environmental Digital Twins (IMFe)' is just the first collaboration into this exciting digital frontier.

CELEBRATING 10 YEARS OF LAB-ON-CHIP INNOVATION

Our ocean technology and engineering experts are at the forefront designing, creating and using novel sensors and instruments to collect these vital data, and continue to push research boundaries.

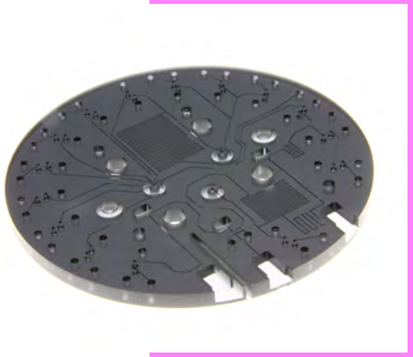
Lab-on-Chip (LOC) sensors are at the cutting-edge of today's ocean sensing technology. With reduced power consumption, cost and size compared to more traditional systems, longer deployments on a vast range of oceanographic platforms are now possible, enabling the advancement of scientific research undertaken in the most extreme marine environments. This year we celebrated 10 years since our first paper proving the LOC sensor worked, here are the top ten milestones from the decade that followed.



FIRST SUCCESSFUL FIELD DEPLOYMENT OF A LOC NUTRIENT SENSOR

After many years of research and experimentation, the first successful deployments of the LOC nutrient sensor platform took place in Southampton Water in 2011 and 2012.

The nitrate and nitrite sensors used microfluidics combined with sensitive chemical analysis techniques to make high quality in situ measurements of nutrient concentrations in the estuary over several weeks. Over the next ten years the LOC sensor platform would continue to develop to measure a wide range of chemical parameters, expanding capabilities for more cost effective, and carbon efficient ocean science.



PROVING LOW TEMPERATURE PERFORMANCE

The robustness and low temperature performance of the LOC sensors was put to the test in 2013 and 2015 when they were deployed to measure nitrate in glacial meltwater draining from the Greenland Ice Sheet.

In collaboration with the University of Bristol, sensors were deployed in proglacial melt-water streams close to Kangerlussuaq and Narsarsuaq in Greenland. The liquid reagents were modified with antifreeze so that they remained liquid at low temperatures.

LOC ON THE WORLD STAGE

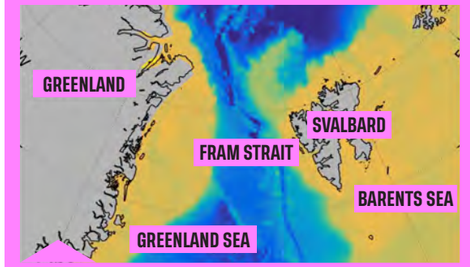
In 2014, NOC scientists and engineers took part in the high-profile international competition to develop pH sensors to measure changes in the acidity of the ocean.

We were proud to be one of only two organisations representing the UK in the Wendy Schmidt Ocean Health XPRIZE, which attracted all the major players from the global scientific community. The pH sensor we entered was very small in size, and based on a microfluidic design which requires very small volumes of seawater to generate a reading. It was also designed as an autonomous system able to operate on a number of oceanographic platforms and down to depths of several thousand metres.

GOING DEEPER WITH SEAGLIDER

In 2014, the LOC chemical sensor platform reached new depths when we re-designed it to facilitate deployment in the deep sea and on autonomous vehicles.

In 2015 we proved conception and saw the first successful deployment of a LOC sensor on an underwater glider. The sensor was integrated into a Kongsberg Seaglider, and was used to collect nitrate profiles in the Celtic Sea as part of the Shelf Seas Biogeochemisty programme. This was also the first deployment below 1000 m on CTD (conductivity, temperature, depth) instrument. CTD measurements are fundamental in understanding the physical structure of the ocean but also provide valuable contextual information for other co-located biogeochemical measurements. These deployments subsequently took place with phosphate & pH sensors.



A YEAR-LONG ARCTIC ADVENTURE

In 2015, the first year-long Arctic deployment of a LOC sensor took place, an event which saw two more firsts; the highest latitude and furthest north deployment of a LOC sensor.

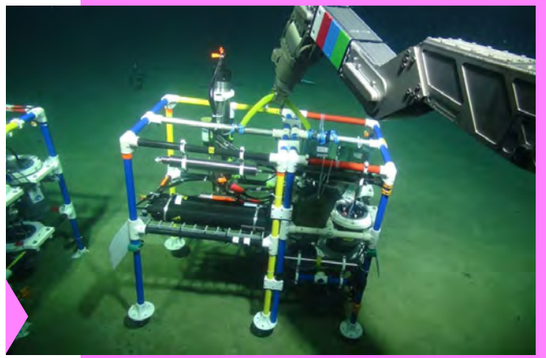
The ability to have long term unattended deployments in remote locations was one of the key goals when developing the LOC sensor platform. This was realised in 2015 when LOC nitrate sensors were successfully deployed for one year on moorings in Fram Strait. This was followed in 2018-2020 with a deployment just over a year-long of LOC sensors on a mooring in the south Pacific.

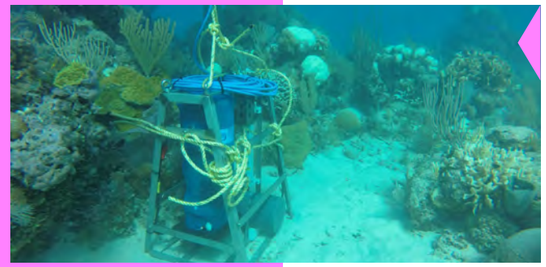
Map adapted from Bdushaw's map of the Fram Strait, licensed under the Creative Commons Attribution-Share Alike 3.0 license.

LARGEST EVER LOC DEPLOYMENT

The number of LOC sensors on a deployment scaled up significantly in 2019 when for the first time we operated 25 simultaneously as part of the STEMM-CCS project.

Before the project, a typical deployment involved two to four LOC sensors; making the jump to deploying 25 in one experiment a huge change in scale. The STEMM-CCS project created novel technology, including many new LOC sensors, to monitor the integrity of offshore CO_2 storage facilities. The main field campaign of the project saw the 25 LOC sensors operating simultaneously in the North Sea, measuring 5 different parameters. We deployed them on a variety of platforms including several landers, an ROV, and a ship's underway.





BUILDING CAPACITY FOR DEVELOPING STATES

In 2019, we provided an innovative pH LOC sensor to the Commonwealth Marine Economies (CME) Programme, which helped to build ocean sensing capacity in small island developing states.

The project first assisted the Belize Coastal Zone Management Authority and Institute through the installation of the sensor, which can measure in real-time (every two hours) the acidity, temperature, salinity and oxygen of sea water. LOC technology has enabled Belize to collect essential consistent data needed for important marine environment policy decisions. This success has now been shared with deployments of the pH LOC sensors in the Seychelles, Fiji and Dominica.

FIRST COMMERCIAL LOC SENSORS DELIVERED

Select types of LOC chemical sensor technology and their underpinning intellectual property was successfully licensed for commercial supply from NOC and the University of Southampton in 2019.

This led to the formation of a start-up company now known as ClearWater Sensors Ltd and together, as part of the Horizon Europe project "GEORGE", we will develop a new generation of high-performance sensors for the ocean carbonate system.

ICEBERG INVESTIGATIONS

In 2021, an expedition on the RV Polarstern saw many firsts for LOC technology.

The instruments provided the first nutrient and carbonate data from water behind a freshly created iceberg, which had just broken off the continental shelf. This was also the furthest south deployment to date of the technology (down to 77°S), and was also the first time the instruments were used to measure benthic fluxes by their integration onto a benthic chamber system.

READ MORE IN GOAL 4

BIGGEST BOATY LOC DEPLOYMENT

In March 2022, nine types of LOC systems were simultaneously deployed from RRS *Discovery*.

The sensors measured a wide range of nutrients (nitrate, nitrite, phosphate, silicate, iron) and components of the carbonate system (pH, total alkalinity, dissolved inorganic carbon), which is crucial for advancing our knowledge of the oceans changing environment and how marine ecosystems are responding. The trials proved the powerful new capability for simultaneous and autonomous biogeochemical sensing in the ocean.

GOAL 4

ENABLE

Provide world-class underpinning capabilities that enable the UK and global ocean scientific endeavour

To reach beyond surface-level knowledge, we need a range of excellent facilities and specialist teams. That's why we have research ships, ocean observatories and moorings. Along with state-of-the art laboratories, and an extensive oceanographic library and specimen collection. And, because deeper knowledge will only ever come from sharing what we have – we operate these services on behalf of the entire UK marine research community. So, together, we can go deeper than ever before into our united ocean.

ANNUAL HEALTH CHECK

The Porcupine Abyssal Plain Sustained Observatory (PAP-SO) is the longest running abyssal time-series study site in the world, with observations dating back to 1985. This expedition saw 18 researchers and engineers make the same pilgrimage to take ocean health checks, including annual sampling and servicing of infrastructure that cannot be achieved autonomously.

It may sound like every year is the same but new technology and methods, such as our new Marine Snow Catchers (pictured below), are fundamental to these expeditions. They continue the legacy of carbon and climate recording and also allow us to study new threats such as microplastics in the Twilight zone and beyond.

Recently endorsed as a UN Ocean Decade initiative is JETZON, looking at the study of the Twilight Zone, the dimly lit region extending from a few hundred metres depth to 1,000m. It is poorly understood from almost any perspective. However, it contains possibly the world's largest and least exploited fish stock and recycles ~80% of the organic material that sinks out of the productive surface waters. Expeditions like this continue our understanding of these valuable ocean zones.

7 EARLY CAREER RESEARCHERS, SUPPORTED TO JOIN THIS EXPEDITION BY POSTDOCTORAL FELLOWSHIPS FROM NOC'S CLASS PROJECT

UNDER PRESSURES

Alongside scientists from the Scottish Association for Marine Science (SAMS) we embarked on an expedition to the North Atlantic Subpolar Gyre to measure ocean changes and how they affect the UK's weather systems.

The team made observations of ocean variables such as temperature, salinity, carbon and oxygen, as well as deploying a new recorder to measure water pressure at the seafloor. The pressure recorder will remain in the water for ten years and the data it gathers will be harvested remotely without a need to recover the device. The pressure at the bottom of the sea is three hundred times greater than air pressure on land, and how it changes over time tells scientists about the ocean currents. The new pressure recorder will pave the way for net zero carbon methods to measure the huge ocean currents that flow through the North Atlantic.

READ MORE IN GOAL 3

OCEAN SENSORS

Three novel marine sensor suites, integrated by our engineers into Autosub Long Range (ALR), were successfully validated as part of an expedition with our pioneering Oceanids project team.

Two of them, AutoNutS nutrient sensors and CarCASS carbonate chemistry sensors, are both based on the Lab-on-Chip technologies developed inhouse at NOC. All three sensors can now be used for autonomous monitoring of the oceans without the need for an on-site presence by a research ship, a significant step on the road to the future Net Zero Oceanographic Capability large research infrastructure.

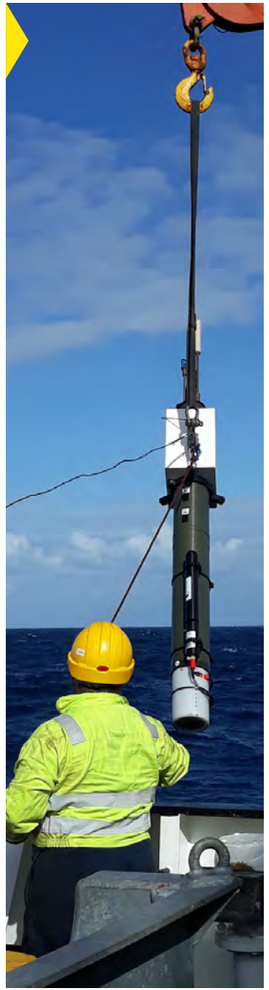
FLOAT AND SINK

Using RRS *Discovery* we deployed the first of the UK's new fleet of Biogeochemical (BGC) Argo profiling floats.

The fleet of 15 robotic floats makes up 50% of the UK's contribution to BGC Argo and is a vital source of ocean data, transforming the understanding of oceanic processes at depths up to 2,000m. The deployment formed part of our RAPID project's expedition to the Atlantic, where we serviced a collection of moorings that help measure ocean currents and examine the effects on short-term weather and long-term climate. The floats – which saw an investment from the Natural Environment Research Council (NERC) and NOC of £3.7million – have successfully performed several 24-hour cycles from the surface to depths of 2,000m, marking a huge step towards the UK's enhanced ocean observations capability.

"Argo floats have been taking the temperature of the top 2km of the ocean for the past 20 years, forming the beating heart of our system of ocean observations and revolutionising the information we have to guide climate solutions for society. This new generation of BGC-Argo floats with their additional sensors will provide a step change in our understanding of how the ocean's changing biology, chemistry and physics interact to drive the ocean carbon cycle, including the exchange of carbon between the atmosphere and the ocean."

NATHAN BRIGGS
OCEAN BIOCHEMIST, NATIONAL OCEANOGRAPHY CENTRE



WORLD-CLASS RESEARCH SHIPS

The ability to explore remote and challenging areas at sea is critical to understand the complex nature of our oceans in order to predict future change. Thus, we operate two world class royal research ships on behalf of the marine community;

RRS *DISCOVERY*

260 DAYS IN SUPPORT OF SCIENCE

14 DAYS IN REFIT

75 DAYS ALONGSIDE

15 DAYS ON PASSAGE TO DESTINATION

RRS *JAMES COOK*

200 DAYS IN SUPPORT OF SCIENCE

118 DAYS IN REFIT*

33 DAYS ALONGSIDE

14 DAYS ON PASSAGE TO DESTINATION

*RRS *James Cook* undertook a longer refit period due to starboard motor repair.

BOATY PASSES THE TEST

The most anticipated expedition of the year saw us complete the final deep-sea tests of our newest ocean robots, sensors and control software. A culmination of several years of shore-based trials, this expedition deployed several autonomous underwater vehicles (AUV) out into Haig Fras, a Marine Protected Area of Celtic Sea lying about 95 km northwest of the Isles of Scilly, and the deep waters of the Whittard Canyon complex 300km to the south west.

In the first week Autosub 5, our new work-class AUV, carried out its first ever science survey by taking part in a sidescan sonar mission that helped generate habitat maps. It also took part in its first ever overnight mission on multibeam and camera surveys. In its second week Autosub 5 had achieved its deepest ever dive, reaching an incredible depth of 4197.48m. It spent 14 hours in the water undertaking 50km of multibeam and sidescan sonar mapping south of the Whittard Canyon. On a separate deployment it also collected 25,000 images of the seafloor and marine life, including Starfish, Eels and Lobsters. These successful milestones marked its official commissioning into active service.

Autosub Long Range 3, better known as Boaty McBoatface, successfully spent several unaccompanied days completing surveys and capturing seabed imagery all using the University of Southampton's unique and low power 3D visual mapping system BioCAM.

Making a hattrick of success for the expedition, the Deepglider, built to withstand the 600 atmospheres of pressure found in the deepest parts of the ocean profiled south of Whittard Canyon down to targeted depths of 4000m.

ADDRESSING KNOWEDGE GAPS

We set off on the latest CLASS expedition to advance knowledge of some of the richest and most complex deep-sea ecosystems on Earth.

The Whittard Canyon system is home to a variety of species, including cold-water coral reefs, clams, deep-sea oysters. It is a key area for understanding the interaction between coastal, shelf waters and the open ocean, however, there are currently gaps in knowledge in how the system responds to human impacts such as climate change and bottom trawling. To address these knowledge gaps we collected sustained ocean observational data of the canyon using our own recently trialled new Autonomous Underwater Vehicles (AUV) equipped with the latest sensors.

106	ANALYSIS REQUESTS
1652M	SEDIMENT CORE ANALYSED
16	UNIQUE USERS
13	INSTITUTES
1434	HOURS OF ANALYSIS
21	SAMPLE REQUESTS
3807	SUBSAMPLES COLLECTED FROM THE CORE COLLECTION
3000	SEDIMENT CORES APPROXIMATELY, WHICH IS 12.77KM OF DEEP SEA CORE

BOSCORF

The British Ocean Sediment Core Research Facility (BOSCORF) is the UK's largest deep-sea sediment repository and state-of-the-art research facility.

Our core collection holds unique geological samples used by scientists worldwide to investigate topics such as geo-hazards, climate change and marine ecosystems.

1274	NEW USERS
89%	OF DATASETS AVAILABLE WITHIN 2 CLICKS OF MEDIN PORTAL
100%	OF CRUISE DATA ARCHIVED WITHIN 1 MONTH OF RECEIPT
76%	OF NRT PROFILES AVAILABLE IN DELAYED MODE
78K	BATHYMETRY SETS DOWNLOADED
201	DATA DEPOSITS RECEIVED
479K	NON-BATHYMETRY SETS DOWNLOADED
1.31M	DOWNLOADS OF THE NERC VOCABULARY SERVICE (NVS)
34K	NEW NERC VOCABULARY SERVICE (NVS) USERS
3629	DELAYED MODE ARGO SETS PROVIDED
77K	TOTAL NERC VOCABULARY SERVICE (NVS) USERS
8022	ARGO DATASETS SENT TO MET OFFICE

BODC

The British Oceanographic Data Centre (BODC) provides instant access to over 130,000 unique data sets with 1640 new data sets processed this year alone.

Our data helps provide answers to both local questions such as the likelihood of coastal flooding, or global issues such as the impact of climate change. This year our data are being used in projects to:

- Research of the feasibility of a tidal power lagoon in Swansea Bay.
- Research on the change in dissolved oxygen concentration in seawater, as a consequence of climate change.
- Impact of bottom trawling fishing gear on the benthic habitats in the UK EEZ.
- Research on the effects of salinity on tidal turbine blades.
- Planning the nuclear decommissioning of Dounreay.

25 YEARS OF AUTOSUB

THE FIRST MISSION
SOUTHAMPTON EMPRESS DOCK AND PORTLAND HARBOUR

In June, Autosub-1 ventured out of the lab for the first time and into Empress Dock at the Southampton Oceanography Centre (the precursor to the National Oceanography Centre) to undergo an exhaustive series of tests which included testing all technological systems and on-surface manoeuvres.

Following this, it set sail in Portland Harbour where it completed a 3.6km mission, supported by the catamaran Top Cat, which included surfacing positions and GPS fixes.

THE CALANUS DIVE
FIRTH OF LORNE, ARDMUCKNISH BAY

The first demonstration of Autosub-1's extended survey type missions, leaving Dunstaffnage Bay and navigating autonomously through the channel that was just 130 metres wide at the narrowest point between the mainland and Eilean Mor.

The mission was supported by the ship Calanus, despite Autosub-1 being too long to fit onto her deck.

AMERICAN ADVENTURE
FORT LAUDERDALE, FLORIDA

Dr Stanley Dunn and his group at Florida Atlantic University, Boca Raton obtained funding from the US Office of Naval Research to take Autosub to Florida for a series of missions between the Florida Current and the Florida coast.

This unintentionally became the first unaccompanied mission as Autosub-1 was able to make faster progress at the depth below the currents of the Florida Current than the support boat, the Lady-Go Driver. The team decided to head straight to the mission end waypoint and wait for the Autosub to surface. It was a nervous wait but thankfully Autosub arrived unharmed.

THE AUTONOMOUS VEHICLE VALIDATION EXPERIMENT
BERMUDA

Named AVVEX (Autonomous Vehicle Validation Experiment), this expedition took place aboard the RV Weatherbird II in the vicinity of the Bermuda Atlantic Time Series mooring (BATS). Autosub-1 was fitted with two forward sensors, Chelsea Instruments and SeaBird CTDs, as well as a state-of-the-art turbulence probe that attached onto the nose of the vehicle, provided by the Florida Atlantic University.

LARS DEBUT
OBAN SCOTLAND

These trials were the first to include Launch And Recovery System (LARS), which meant Calanus, the support vessel, needed to be loaded with extra ballast in order to ensure stability.

A purpose built gantry was used to help ensure safe and effective deployment and recovery from a range of ships. Under hydraulic power the upper beam telescopes out over the stern, a hydraulic motor on the headpiece then rotates the vehicle parallel to the stern and two motors lower the vehicle via lines to the water. Lines attached to plugs are tugged from the ship, releasing the vehicle from its deployment/ lifting lines.

UNDER SEA ICE AND PELAGIC SURVEYS
NORTH SEA

As part of NERC's Autosub Science Missions thematic programme, Autosub-2 was deployed on the Fisheries Research Vessel, Scotia. Uniquely, deployment and recovery was through an opening in the side of the vessel to a space known as the 'hanger', through which the gantry could still be used.

The images captured from this mission went on to be widely used by various AUV groups to show recovery in typical North Sea conditions. At the time these groups were only working in benign coastal waters and the Autosub images were some of the first examples of large AUV operations in real oceanic conditions.

BIOLOGY, PHYSICS, AND CHEMISTRY
CELTIC AND IRISH SEAS

Aboard the support vessel MV Terschelling, Autosub-2 became the first AUV to carry a Flow Cytometer - an optical instrument to characterise single phytoplankton cells and particles using light scatter and fluorescence. The experimental Cytosub was produced by Cytobuoy NV of the Netherlands.

On another expedition, Autosub-2 was fitted with multiple acoustic instruments in support of the "Sonar and turbulence studies of the upper ocean" project. Subsequently, a manganese sensor was fitted in support of the "Dissolved and particulate manganese and oxygen in the water column of the upper basins of two hypoxic sea lochs" project.

STUCK IN SICILY
STRAIT OF SICILY

During Mission 240, while deployed on the Italian research vessel Urania, the vehicle became stuck under an overhang while terrain following close to the bottom up a steep cliff.

The Leviathan Facility arranged for a passing offshore support vessel with ROVs - the Polar Prince - to attend the site of the stranding, locate the Autosub via its acoustic pinger and use an ROV to pull the Autosub free.

SCIENCE MUSEUM EXHIBITION
LONDON, UK

A year after the new Wellcome Wing at the Science Museum, London, had opened the Autosub programme was part of a major exhibition surrounding robot submarines.

On display was a model of Autosub-2 suspended from the ceiling, an ARGO profiling float, interactive Autosub displays on computer screens and images from the recent Oban mission.

BRAVING THE ELEMENTS
ANTARCTICA

The Autosub team undertook their first Polar mission, accompanied by scientists from the British Antarctic Survey, the Open University and the Marine Lab in Aberdeen. Due to the lack of support container on the ship, the team had to service the Autosub on the snow covered deck. Some incredible locations were visited including the ice edge in the Weddell Sea, Drake Passage and the Falkland Islands.

At the very end of the 60km Mission 252 in February, Autosub-2 collided with an iceberg, resulting in a bent nose.

OCEANOLOGY INTERNATIONAL
EXCEL CENTRE, LONDON

The Southampton Oceanography Centre had entered a commercialisation licensing agreement with Halliburton SubSea7, where it would build and operate variants of Autosub, named Geosub for its own purposes. The stand at the Oceanology International Exhibition was co-curated by the Autosub team and featured a Geosub as well as a working model of the Autosub gantry used in multiple previous missions.

AUTOSUB UNDER ICE
BRANSFIELD STRAIT, ANTARCTICA

The Autosub team again braved snow and ice onboard RRS *James Clark Ross*. Due to heavy ice, the cruise was unable to reach its intended working area, the Pine Island Glacier, and instead Autosub was used on multiple under ice missions.

A number of open water tests were carried out in benign conditions of the Bransfield Strait, with the team treated to an appearance from a group of Cetaceans. At one point a team was landed onto the sea ice with a manual ice drill to make ice thickness measurements and compare with those inferred from Autosub sonar draft measurements.

Overall the cruise was successful but on one mission impact with the side of the ship on recovery in choppy conditions damaged the nose and sensors of Autosub-2.

MUDDY NOSE
SOUTH WEST APPROACHES

Autosub-2 underwent a major rebuild to address design weaknesses in the commercial underwater connectors. These weaknesses had been identified during the 2003 Autosub Under Ice cruise.

A continental shelf depth mission was organised to trial the modified vehicle, but unfortunately it didn't go to plan. Four hours into the mission acoustic tracking showed Autosub to have stopped and stuck on the seafloor. An altimeter fault meant it had been ploughing a furrow into the soft sediment, accumulating material in its nose, sufficient so it ground to a halt and was too heavy to surface even after dropping its weight.

TO THE ARCTIC
COURTAULD GLACIER, ARCTIC

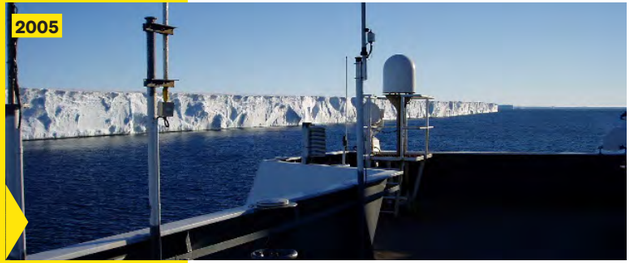
Autosub undertook two cruises aboard RRS *James Clark Ross* in the Arctic. Slender wings were added to the rear half of the centre section of the vehicle. Also added was an Aqualab water sampler, a 200ml motorised syringe taking in water and saving into one of twenty-five 50ml bags. Conditions were more often mist and fog, with sunny days being the exception.

Autosub successfully executed several under sea ice missions. The vehicle was fitted with two semi-transparent acoustic 'windows' which covered the upward looking Kongsberg EM2000 swath bathymetry transducers.

MISSING IN ACTION
FIMBULISEN ICE SHELF, ANTARCTICA

The major milestone of this mission was Autosub's first successful under ice shelf mission. This campaign was part of the NERC Autosub Under Ice thematic programme, led by Dr Keith Nicholls from the British Antarctic Survey.

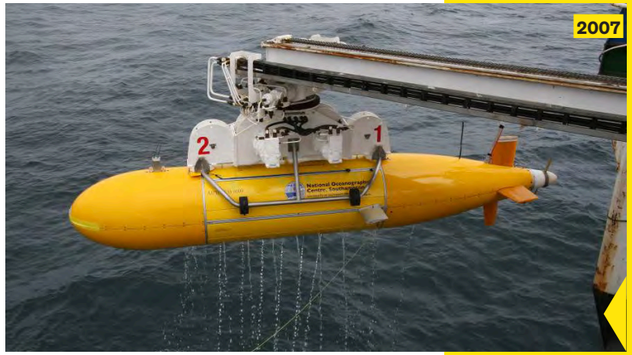
Following a successful first mission, things took a turn when, during mission 383, Autosub-2 became trapped under the ice shelf. The team had no idea what happened, they had no choice but to abandon the vehicle. It's possible that the ice shelf will fracture and form an iceberg, which will melt and reveal Autosub-2 once again.



DYNAMICS OF SHELF SEAS FRONTS
THE IRISH SEA

Autosub operations were conducted from MV Terschelling in the Irish Sea off the North Wales coast, with the mission totalling 751km. For this mission, Autosub-3 was fitted with a turbulence probe on it's nose, which was angled up by 0.7˚ with reference to the inertial navigation system so that it was near horizontal when in flight.

As you can see by the image, not all recoveries have the desirable equal lengths on the recovery lines, resulting in some interesting recoveries.



AUTOSUB6000 TRIALS
SOUTH WEST APPROACHES

In September, Autosub6000 took part in its first deepwater trial aboard RRS *Discovery* as part of cruise D323.

Led by Steve McPhail, the vehicle went 4500 metres below sea level and stayed there for 90 minutes. It was fitted with short stubby wings at the rear of the mid section to aid diving.

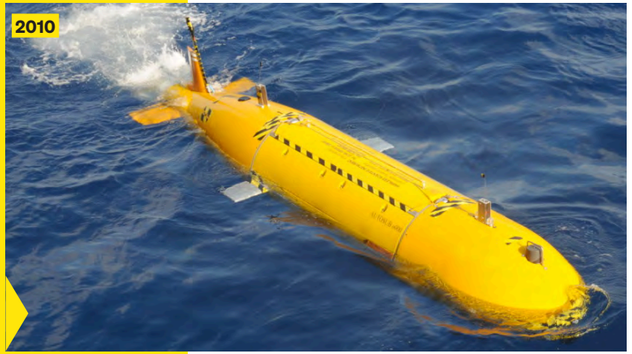
DEEPWATER TRIALS MAP SEAMOUNT
CASABLANCA SEAMOUNT

Autosub6000 continued to take part in further deepwater trials in preparation for future missions. The vehicle was fitted with Edgetech Seaking collision avoidance sonar with resilient rubber 'bumpers' underneath to minimise damage should the vehicle strike the seabed.

Autosub6000 was specifically designed with low altitude seabed photographic missions in mind. In these trials, Autosub6000 descended 2500m to the top of the Casablanca Seamount twice, with the second dive being within 10m of the seabed.

DISCOVERING HYDRO-THERMAL VENTS
CAYMAN TROUGH

As part of an International Interridge Programme, Autosub6000 provided fine-scale maps of the seafloor bathymetry to pinpoint new vent sites. The vehicle detected magnetic anomalies when flying close to the seabed to help indicate vent sites. This was possible due to most of Autosub6000 being constructed of non-magnetic metals, plastics and syntactic foam, meaning it could carry a sensitive magnetometer. The mapping was made possible by the use of a special sensor provided by Dr Koichi Nakamura, National Institute of Advanced Industrial Science and Technology, Japan.



EXPLORING UNDER ICE
PINE ISLAND GLACIER, ANTARCTICA

Autosub-3 undertook 6 missions under the glacier, with 167 hours covering a whopping 510km in total for the NERC Under Ice thematic programme. The cruise was aboard the RV Nathaniel B. Palmer, a twin-screw vessel with a cut-away counter, which meant that Autosub could easily be drawn under the hull. To combat this, launch and recovery operations used a support boat to keep the vehicle away from the stern.

On mission 431, when following the underside of the ice, the vehicle rose into a crevasse and hit the ice side-wall, sustaining damage to its nose but thankfully managing to make its way back to the ship.

PHOTOGRAPHY MISSION
DARWIN MOUNDS, SCOTLAND

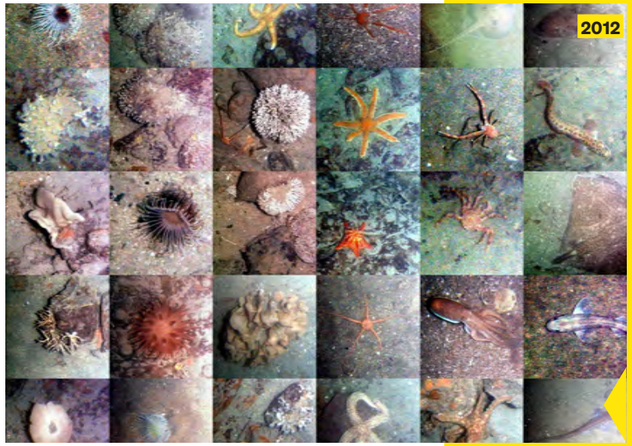
In operation on the RRS *James Cook*, Autosub6000 took part in an expedition to study benthic habitats and human impact in the Rockall Trough, Rockall Bank and Hatton Basin. Unfortunately, for the most part, the weather was atrocious.

Autosub6000 was a key tool in the expedition providing high-resolution seabed morphology, multibeam bathymetry and photographic images which were thankfully unaffected by surface conditions. In total, the vehicle surveyed 685km of track, 96km² in a total of 7 days in the water.

AUTOSUB LONG RANGE
ATLANTIC OCEAN

Autosub Long Range AUV (ALR) was a new type of AUV with a depth rating of 6000m. Although a third the weight of Autosub3 and Autosub6000, it is able to travel greater than ten times the distance and can be deployed for over a hundred times the duration.

NERC Core Strategic "Autosub and Sensors" technology programme was treated as the first deepwater trials of ALR. The vehicle was launched over the side of the RRS *Discovery* by crane as it did not have a dedicated gantry.



SEA CREATURE ENCOUNTER
EASTERN NORTH ATLANTIC

Autosub6000 took part in this Ecological Sampling and Surveying cruise during the early days of its seabed photography capabilities. It was fitted with an oblique forward-looking camera with flash and a vertical camera with vertical flash.

Autosub encountered a diverse variety of wildlife during its numerous dives, photographing a selection of benthic invertebrates and demersal fish during mission 58, dive 3. It also captured litter such as plastic bags and bottles and metal cans discarded on the seabed.

SURVEYING SUCCESS
NORWAY

Autosub6000 MKII took part in a long surveying mission, fitted with a brand new launch and recovery system on its afterdeck to help manouvre the vehicle. 708km of track lines were surveyed over a period of 141 hours with various tools and features including a sidescan sonar, 5M pixel colour camera and a light backscatter sensors.

The red tape shows where there was top panel damage from a ship collision on a previous recovery.

SHORE COMMAND
GRAN CANARIA

A series of AUV trials were carried out from a base at the Spanish oceanographic research facility PLOCAN. The trials were a success, with much learnt about the characteristics of the vehicle. Perhaps the greatest achievement was the demonstration that such trials could be accomplished from a shore base, with the AUV deployed from a trailer on a ramp, from where a small rib towed it a short distance offshore. A signal was then sent to the AUV via a WiFi link, and the AUV started its journey East.

FIRST UK VISIT TO THE CLARION CLIPPERTON ZONE
NORTHERN EQUATORIAL PACIFIC

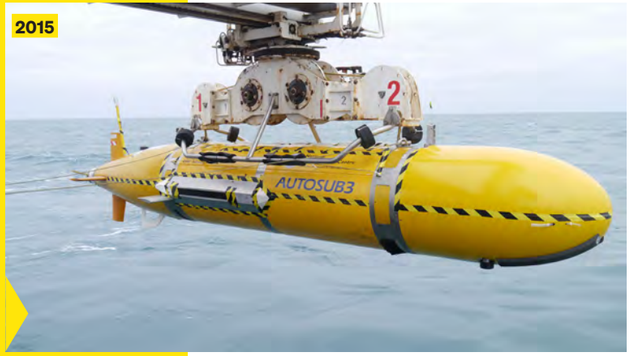
The first UK science cruise to the Clarion Clipperton Zone (CCZ) in the northern equatorial Pacific, an area likely to be targeted for deep-sea mining. In particular, the cruise visited the north easternmost Area of Particular Environmental Importance (APEI).

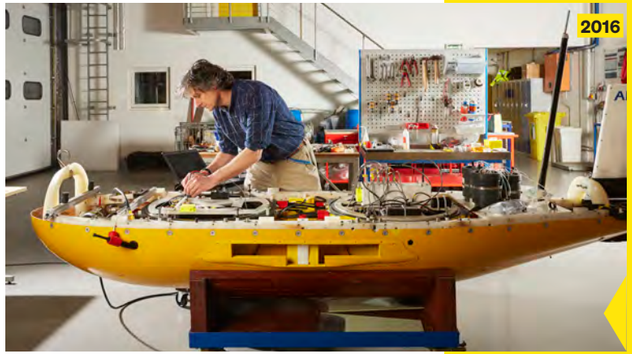
Autosub6000 carried out wide-area acoustic surveys, collected seabed photographs and made physical measurements of the water column of the APEI.

LOSS AND RETURN OF AUTOSUB3
CELTIC SEA

It was not possible to complete the first of two Benthic Shelf Seas Biogeochemistry (SSB) NERC cruises due to the loss of Autosub3. An immediate post mission search began and an estimated position of the AUV from its emergency beacon was found. With time running short, the Autosub was left on the seabed to be recovered a few weeks later by the Trinity House ship, Endeavour.

It turned out that less than 3m off the seabed, the Autosub3 had become entangled in a discarded fishing net. Autosub3 was recovered, repaired within 2 months and subsequently took part in the second cruise back again in the Celtic sea.





COMMENCEMENT OF OCEANIDS
SOUTHAMPTON, UK

The Oceanids Programme, a £16M Marine Autonomous Systems (MAS) development programme funded by UK Government as part of the Industrial Strategy Challenge Fund (ISCF), is launched.

The programme aims to see two new autonomous underwater vehicle (AUV) classes delivered: three 1500m depth-rated Autosub Long Range vehicles that will have longer endurance and greater payload capacity compared with the current vehicles; and a 2000m depth-rated Autosub capable of carrying high-power sensors and operating under ice.

BOATY'S FIRST MISSION
SCOTIA SEA, ANTARCTIC

RRS *James Clark Ross* arrived in Southampton, returning Autosub Long Range (ALR), known as 'Boaty McBoatface', home after its first scientific deployment in the Antarctic.

Supported by NOC engineers, the team, which involved scientists from the University of Southampton and British Antarctic Survey, collected data on temperature, speed of water flow and underwater turbulence rates of the Orkney Passage, a region of the Southern Ocean that is around 4000m deep and roughly 500 miles from the Antarctic Peninsula.

EPIC ANTARCTIC ADVENTURES
WEDDELL SEA, ANTARCTIC

From January to February, the Autosub Long-Range, 'Boaty McBoatface' was deployed during RV Polarstern cruise PS111 as part of the Filchner Ice Shelf System (FISS) Project – a collaboration involving leading UK research institutions.

'Boaty' spent a total of 51 hours under the Antarctic ice, travelling 108km over the duration of the deployment. The vehicle reached water depths of 944m, and spent 20 hours exploring beneath a section of the ice shelf that was 550m thick.

CORAL MOUNDS CHECKUP
DARWIN MOUNDS MARINE PROTECTED AREA

RRS *Discovery* and Autosub6000 travelled to an area of small cold-water coral mounds in the Northern Rockall Trough which was discovered by NOC scientists in 1998. This area is protected from bottom contact fisheries, in order to identify and quantify any long-term changes to this deep-sea habitat. Autosub6000's job was to survey the mounds using a sidescan sonar and was supported by the HyBIS video platform and a series of targeted boxcores.

Despite some time lost due to weather and unfortunate equipment malfunctioning the expedition was a success with the required surveys completed.

ALR1500 HARBOUR ACCEPTANCE TRIALS
PORTLAND HARBOUR, DORSET UK

The Autosub Long Range (ALR) vehicle, developed under the NERC Oceanids programme, successfully completed its first live trials.

ALR1500 – named for the 1500m depth it can achieve – passed its first major test with flying colours, successfully demonstrating its integration with the unified web-based Command and Control (C2) software platform that had been developed in parallel by the NOC in partnership with the Scottish Association for Marine Science.

SUCCESS AT LOCH NESS
LOCH NESS, SCOTLAND

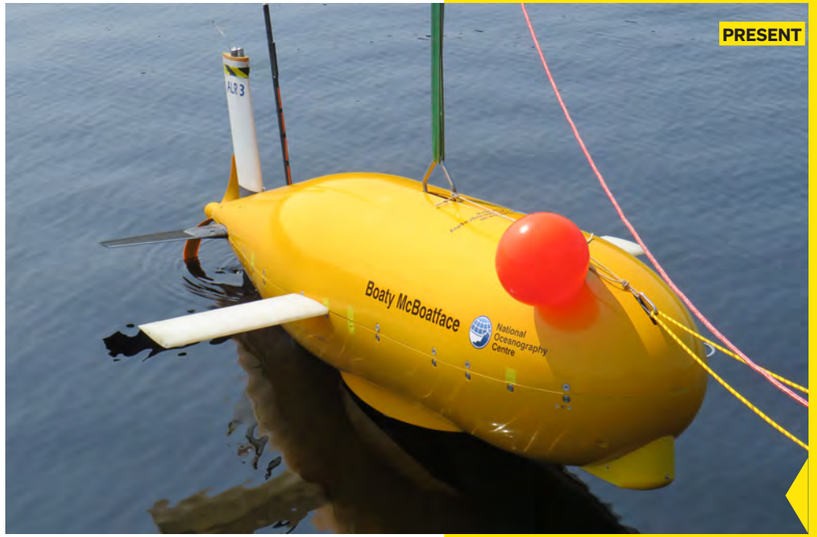
Following the Portland trials, two of the three new ALR1500's went through their first round of commissioning trials. The vehicles carried out a range of test missions of increasing complexity across three weeks to test the vehicles' enhanced functionality, including Terrain Aided Navigation and environmental profiling capabilities.

The NOC returned later in the year to conduct trials of the next generation of marine sensors and autonomous underwater vehicles.

BIOCAM ON TRIAL
LOCH NESS, SCOTLAND

The Oceanids Autosub 2000 Under-Ice platform begun the next phase of trials; in-water Harbour Acceptance Testing.

An important milestone in developing a reliable platform for delivering high-power missions in deep-water and under-ice environments.



HARBOUR ACCEPTANCE TESTING
LOCH NESS, SCOTLAND

The Oceanids team began testing the integration of the BioCam sensor system with Autosub Long Range. Led by Professor Blair Thornton at the University of Southampton, the BioCam project develop innovative hardware and software for autonomous measurements of benthic biology.

The Oceanids team also tested new vehicle navigation software ready for the next scientific deployment at the Thwaites Glacier, Antarctica.

GOAL 5

GROW & DIVERSIFY

Responsibly grow and diversify revenue to sustain our mission with a critical mass of scientific and technical capability

As the UK's leading marine charity, we've worked hard and smart to get the best results for our ocean from careful use of time, resource and funding. With newly defined donation streams we've carved out exciting new ocean literacy and education offerings for the next generation of science and engineering students. We've built on our reputation as the spokesperson of the ocean, maintaining our authority on the world stage as an impartial expert. New business-sector relationships, aligned to our purpose and five-year plan, have already seen creation of several exciting partnerships and missions.

ACTION IN ALLIANCE

We launched a new fundraising call to enable individuals and businesses to protect the future of the ocean by joining our Ocean Alliance. The funding programme will be an essential resource for global ocean research and vital technological development, empowering society to become more involved in the global science needed to support a sustainable ocean.

The Ocean Alliance is a group of partners that promote knowledge, innovation and sustainable use of the ocean and fund the research and technology development needed to make a positive impact and drive change. As the largest, most connected and vital ecosystem on earth, the ocean sustains all life. Yet today, ocean conservation receives less than 1% of global charitable giving. With the United Nations Decade of Ocean Science highlighting the importance of including the ocean in climate conversations, NOC is encouraging those interested in protecting the oceans and the planet to join the Ocean Alliance and have the chance to directly impact the global scientific findings, innovations and education needed to tackle climate change.

The alliance comprises four funds:

THE ADVANCE FUND

BRINGING SCIENTIFIC SOLUTIONS TO THE WORLD'S MOST COMPLEX PROBLEM

THE INNOVATE FUND

USING SCIENCE AND TECHNOLOGY TO FUEL INNOVATIVE SOLUTIONS TO CREATE A THRIVING OCEAN ECONOMY FOR ALL

THE EMPOWER FUND

INFORMING GOVERNMENT POLICIES, GOOD CORPORATE PRACTICES, AND A STEP CHANGE IN PUBLIC AWARENESS OF THE ROLE THE OCEAN PLAYS

THE EDUCATE FUND

A DIVERSE WORLD OF FUTURE SCIENTISTS TO ENSURE THE OCEAN REGAINS AND MAINTAINS ITS HEALTH

"When we can understand the ocean and its ecosystems, we are in a better position to know how to not only preserve it, but also to manage it to ensure that it is protected for the future.

At NOC we have the existing scale, experience and infrastructure to deliver the science needed to drive forward global action, but require the financial support to continue driving discovery and pursue bold new lines of ocean research in ways other funding types cannot.

We want our supporters to come with us on this journey and learn about the impact they are having."

SOFIE BENNETT
HEAD OF PHILANTHROPY, NATIONAL OCEANOGRAPHY CENTRE

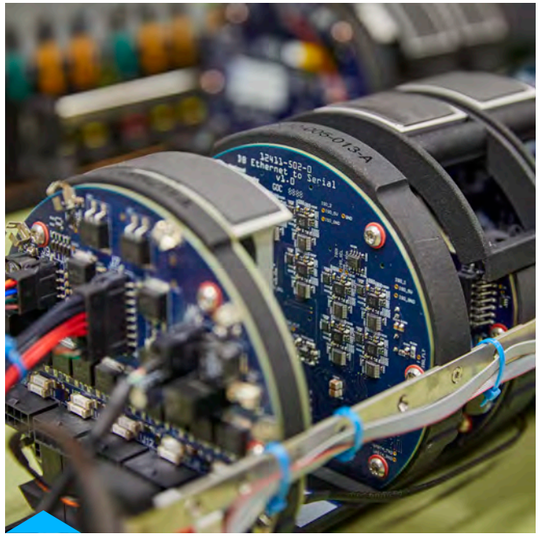
BURSARY ON BOARD

Together with the West of England P&I Club (West P&I) we were proud to announce Adeola Dahunsi and Selasi Yao Avornyo as the two students selected for the second year of our collaborative international bursary programme.

They joined their first sea-going research expedition in July to get hands-on experience of working and living on an oceanographic research ship. As part of the science team on board the RRS *James Cook* (JC238) they travelled to the North Atlantic Subpolar Gyre to measure ocean changes and how they affect the UK's weather systems.

> "It's so exciting to be able to provide this sea-going experience thanks to the bursary programme with West P&I. Adeola and Selasi Yao were selected for it because of their research interests, which fit with the expedition objectives, plus the commitment and talent they demonstrated during the bursary programme's first year which had to be run completely online."
>
> **DR SAMIA BURRIDGE**
> HEAD OF PHILANTHROPY, NATIONAL OCEANOGRAPHY CENTRE

The West P&I Seagoing Science Bursary provides financial support to enable students and early career researchers in the field of marine science or oceanography, or those from developing countries who are keen to become involved in the field of marine science or oceanography, to gain practical experience of ship borne science.

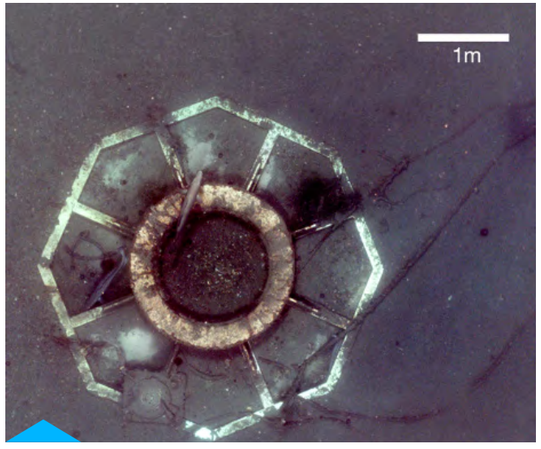


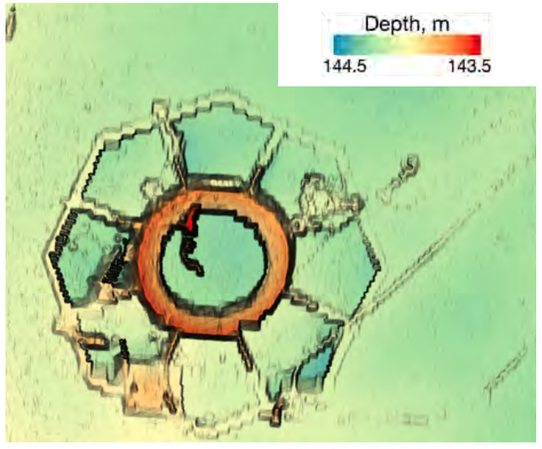
EUROPEAN CENTRE OPENS

Working in partnership with Teledyne Marine, NOC took the stage at Oceanology International 2022 to announce a new European Glider Service Centre.

Based in our Southampton dockside location, the Service Centre will offer an official service, support and repair facility for Teledyne Slocum Gliders.

> "Our new NOC Glider Service Centre builds on years of expertise from servicing our own underwater glider fleet – part of the largest autonomous vehicle fleet in Europe – to offer a commercial service incorporating our own in-house Calibration Laboratory and Pressure Testing Facility."
>
> **HUW GULLICK**
> ASSOCIATE DIRECTOR NOC INNOVATIONS,
> NATIONAL OCEANOGRAPHY CENTRE





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NET ZERO DECOMMISSIONING SURVEY

We proved it's possible to launch an autonomous underwater vehicle (AUV) from shore to undertake a long-distance, high-tech, low-impact marine monitoring survey.

This huge step forward in technology may eventually replace the current approach for environmental monitoring at decommissioned oil and gas sites, which need dedicated ships and teams of people offshore.

> "Our goal is to improve the environmental protection of the North Sea at a reduced cost and impact to the environment. We aim to demonstrate how this leading robotic technology could be used worldwide to support this crucial ocean monitoring."
>
> **DR DANIEL JONES**
> ASSOCIATE HEAD OF OCEAN BIOGEOSCIENCES
> NATIONAL OCEANOGRAPHY CENTRE

Our technical mission ended up being a great success and provides a huge step forward in operations offshore and the journey to net zero.

GOAL 6

GOVERNANCE

Transform the way the National Oceanography Centre is governed and operated

Our approach is not just about ensuring we are operating in line with company and charity law but encouraging responsibility and accountability that will ultimately improve performance and ensure we operate in a sustainable manner. We use two routes to achieve good governance; a sound governance framework for operation and an adherence to Charity Governance Code that aligns with our values and culture. This year we have pressed on with our continuous improvement journey.

GOVERNANCE FRAMEWORK

We have worked to improve our governance framework, we have reviewed our audit approach and developed a more practical and sustainable route, that is linked to the identified risk areas and meets the requirements of the charity governance code.

CYBER SECURITY AND DATA PROTECTION

Cyber security activity has seen significant investment during this year, we have recruited a new Head of Information Technology and a Cyber Security Manager that have increased our skills and improved our approaches.

We have delayed our Cyber Essentials Accreditation submission, to dedicate resources to completing a ship cyber review for the two NERC research vessels we operate. Installation of our new Active Directory setup and completing a third-party vulnerability assessment have improved our current position, and our ability to adapt to future threats. We will continue with Cyber Essentials Accreditation and aim to complete this in spring 2023.

This year we began work to analyse the current status of Data Protection policies and procedures, and other information available to staff in relation to current data protection legislation. This has included reviewing and updating Data Privacy Impact assessments; and reviewing and updating all Privacy Notices on the NOC website. This activity will continue next Financial year, where aim to improve our training approach for the organisation.

Recruitment of a new Information Governance & Publications Officer during Q3 provides the further resource needed to support this activity.

There were no reportable data protection breaches during the financial year.

RISK MANAGEMENT

The Trustees continue to have oversight of the risk management of the organisation. Staff training and workshopping have continued through 2022, this has helped to embed risk understanding, and improve monitoring and reporting across the organisation.

As our maturity increases, we will continue to develop improved approaches to support our staff who on day to day basis manage our operational risks in specialist areas.

ETHICS, SAFEGUARDING AND CONFLICTS OF INTEREST

We have reviewed our Research Integrity Policy, and have identified the need to deliver specific training in this area.

The training programme is in development and we will look to roll this out during the next financial year. A full review of NOC's Safeguarding Policy, Safeguarding Guidance and Reporting Procedure has been conducted by the Legal & Governance team, considering current Charity Commission guidance; UKRI guidance and requirements for projects that its funds; and current legislation and practice. The update provides the inclusion of comprehensive descriptions for specific scenarios to help considerations and support to our staff.

There were no externally reportable conflicts of interest and no significant governance or control issues during the financial year.

RECRUITMENT

We have continued to develop our skills with the recruitment of new leaders across Corporate Business Support that are contributing to significantly improving our operations and governance.

DUE DILIGENCE

Carrying out effective due diligence allows NOC to make good decisions; to understand and mitigate risks; and to ensure that in working we comply with our governance, and terms and conditions flowed down by our funders, customers, regulators including the Charity Commission and Scottish Charity Regulator (OSCR) and other third parties.

NOC has reviewed and updated it approach to due diligence of our partners that we work with. The new approach sits alongside the NOC Ethics Policy, and sets out (a) the requirements in relation to due diligence to be undertaken prior to NOC and/or National Oceanography Centre Innovations Limited (NOC Innovations) entering into an agreement with a third party.

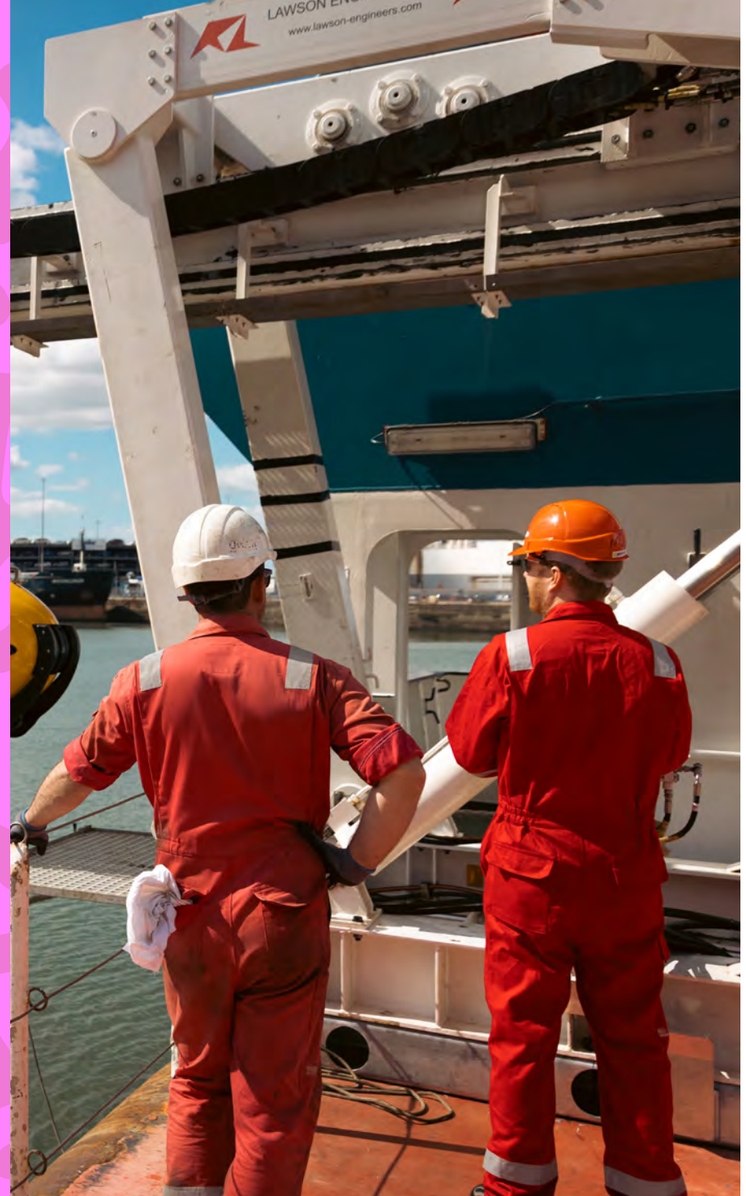
It also outlines a route for monitoring projects with other parties where a specific risk in relation to the other party is identified.

GOAL 7

PEOPLE & CULTURE

Invest and reinvest in the National Oceanography Centre and its people

We value individual differences and the rich diversity that this brings. Through a dedicated and inclusive culture, strong human empathy, alongside the strength of our policies, procedures, expectations and ways of working, we continue to create a positive and supportive environment for everyone, allowing them to reach their full potential and to bring out their very best self. This ethos is underpinned not only by our vision and values but by the positive pillars of our Sustainability and Social Responsibility Strategy.



34%	OF OUR WORKFORCE ARE FEMALE
40%	OF OUR 151 PEOPLE MANAGERS ARE FEMALE
56%	OF OUR WORKFORCE ARE ON NOC CLG T&C's
9	EMPLOYEES ARE TRAINED AS MENTAL HEALTH FIRST AIDERS
115	VACANCIES FILLED
15%	OUR STAFF HAVE FORMAL FLEXIBLE WORKING PATTERNS
397	STAFF MEMBERS ATTENDED ACTIVE BYSTANDER TRAINING
131	TOOK PART IN OUR PEOPLE MANAGER DEVELOPMENT PROGRAM
IIP	THE INVESTORS IN PEOPLE ASSESSOR DESCRIBED OUR WELLBEING STRATEGY AS BEING OUTSTANDING

SUCCESS IS SILVER

We were awarded the Investors in People (IIP) silver accreditation – an accolade awarded to just 15% of organisations assessed. This is the first time NOC has achieved Silver, and reflects the positive progress made since our last assessment in 2018, especially during the last two years as we transitioned into a charity and navigated the pandemic.

Results from a recent staff survey showed 80% of staff agreed or strongly agreed that NOC was a great place to work. Our people also believe that we have supported them exceptionally well during the COVID-19 pandemic. Our initiatives are providing a measured and integrated approach to supporting the current and future wellbeing of our people.

> "To be given this award, by the organisation that sets the benchmark when it comes to people management, is testament of our shared commitment to a positive, values-focused internal culture. I'm delighted to know that staff feel supported and that they believe as I do, that their work has purpose and are proud to associate with the NOC's world class reputation."
>
> **PROFESSOR ED HILL CBE**
>
> CHIEF EXECUTIVE, NATIONAL OCEANOGRAPHY CENTRE

We are all incredibly proud of this achievement, and we are committed not only to maintaining the silver standard, but to exceeding it in the future. The same week we won the award we published our Sustainability and Social Responsibility Strategy, which sets People as one of our five pillars of culture, alongside community, environment, operations and research ethics.

PEOPLE CULTURE

COLLABORATION AWARD

It was an incredible proud day for everyone at NOC when SeaDataCloud, a collaborative project involving our British Oceanographic Data Centre, was awarded a "les Etoiles de l'Europe" trophy.

The award was presented by the French minister of Research and Innovation in Paris, as part of the 2021 Horizon Europe summit. This innovative project is the latest in a series of EU projects to develop a pan-European infrastructure called SeaDataNet, set up to enable the management and sharing of marine data and information across Europe and beyond. The SeaDataCloud project, managed by the team at the BODC and its European partners, has considerably advanced the technological infrastructure of SeaDataNet, with the adoption of cloud and high-performance computing capabilities.

> "We are delighted that SeaDataCloud has been presented with this prestigious French award that recognises excellence in project coordination and European-wide collaboration. We have a long association with SeaDataNet - as data providers and technical experts – and we are immensely proud of our contribution to this latest project. It represents a huge step forward for the international exchange of marine data and information."
>
> **MARK HEBDEN**
> SENIOR MARINE DATA MANAGER, NATIONAL OCEANOGRAPHY CENTRE
> PROJECT LEAD FOR SEADATACLOUD

PEOPLE CULTURE

COLLEAGUE RECOGNITION

Staff were rewarded for all their hard work and contributions over the year at our annual Summer Celebration and Values Awards event.

Held in person at our sites and ships we saw 14 awards, all reflecting our corporate values, presented to peer-nominated colleagues. As a fantastic celebration of all we've achieved together this event is always the highlight of the social calendar and especially so this year as it marked our first in person staff event since the pandemic.

PEOPLE CULTURE

ENVIRONMENT AWARDS

Our Environmental Management System was recertified with ISO14001, with its effectiveness demonstrated through operational processes, internal audit programme, monitoring, measurement, leadership and processes.

Our dedicated team ensured that we met objectives and demonstrated regulatory and legal compliance.

We were re-accredited with 0 non conformities and only four minor observations.

ENVIRONMENT CULTURE

DECARBONISATION PLAN

We set ourselves new challenging science-based targets, driven by Paris Agreement, to reduce our Scope 1 emissions by 27.5%, Scope 2 emissions by 46%, and Scope 3 by 46% with an ultimate goal of becoming a zero emissions based organisation by 2040.

Scope 1 emissions relate to the direct burning of fossil fuel on site (gas consumption) and Scope 2 emissions relate to the indirect generation of electricity for use on site (electricity consumption). This year we have generated 233,579.90 kWh of our own energy through our solar PV array.

We made good progress already this year, with annual gas consumption reduced by 26% from the 2019 baseline. The reduction in electricity consumption has been less significant (only 5% compared to 2019), but associated carbon emissions have decreased substantially due to the decarbonisation of grid electricity. The grid is expected to decarbonise further by 2030, which would allow us to meet the 2030 Scope 2 target (for building energy use) without the need for further reduction in energy consumption. We are engaged with our partner consultants to ensure a decarbonisation roadmap is fit for future and meets the required need to achieve our targets at 2030 and 2040.

As an international research centre, travel is an inevitable part of our scope 3 emissions. As part of our new decarbonisation plan, we have committed to reducing our business travel by 23% over the next 4 years. We have launched our Sustainable Travel and Commuting Guidance to support and guide staff to choose lower carbon modes of travel.

ENVIRONMENT CULTURE

CARBON CHANGES

Science expeditions have been an integral part of learning about our oceans for a very long time. We currently operate two world-class scientific research vessels, RRS *James Cook* and RRS *Discovery*, which have travelled around the world completing important missions and exploring every aspect of the ocean.

But our social media campaign #pastpresentfuture explored the exciting and innovative ways we're upholding our commitment to the environment and moving towards the 2040 future of net-zero oceanographic capability.

ENVIRONMENT CULTURE

FIT FOR FUTURE

To continue to see us thrive in all that we undertake, we have embarked on an ambitious journey of internal transformation. Our Fit for Future programme, spanning our long-term strategy, will create a collaborative, welcoming and inclusive environment that accommodates post pandemic working styles and is synonymous with creativity and unity. It will actively encourage cross functional working and facilitate rich and unique conversations that lead to scientific, technological, and collaborative innovations. The look and feel of this environment will be 'more than the sum of its parts', creating not only an exceptional and collaborative workplace but also somewhere to showcase NOC to the external environment.

This creative environment will be supported by highly efficient, digitally connected, corporate business support teams who are able to generate strong and sustainable value. These teams will embrace the culture of consistent innovation and continual improvement with the aim of delivering accurate, timely, and best in class services, ultimately creating more time for world class engineering and science. Executed well, this transformation will become enabling and energising, delivering an exemplary environment where our teams are able to work to their full potential, collaboratively and seamlessly from any location.

PEOPLE CULTURE ENVIRONMENT CULTURE OPERATIONS CULTURE

OCEAN EDUCATION

If there was ever a day in the year for us to shout that extra bit louder about our passion and hopes for the ocean it's the United Nations International World Oceans Day, this year framed around the theme of revitalisation.

Supported by the UN Decade of Ocean Science and the UN Ocean Conference we proudly participated in events locally, virtually and internationally. Schools, homes and offices tuned in to our dedicated day of education, through our hybrid talks and online classroom sessions, all delivered by our skilled ocean literacy ambassadors.

COMMUNITY CULTURE

1207
ONLINE DELEGATES

4
'OCEAN LITERACY' SESSIONS WITH LIVE Q&A

175K
TOTAL SOCIAL MEDIA REACH

4235
VIEWS ON DEMAND

4
HYBRID 'HOT TOPIC' PANEL DISCUSSIONS

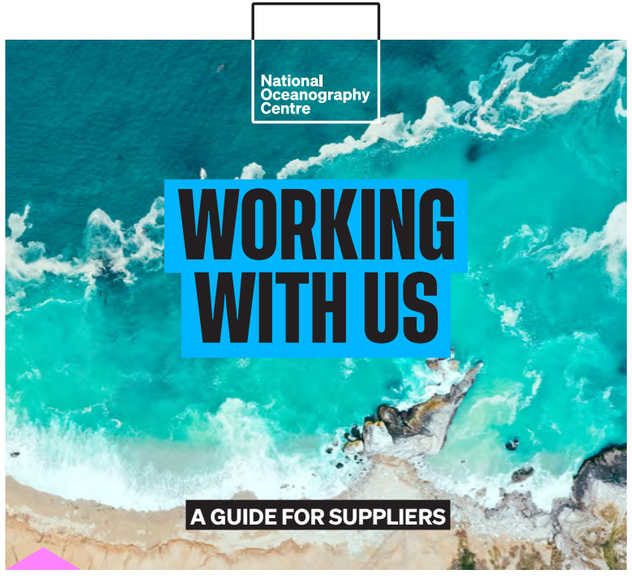
6.2%
AVERAGE SOCIAL MEDIA ENAGAGEMENT

BUSINESS SMART

We've gotten smarter at project management by further integrating our bespoke business systems.

The resource planning and financial outputs are now directly linked, enabling staff to more effectively plan out time and directly see the financial impact from their planning. There is now the possibility to assess the performance of projects on a real time basis where information is kept up to date. Regular proactive reporting to senior leaders, much earlier in the plan, means our people and business benefits from quicker and more informed decision making.

OPERATIONS CULTURE



CODE OF CONDUCT

We take a comprehensive view of our entire supply chain and work closely with our suppliers to ensure social responsibility is at the heart of what we do. Last year we reported that a Supplier handbook had been drafted and was ready to be launched this year. We're excited to update that the implementation was very successful and has helped consolidate vendor relationships and further improve our due diligence processes.

Through adoption of this guide we know all our suppliers agree to a code of conduct, clearly outlining our expectations and ways of working. All new suppliers that follow the full due diligence process are now categorised as TRUSTed. This commits to treating all people and communities with respect across the entire supply chain; recognise and work to minimise environmental impacts; understand our ways of working, our processes and needs; support our science and engineering through continual improvement and innovation; and be technically competent and compliant.

OPERATIONS CULTURE

RESPECT AT SEA

Creating an even more inclusive workplace culture is an ongoing priority for marine science institutions worldwide. Given the unique working environment of research ships and the potential to be at sea for weeks or even months, it is essential to promote positive values that instil respect for their colleagues.

To galvanise inclusive culture onboard research ships, NERC (Natural Environment Research Council) launched a thought-provoking training video designed to empower ocean researchers and remind them of their responsibility to respect colleagues and promote inclusion. The video is the latest element of NERC's ED&I (Equality, Diversity and Inclusion) commitments and features some NOC oceanographers and marine engineers who share their joy of going to sea and calls for colleagues to treat each other with respect. The film is being shown on board both NERC ships, operated by NOC, as part of the onboarding training for those setting sail.

> "Working globally and leading the broad science and technology around our vast ocean is one of the great challenges of our age. This needs the talents of many people from different backgrounds to make it possible, and to engage with diverse communities about the importance of the sea in all our lives. We strive for excellence in this area, whether that is through delivering education and awareness or driving change to our cultural practices."
>
> **CAIT ALLEN**
> ASSOCIATE DIRECTOR FOR ENGAGEMENT, NATIONAL OCEANOGRAPHY CENTRE

RESEARCH CULTURE

STRUCTURE, GOVERNANCE & MANAGEMENT

OVERVIEW

NOC was incorporated on 2 July 2018 as a charitable company limited by guarantee and commenced trading on 1 November 2019. It is registered as a charity with the Charity Commission in England & Wales and the Scottish Charity Regulator and is governed by articles of association in accordance with the Companies Act 2006.

ORGANISATIONAL STRUCTURE AND DECISION-MAKING POLICIES

BOARD OF TRUSTEES

NOC's Board of Trustees, who are also Non-Executive Directors for the purposes of company law, have overall responsibility for ensuring that NOC is carrying out its purpose for the public benefit; the continued financial viability of the organisation; and for ensuring that we meet all of our legal and compliance requirements.
The Trustees oversee the day-to-day delivery of NOC's strategy which is led by the Executive Committee. Trustee Directors are appointed by the existing Trustee Directors for a term of three years and are eligible for re-appointment for a further three years.

The Board of Trustees during the financial year was as follows:

CHAIR

Jeremy Darroch

DIRECTORS

Dr Ruth Boumphrey

Professor Sir Ian Boyd

David Gee

Daniel Hook

Sarah Kenny OBE

Dr Sarah McMath

The previous Chair of Trustees, John Hirst, retired 30th September 2022. The newly appointed Chair, Jeremy Darroch officially started his term 1st October 2022.

The first three-year term of four Trustee Directors (Dr Ruth Boumphrey, Professor Sir Ian Boyd, Daniel Hook, and Dr Sarah McMath) expired during 2022, following which all four were reappointed for a further three-year term.

DELEGATION OF DECISION MAKING - EXECUTIVE COMMITTEE

The Board delegates the day-to-day leadership and operations of NOC to its Executive Committee, which is made up of the Chief Executive Officer; the Chief Operating Officer/ Chief Financial Officer; the Director, Data, Science and Technology; and six Associate Directors.
The Executive Committee meets monthly, reviewing progress against NOC's goals; the KPIs set by the Board; and both current and longer-term priorities for the organisation. The Board has approved a formal Statement of Delegations for the Executive Committee to allow them to conduct the business of the organisation effectively.
During the financial year, the Board approved an updated Executive Roles and Responsibilities framework, setting out accountabilities for each member of the Executive Committee.

BOARD MEETINGS

The NOC Board meets formally at least quarterly. Standing items covered in Board meetings include strategy, performance, risk and compliance. The Executive reports quarterly to the Board on progress against KPIs set at the start of the financial year, which cover each of NOC's goals. Their activities included providing oversight and guidance in the development the Marketing Strategy and the Public Affairs Strategy, and the setting of a first Digital Strategy for NOC.

DELEGATION OF DECISION MAKING - COMMITTEES

The Board of Trustees has established four formal committees: the Audit & Risk Committee; the Nominations Committee; the Remuneration Committee; and the Scientific and Technology Advisory Committee.

Their role is to undertake detailed scrutiny of specific subject matters and to make recommendations on those topics. The committees are Chaired by a Trustee Director appointed by the Board and report directly to the Board. The constitution of the committees and their respective Terms of Reference are reviewed at least annually.

AUDIT AND RISK COMMITTEE

The Audit and Risk Committee is chaired by David Gee and meets quarterly. On behalf of the Board, it has overall responsibility for financial reporting and controls; risk management; audit; and whistle-blowing. The committee acts independently from the NOC Executive, to ensure that the interests of the charity are properly protected in terms of monitoring the integrity of the company financial statements. This year the committee established a new route to assure that the risk framework is embedding within the organisation, and provided advice and guidance on the development of our due diligence approach and update to safeguarding.

REMUNERATION COMMITTEE

The Remuneration Committee is chaired by Sarah Kenny OBE, and meets quarterly. It provides a forum for developing policy on trustee and executive remuneration; to recommend levels of remuneration for Directors; and to review the remuneration policy and reward package for all employees. It oversees any major changes in the employee benefits structure throughout the organisation. During 2022, the committee reviewed and approved the Executive pay and performance, and also advised on the succession planning for the Executive.

NOMINATION COMMITTEE

The Nomination Committee has the role of leading the process for Board appointments and making recommendations to the Board and meets at least twice a year. It is chaired by Jeremey Darroch and is responsible for long-term succession planning for future trustees, seeking to ensure there is a formal, rigorous and transparent procedure for the appointment of new directors to the

Board and reviewing and evaluating the balance of skills, knowledge, experience and diversity on the board. The Board analyses the capabilities of the existing Trustee Directors using a skills matrix, which is reviewed annually. The committee had oversight of the recruitment and appointment of the new Chair of Trustees.

SCIENCE AND TECHNOLOGY ADVISORY COMMITTEE

The Science and Technology Advisory Committee is chaired by Professor Sir Ian Boyd. Its remit is to provide independent advice to support the Board of Trustees and the Director Science & Technology in their responsibilities for development and delivery of the research strategy for NOC and on sustaining the quality and impact of NOC's research performance, its research environment and the health of its intellectual capital base. The committee is chaired by a member of the NOC Board and has a membership of no more than 10 people with expertise covering the breadth of NOC's main areas of scientific research and technology development. Members are drawn from outside NOC, taking due consideration of diversity, and bringing stakeholder and international perspectives commensurate with NOC's role as one of a relatively small number of large-scale oceanographic institutions in the world.

TRUSTEES' INDEMNITIES

Under NOC's governing documents, directors and former directors are entitled to an indemnity against liability incurred by them to a third party in the proper performance of their duties as a director or officer of NOC. The governing document also gives NOC powers to provide indemnity insurance for the Trustees in respect of liability arising from breach of trust or duty, negligence, subject to the conditions of s.189 of the Charities Act 2011 (which excludes from such insurance any criminal and regulatory fines and penalties). NOC maintains such insurance for the Trustees, with an annual cap on liability.

PAY POLICY FOR SENIOR STAFF

During the year one Trustee received remuneration as disclosed under note 7 to the financial statements. Details of Trustees' expenses incurred in the course of their duties and reimbursed are disclosed under note 7.

The Remuneration Committee has responsibility for developing, implementing and reviewing the remuneration, considering market value; performance; capabilities, values and leadership behaviours, and using up to date and relevant comparative salary information. The Chair of the Remuneration Committee recommends the remuneration package of the Chief Executive Officer to the Chair of the Board, who in turn reports to the Board.

INDUCTION AND TRAINING OF TRUSTEES

As part of our on-boarding process, new Trustees receive an induction to introduce them to our work, which includes introduction to each member of the Executive team, presentations, tours and meeting various colleagues to learn about the different functions of NOC. NOC also provides a trustee handbook with guidance on both NOC itself, and on charity governance requirements. Trustees are encouraged to attend relevant training events, and to identify any specific training requirements throughout the year.

REVIEW OF BOARD PERFORMANCE

The annual review of the effectiveness of the Board was completed externally by the Chartered Governance Institute between June and August 2022. The review methodology included consideration of various governance documents, trustee and executive director interviews, a board observation and a review of the board's competencies against the Institute's Charity Trustee Competence Matrix. The report stated that, NOC is a well-governed charity led by high-calibre, professional and experienced trustees who are committed to the work of the charity. NOC performed well against the criteria in the matrix. Importantly the review identified some recommendations for consideration, these areas will be put into an action plan that will provide continuous improvement over the next financial year. The Board Code of Conduct was also reviewed and reapproved during this year.

SUBSIDIARY GOVERNANCE AND RELATED PARTIES

NOC's wholly owned subsidiary, National Oceanography Centre Innovations Limited ('NOC Innovations'), was established in 2019 as a private limited company. Its role is to undertake more applied and commercial work, to facilitate knowledge exchange and encourage innovation. It has covenanted to donate to NOC all profits earned which it may legally donate and to re-claim gift aid on its profits to NOC. The NOC Innovations Board is chaired by David Gee, and its other directors are members of the Executive Committee. The NOC Innovations Board meets quarterly. Its Associate Director, Huw Gullick, provides regular updates to the NOC Board of Trustees on the activities and financial reporting of NOC Innovations.

NOC is eligible to bid for funding from UKRI, including the Natural Environment Research Council (NERC). NOC manages the National Capability funding on behalf of NERC working in partnership with marine centres throughout the UK.

MEMBERS OF THE NOC AND LIABILITY

The Members of the Charity are the Trustee Directors. They guarantee to contribute an amount not exceeding £1 to the assets of the Charity in the event of winding up.

DISCLOSURE OF INFORMATION TO AUDITOR

Each of the persons who are Trustees at the time when this Trustees' Report is approved has confirmed that:

- so far as that Trustee is aware, there is no relevant audit information of which the charitable company's auditor is unaware; and
- that Trustee has taken all the steps that ought to have been taken as a Trustee in order to be aware of any relevant audit information and to establish that the charitable company's auditor is aware of that info.

REFERENCE & ADMINISTRATIVE DETAILS

COMPANY REGISTERED NUMBER
11444362

CHARITY REGISTERED NUMBERS
1185265 and SC049896

REGISTERED OFFICE
National Oceanography Centre
European Way, Southampton, SO14 3ZH

INDEPENDENT AUDITOR
BDO LLP
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Southampton, SO14 3TL

LEGAL ADVISORS
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Bridgewater Place, Water Lane, Leeds, LS11 5DR

BANK
NatWest
3 Hampshire Corporate Park, PO Box 462, Templars Way,
Chandlers Ford, SO53 3RY

FINANCIAL / TAX ADVICE
Deloitte LLP
3 Rivergate, Temple Quay, Bristol, BS1 6GD

CHAIR
Jeremy Darroch

DIRECTORS AND TRUSTEES
Professor Sir Ian L Boyd

Dr Ruth Boumphrey

Sarah Kenny OBE

Dr Sarah McMath

David Gee

Daniel Hook

SENIOR MANAGEMENT TEAM

Professor Ed Hill CBE
Chief Executive

Julie Pringle-Stewart
Chief Operating Officer, Chief Financial Officer, Company Secretary

Professor Angela Hatton
Director of Data, Science and Technology, Chief Scientist

Dr Maaten Furlong
Associate Director for National Marine Facilities

Dr John Siddorn
Associate Director for Digital Ocean

Natalie Campbell
Associate Director for Corporate Business Support

Professor Doug Connelly
Associate Director for Science & Technology

Cait Allen
Associate Director for Engagement

Huw Gullick
Associate Director for National Oceanography Centre: Innovations Ltd

Danielle Rossiter
Head of Finance

Matt Eades
Head of People and Skills

SECTION 172 STATEMENT

The NOC Board of Trustees have acted in the way they consider to be in good faith, would be most likely to promote the success of the company for the benefit of its members as a whole, and in doing so have regard to the matters set out in s172(1)(a-f) of the Companies Act 2006, in the decisions taken during the year.

The Board of Trustees are briefed on their legal duties as part of their induction and are able to seek further advice from the Company Secretary, Head of Legal & Governance or access external independent advice if required.

STRATEGY AND CONSIDERATION OF THE CONSEQUENCE OF LONG-TERM DECISIONS

NOC's main mission is making sense of changing seas, on which future human prosperity and well-being depend. Our vision for NOC is by 2025 to be seen as the world's most innovative oceanographic institution. We have now finished the second year of delivery of our five-year strategy "Defining our Future" which aims to preserve the very best of what we do and grow our work – exploring new depths; creating the most innovative technologies; being the most exciting place to learn and work.

Throughout the year, decisions and considerations at Board meetings are consistently linked to how NOC meet their strategic objectives and how NOC can build and develop further to the environment around and in turn, contribute further to achieving public benefit. Decisions are underpinned by a detailed business plan, with budgets built from funded projects and forecasts across the following 5 years, based on experience of research funding; pipeline research areas; and market research on future areas of growth. The Board also considers the longer-term prospects and funding landscape for NOC, taking into account expected changes in technology and skills required and types of research and data analysis to be undertaken in the next 10-15 years, and conscious of NOC's aim to diversify income over the longer term.

OUR PEOPLE

The Board considers that developing and maintaining good employee engagement and cementing NOC's reputation as an employer of choice, are fundamental to the delivery of the NOC Strategy. Further detail on the comprehensive initiatives undertaken by NOC during the year and overseen by the Board is in Goal 7: People and Culture. After feeding into the development of the ED&I (Equality, Diversity and Inclusion) approaches at NOC, the Board approved and signed off the strategy this year. We launched Active Bystander training which has been well received by our employees. Achieving a silver Investors in People award was a particular highlight. We have maintained proactive engagement with the Trade Unions in setting pay for the year, and reviewing our approach to allowances. We continue to engage employees through our Staff Focus Group and Open Staff Meetings, that continue to evolve based on the feedback we encourage. The Board has welcomed the roll out of our World Class Manager programme, to support the leaders across the organisation.

SUSTAINABILITY AND SOCIAL RESPONSIBILITY

As a registered charity with public benefit at the heart of the organisation, NOC's aim is to make a positive contribution to society by advancing ocean science and education, supported by continuing substantial public research investment.

As the national centre and a world leader in marine science, NOC's aim is to lead by example. During 2021-2022 a Sustainability and Social Responsibility Committee has met regularly within the organisation, agreeing the content of NOC's SSR Statement to review the plans for and implementation of its three-year delivery plan, centred around the pillars of People; Operations; Community; Environment; and Research. In its delivery of this plan, NOC is aiming to work to the principles of ISO 26000 Social Responsibility. The Board reviews SSR as part of its regular programme.

HIGH STANDARDS AND BUSINESS CONDUCT

NOC's values of Excellence, Innovative Thinking, Empowerment, Environmental Responsibility; Integrity; and Working in Partnership, underpin the way in which the Trustee Directors take decisions and set standards for the way in which the organisation operates.

Through the delivery of our strategy, NOC's intention is to promote our reputation, reflecting responsible behaviour and maintaining high standards of business conduct. The Board reviews the NOC's Ethics & Research integrity frameworks annually. During the financial year, the Board has had oversight of the operation of the NOC's Ethics Committee, the remit of which is to review new business proposals against NOC's charitable purposes and objectives and has also approved an Ethical Positioning statement for NOC, providing further guidance for the organisation. NOC continues to be committed to following the Seven Principles of Public Life, which outline the ethical standards to which those working in the public sector are expected to adhere and which complement NOC's own values.

MEMBERS

The Trustee Directors are also the Members of NOC. The Directors, in consultation with the Executives, take decisions jointly, in accordance with company law, and regularly review any conflicts of interest they may have in their other capacities or wider activities.

STREAMLINED ENERGY & CARBON REPORTING (SECR)

Environmental Responsibility is one of the NOC's six core Values, and 'Excellent environmental awareness and best practice' is built into our Sustainability and Social Responsibility strategy. To ensure our energy and carbon impact aligned with our beliefs and ambition we undertook the following initiatives to bring down our Greenhouse Gas emissions, waste production and transport (mileage) throughout 2021-22. The total CO_2e, was 15,218.22 tonnes, at an intensity ratio of 0.28 (tCO_2e/m^2) and 281.64 ($kgCO_2e/m^2$) (Table 1).

NOC's annual quantity of emissions in tonnes of carbon dioxide equivalent from activities for which the company is responsible involving the combustion of gas was 988.14 tonnes CO_2e and for the consumption of fuel for ship transport was 13,087.19 tonnes CO_2e. In addition, the annual quantity of emissions in tCO_2e from the purchase of electricity by the company for its own use was 1,114.80 tonnes CO_2e.

The annual quantity of energy consumed from activities for which the company is responsible, for the combustion of gas was 5,394.96 kWh and for the consumption of fuel for the purposes of transport in vehicle fuel was 14,637.00 litres diesel (fleet vehicles), 1.30 tonnes LPG, and ship fuel used was 2,762.40 m^3 for RRS *Discovery* and 1,657.00 tonnes for RRS *James Cook*.

The annual quantity of energy consumed resulting from the purchase of electricity by the company for its own use was 5,250.31 kWh.

The following methodologies were used to calculate the information disclosed for both emissions and energy data:

Energy data was collected from the sites' main meters and converted into CO_2e using UK Government GHG Conversion Factors for company reporting. Ship fuel data is reported by ship Captains and converted to CO_2e using Carbon conversion factors for Marine Gas Oil. Transport data for fleet vehicles was compiled from our Stores' turnover records and converted to CO_2e using Carbon conversion factors for LPG and Diesel (100% mineral oil). CO_2e for transport of hire vehicles was collected from our hire company. Rail and air transport CO_2e data was collected from our transport provider. Transport of employee-owned vehicles used for business travel was calculated using staff expenses from our Finance system and converted to CO_2e using the following assumptions: medium sized car, unknown fuel type, Fuel cost 160/l, 0.0595 l/1km, and the UK Government GHG Conversion Factors for company reporting.

GREENHOUSE GAS EMISSIONS

Emissions have increased across the board compared with last year, with a few exceptions. This is owing to the increased occupancy following COVID-19 and staff returning to site and ship working.

We are on a 100% green tariff, reducing the Carbon impact of our purchased electricity.

Our vessels use Low Sulphur Fuel with a maximum sulphur content of 0.1% at all times.

WASTE

Waste production increased slightly, owing to gradual return to pre-COVID-19 levels as staff return to both sites. The Liverpool site sent zero waste to landfill in 2021-22.

TRANSPORT

NOC owned fleet vehicles and hire vehicles both decreased. Travel between the two sites and to external conferences and meetings is therefore significantly reduced compared to the previous year. 252.69 litres of fuel (unknown type) were used for business travel using personal vehicles, equating to 0.74 tonnes CO_2e emissions. Mileage data was unavailable for this report. As such, reasonable assumptions were made for mileage data based on BEIS fuel cost data.

Air and rail transport all increased substantially due to lifting of some internal travel restrictions. Rail and air transport emissions increased by 379% from 43.55 tonnes CO_2e in 2020-21 to 208.71 tonnes CO_2e in 2021-22. Air travel within the UK accounted for 48% of all emissions from flights in 2021-22.

TABLE 1

SCOPE / EMISSION / ENERGY USE	REPORTING YEAR 2020-21 SOUTHAMPTON	LIVERPOOL	TOTAL	REPORTING YEAR 2021-22 SOUTHAMPTON	LIVERPOOL	TOTAL
Energy Consumption used to calculate emissions (MWh)	4,759.43	343.37	**5,102.80**	4,931.72	318.59	**5,250.31**
Emissions from purchased electricity (Scope 2, location-based) (tCO_2e)	1,010.57	72.91	**1,083.48**	1,047.15	67.65	**1,114.80**
Gas Consumption used to calculate emissions (MWh)	5,812.86	-	**5,812.86**	5,394.96	-	**5,394.96**
Emissions from combustion of gas (scope 1) (tCO_2e)	1,064.68	-	**1,064.68**	988.14	-	**988.14**
Heat purchased for own use (CHP/District heating) (MWh)	-	149.47	**149.47**	-	103.12	**103.12**
Emissions from heat purchased for own use (Scope 2) (CHP/District heating) (tCO_2e)	-	25.52	**25.52**	-	18.82	**18.82**
Fuel used for scientific research deployment - RSS *Discovery* (m^3)	-	-	**2,136.50**	-	-	**2,762.40**
Fuel used for scientific research deployment - RSS *James Cook* (tonnes)	-	-	**1,166.20**			**1,657.00**
Emissions from fuel used for transport purposes- Ships (scope 1) (tCO_2e)	-	-	**9,719.76**	-	-	**13,051.97**
Fuel used for transport purposes- Fleet vehicles (L)	-	-	**19,340.00**	-	-	**11,637.01**
Gas used for transport purposes- Fleet vehicles (tonnes)	-	-	**0.90**	-	-	**1.30**
Emissions from fuel for used transport purposes- Fleet Vehicles (scope 1) (tCO_2e)	-	-	**51.23**	-	-	**35.22**
Fuel used for business transport- Rental Cars (L)	-	-	**6,782.48**	-	-	**-**
Emissions from fuel used for business transport- Rental cars (Scope 3) tCO_2e	-	-	**20.03**	-	-	**8.52**
Fuel used for business transport- Employee owned vehicles (L)	-	-	**1,318.34**	-	-	**252.69**
Emissions from fuel used for business transport- Employee owned vehicles (Scope 3) (tCO_2e)	-	-	**3.89**	-	-	**0.74**
Total CO_2e based on above figures (tonnes)	**-**	**-**	**11,968.59**	**-**	**-**	**15,218.21**
Floor space (m^2)	51234.80	2800.00	**54034.80**	51234.80	2800.00	**54034.80**
Intensity ratio (tCO_2e/m2)	-	-	**0.22**	-	-	**0.28**
Intensity ratio ($kgCO_2e$/m2)	-	-	**221.50**	-	-	**281.64**

TABLE 2

ADDITIONAL REPORTING- WASTE	REPORTING YEAR 2020-21 SOUTHAMPTON	LIVERPOOL	TOTAL	REPORTING YEAR 2021-22 SOUTHAMPTON	LIVERPOOL	TOTAL
Incinerated waste (tonnes)	23.48	0.47	**23.95**	39.36	0.37	**39.73**
Incinerated waste emissions (tCO_2e)	0.50	0.01	**0.51**	0.84	0.01	**0.85**
Landfill (tonnes)	10.20	-	**10.20**	2.28	-	**2.28**
Landfill waste emissions (tCO_2e)	4.76	-	**4.76**	1.06	-	**1.06**
Food Waste (tonnes)	0.93	-	**0.93**	3.24	-	**3.24**
Anaerobic digestion emissions (tCO_2e)	0.01	-	**0.01**	0.03	-	**0.03**
Recycled (tonnes)	43.05	1.20	**44.25**	35.47	1.15	**36.62**
Recycled waste emissions (tCO_2e)	0.92	0.03	**0.95**	0.76	0.02	**0.78**
Total Emissions from disposal of waste generated in operations for which the company does not own or control (Scope 3) / tCO_2e	**6.19**	**0.04**	**6.23**	**2.69**	**0.03**	**2.72**

TABLE 3

ADDITIONAL REPORTING- AIR AND RAIL EMISSIONS	REPORTING YEAR 2020-21 TOTAL	REPORTING YEAR 2021-22 TOTAL
Domestic Air emissions (tCO_2e)	**9.60**	**10.29**
Short-Haul air emissions (tCO_2e)	**12.18**	**51.63**
Long-Haul air emissions (tCO_2e)	**15.90**	**90.39**
International air emissions (tCO_2e)	**4.29**	**41.35**
Domestic rail emissions (tCO_2e)	**1.58**	**14.97**
International rail emissions (tCO_2e)	**0.01**	**0.09**
Total CO_2e based on above figures	**43.56**	**208.72**

RISK MANAGEMENT STATEMENT

Pursuit of our objectives and strategy requires NOC to take risks within an acceptable appetite. A thorough understanding of the risks arising from the activities of the organisation is therefore fundamental to the ongoing effective management of NOC.

Our Risk Management Framework continues to embed and improve to provide management with the ability to anticipate the evolution of risks and the mitigations necessary to remain within appetite; to increase or resilience to change, and to reduce the threats and uncertainty faced by the organisation. It also supports management in the maximisation of opportunities by better facilitating informed decision making whilst also providing assurance that the company is operating within its risk appetite.

The Executive play a critical role in identifying and managing risk throughout the organisation, acting as the escalation route for risks to the Executive, the Risk and Audit Committee and the Board of Trustees. The Board and management are aided by a Risk Management function providing oversight, advice, challenge and guidance for the management of risk; support for risk reporting and the development of policies, procedures, regulatory compliance and training.

PRINCIPAL RISKS AND UNCERTAINTIES

In setting and monitoring the risk appetite of the organisation, the Board of Trustees and the Risk and Audit Committee provide essential and valued external challenge and advice through the robust assessment of the company's emerging and principal risks. Notably, our Board committees have provided challenge and support to management on the key risks impacting the company over the past 12 months. Principal amongst these risks have been:

- Management of the challenges arising as the global economy enters a period of inflation that is considerably higher rate than NOC or its funders have experienced for a number of years especially in respect of the cost of fuel for our ships and energy for our built environment;
- Supply chain shortages and delays resulting from the ongoing impact of COVID-19 and as an outcome of new import / export requirements resulting from Brexit for the goods and services NOC relies upon for the delivery of its objectives;
- A challenging environment for the retention and recruitment of staff to ensure we remain competitive as UK unemployment continues to fall and as a result of barriers to continued reliance on talent based in the EU;
- Management of the continuously evolving threat of cyber-attack through the implementation of available safeguards and recommended best practice whilst also maintaining access to the scientific data we manage and support the communities who access our IT estate; and
- NOC's goal to increase the diversity of its sources of funding against an uncertain landscape for funding from our traditional and largest sources.

NOC continues to evolve its Risk Management Framework in support of improvements in risk insights, accountability, and the future evolution of the organisation.

FINANCIAL REVIEW

RESULTS FOR THE YEAR

The net income and total increase to reserves for the year ended 30 September 2022 amounted to £4,613k (2021 (as restated): decrease £326k).

INCOME

Total income for the year amounted to £78,717k (£67,141k). The income was principally derived principally from UKRI-NERC funding for research, the operation of research infrastructure, data management and services and facilities of £57.6m (2021: £50.5m). This included income of £7,563k towards investment in tangible assets, which is the increase on prior year. A further £15.5m (2021: £12.5m) of other grant income was derived from other grants such as EU and GCRF funding.

EXPENDITURE

Expenditure for the year amounted to £74,093k (2021 (as restated): £67,025k). Staff costs accounted for £35,055k (48%) (2021: £32,701k, 49%) of expenditure in the year. The increase in staff costs compared to the prior year relates to the annual pay award.

PRIOR PERIOD ADJUSTMENT

The prior year period financial statements to 30 September 2021 have been adjusted to incorporate two adjustments. Firstly, to reclassify accrued income totalling £3,717k which had previously been netted off with deferred income on the Statement of Financial Position. There was no net impact on the total funds as a result of this adjustment. The second adjustment was to correct for a VAT liability which was identified after the 30 September 2021 results had been approved. The total liability of £1,274k to 30 September 2021 has been accrued for in the prior year adjustment, reducing the total funds by this amount. The liability relates to a VAT underpayment of £566k in the year to 30 September 2020 and an underpayment of £707k in the year to 30 September 2021.

RESERVES POSITION AND POLICY

NOC recorded a net increase in unrestricted reserves of £6,506k (2021 (as restated): £4,295k) while there was a £812k decrease (2021: £1,526k increase) recorded in restricted reserves. This is due to the phasing of projects with income being earned on restricted projects and released as unrestricted funds to cover central overhead on projects. The restricted fixed asset reserves decreased by £1,081k (2021: £6,147k decrease) being the net of capital additions and depreciation charged during the year. There were no capital additions in the prior year so only depreciation was charged to the fixed asset restricted reserve.

It is the policy of the Trustees to ensure that an amount is held in the unrestricted reserves to mitigate against operational risk likely to materialise over any 12-month period.

On commencing its activities, NOC's reserve policy was that a £2,000k unrestricted sustainability reserve is held for working capital to be grown by £6m over the next 5 years to cover the operational risk. In FY22 the financial and operational risk of the charity changed with some indemnities and guarantees from UKRI-NERC falling away. In addition, rising inflation saw the operational costs of the charity increase against a fixed committed income. The reserves policy was revised to increase the amount of unrestricted reserves to £7.5m needed as free cash for operational risk cover.

As at 30 September 2021 unrestricted reserves were £10,389k. During the current year the Trustees approved £7.5m to remain as available cash with the remaining £2.9m surplus was approved for investment as set out in the Investment Policy below.

INVESTMENT POLICY

The investment policy ensures that unrestricted reserves earmarked for investment opportunities are agreed, prioritised and approved in line with the NOC Strategy and Business Plan. As well as ensuring the delivery of the associated benefits and enhanced capability, whether this is financial or qualitative or both.

NOC will use the TRAC (Transparent Approach to Costing) FEC (Full Economic Cost) as the framework for pricing all contracts and projects and so ensuring it monitors its sustainability. Under TRAC there is the Margin for Sustainability and Investment (MSI) that is built into the FEC recovery that will contribute to the unrestricted reserves annually and then become the overall investment pot and provide ongoing risk cover. It is in the interests of the charity and the beneficiaries of NOC to continue to invest in new capability and further the aims of the charity in terms of its advance of science. TRAC requires that NOC does not hold too much in the sustainability reserve and encourages continual investment using the amount over the sustainability margin. It is in the interests of the charity and the beneficiaries of NOC to continue to invest in new capability and further the aims of the charity in terms of its advance of science object.

The Board approved an investment of £750k out of unrestricted reserves in October 2021 and a further is committed to investing at least £750k each year to upgrade and replenish assets and infrastructure transferred to NOC when its activities commenced. The £7.5m of reserves held as per the Reserve Policy is to be placed on deposit to help mitigate inflationary rises to costs.

NOC is inviting business cases from staff for investment in furthering its charitable objectives. The Finance and Investment Committee consider the each case for the purposes of making a return as well as investing in the strategic aims of NOC. Investments will be kept under regular review.

TRADING SUBSIDIARY

NOC's trading subsidiary, National Oceanography Centre Innovations Limited, was incorporated on 9 October 2019 and is a wholly-owned subsidiary of NOC. In the year to 30 September 2022 the subsidiary reported a loss for the financial year of £37k (2021: £65k). NOCI has a strong opportunity pipeline and a high-level certainty that this will be converted to revenue and be profit making in FY23.

There is an Operating Agreement in place between the charity and the trading subsidiary to ensure there is a structured and governed relationship. This includes detailed clauses which ensure the protection of licensed IP for the charity.

The trading subsidiary undertakes four significant areas of activity; product sales (marine data products), Events (Commercial activity only), Intellectual Property licensing (agreements) and Marine Robotic Innovation Centre – membership and renewal.

The Chair of NOC Innovations reports to the NOC Board of Trustees. The Board of Trustees review the progress of the subsidiary, ensuring that the strategic objectives of the subsidiary are not in conflict with its own and that the financial return is satisfactory. One member of the NOC Board of Trustees is a member of the trading subsidiary board.

FUNDRAISING POLICY

NOC seeks to ensure all fundraising activity is conducted with due regard to the guidance of the Charity's Commission and the Fundraising Regulator. NOC has undertaken limited fundraising activity during the year to 30 September 2022. Going forward, NOC's approach to fundraising will be to seek support from charitable foundations, trusts and corporations through their foundations. In addition, there will be the opportunity for the public to donate via regular or one-off giving or supporting fundraising events.

PLANS FOR FUTURE PERIODS

Our Five-Year Strategy, and its seven interdisciplinary strategic goals, will enable us to maintain commitment and delivery of our Charitable Objectives. Detailed in the Trustees' Report (incorporating the Strategic Report) are the activities we'll be focusing on between 2020-25, as part of our Five-Year Strategy, and our funding framework will diversify to support this.

GOING CONCERN

NOC has put together a Five-Year Business Plan which brings together the National Capability funding from NERC-UKRI with signed research projects and those in the pipeline. For the year 2022/23 a bottom up budgeting process was carried out reviewing the full current cost base of NOC which has been trimmed back to achieve some savings assisting with the rising inflation. As such the cost base is covered by funded projects with some resource available to deliver new projects that are in the pipeline or in early stages of bid development at present; some recruitment is likely to be needed in the coming year when current fixed term appointments end. NOC is deploying detailed resource planning to inform recruitment. As the forecast goes out to 2023/24 and beyond there is more capacity to take on new funded projects, at this time the plan starts to forecast increased income from fundraising and NOC Innovations activity. Once this takes more shape, recruitment will be planned around the skills needed to deliver new areas of activity. Taking into consideration, signed Awards for National Capability infrastructure and science facilities and services spanning the next three-five years, current indications of recommissioning for National Capability Science, previous success rates in research grant rounds with sustained bid submission and forecast of future income based on marketing analysis the indications are that NOC can continue to cover its cost base over the coming five-year period.

In conclusion there are no material uncertainties to cast doubt on NOC's ability to continue as a going concern.

AUDITOR

The auditor, BDO LLP, has indicated their willingness to continue in office. The designated Trustees will propose a motion reappointing the auditor at a meeting of the Trustees.

Approved by order of the members of the board of Trustees and signed on their behalf by

JEREMY DARROCH
CHAIR OF BOARD OF TRUSTEES
27 APRIL 2023

STATEMENT OF TRUSTEES' RESPONSIBILITIES

The Trustees (who are also the directors of the Charity for the purposes of company law) are responsible for preparing the Trustees' Report including the Strategic Report and the financial statements in accordance with applicable law and United Kingdom Accounting Standards (United Kingdom Generally Accepted Accounting Practice).

Company law requires the Trustees to prepare financial statements for each financial period. Under company law the Trustees must not approve the financial statements unless they are satisfied that they give a true and fair view of the state of affairs of the Group and the Charity and of the incoming resources and application of resources, including the income and expenditure of the Group for that period. In preparing these financial statements, the Trustees are required to:

- select suitable accounting policies and then apply them consistently;
- observe the methods and principles in the Charities SORP (FRS102);
- make judgements and accounting estimates that are reasonable and prudent;
- state whether applicable UK Accounting Standards have been followed, subject to any material departures disclosed and explained in the financial statements; and
- prepare the financial statements on the going concern basis unless it is inappropriate to presume that the Group will continue in business.

The Trustees are responsible for keeping adequate accounting records that are sufficient to show and explain the Charity's transactions and disclose with reasonable accuracy at any time the financial position of the Charity and enable them to ensure that the financial statements comply with the Companies Act 2006. They are also responsible for safeguarding the assets of the Group and the Charity and hence for taking reasonable steps for the prevention and detection of fraud and other irregularities.

Financial statements are published on the Charity's website in accordance with legislation in the United Kingdom governing preparation and dissemination of financial statements, which may vary from legislation in other jurisdictions. The maintenance and integrity of the Charity's website is the responsibility of the trustees. The Trustees' responsibility also extends to the ongoing integrity of the financial statements contained therein.

Approved by order of the members of the board of Trustees and signed on their behalf by:

JEREMY DARROCH
CHAIR OF BOARD OF TRUSTEES
27 APRIL 2023

INDEPENDENT AUDITOR'S REPORT

OPINION

In our opinion, the financial statements:

- give a true and fair view of the state of the Group's and of the Parent Charitable Company's affairs as at 30 September 2022 and of the Group's incoming resources and application of resources for the year then ended;
- have been properly prepared in accordance with United Kingdom Generally Accepted Accounting Practice; and
- have been prepared in accordance with the requirements of the Company's Act 2006, Charities and Trustee Investment (Scotland) Act 2005 and regulations 6 and 8 of the Charities Accounts (Scotland) Regulations 2006, as amended in 2010.

We have audited the financial statements of National Oceanography Centre ("the Parent Charitable Company") and its subsidiary ("the Group") for the year ended 30 September 2022, which comprise the consolidated statement of financial activities, the consolidated and charity balance sheets, the consolidated cash flow statement, and notes to the financial statements, including a summary of significant accounting policies. The financial reporting framework that has been applied in their preparation is applicable law and United Kingdom Accounting Standards, including Financial Reporting Standard 102 The Financial Reporting Standard applicable in the UK and Republic of Ireland (United Kingdom Generally Accepted Accounting Practice).

BASIS FOR OPINION

We conducted our audit in accordance with International Standards on Auditing (UK) (ISAs (UK)) and applicable law. Our responsibilities under those standards are further described in the Auditor's responsibilities for the audit of the financial statements section of our report. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

INDEPENDENCE

We remain independent of the Group and the Parent Charitable Company in accordance with the ethical requirements relevant to our audit of the financial statements in the UK, including the FRC's Ethical Standard, and we have fulfilled our other ethical responsibilities in accordance with these requirements.

CONCLUSIONS RELATED TO GOING CONCERN

In auditing the financial statements, we have concluded that the Trustees' use of the going concern basis of accounting in the preparation of the financial statements is appropriate.

Based on the work we have performed, we have not identified any material uncertainties relating to events or conditions that, individually or collectively, may cast significant doubt on the Group and the Parent Charitable Company's ability to continue as a going concern for a period of at least twelve months from when the financial statements are authorised for issue.

Our responsibilities and the responsibilities of the Trustees with respect to going concern are described in the relevant sections of this report.

OTHER INFORMATION

The Trustees are responsible for the other information. The other information comprises the information included in the Annual Report and financial statements, other than the financial statements and our auditor's report thereon. Our opinion on the financial statements does not cover the other information and, except to the extent otherwise explicitly stated in our report, we do not express any form of assurance conclusion thereon. Our responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the financial statements, or our knowledge obtained in the audit or otherwise appears to be materially misstated. If we identify such material inconsistencies or apparent material misstatements, we are required to determine whether there is a material misstatement in the financial statements themselves. If, based on the work we have performed, we conclude that there is a material misstatement of this other information, we are required to report that fact.

We have nothing to report in this regard.

OTHER COMPANIES ACT 2006 REPORTING

In our opinion, based on the work undertaken in the course of the audit:

- the information given in the Trustees' Report, which includes the Directors' Report and the Strategic Report prepared for the purposes of Company Law, for the financial year for which the financial statements are prepared is consistent with the financial statements; and
- the Strategic Report and Directors' Report, which are included in the Trustees' Report, have been prepared in accordance with applicable legal requirements.

In the light of the knowledge and understanding of the Group and the Parent Charitable Company and its environment obtained in the course of the audit, we have not identified material misstatements in the Strategic report or the Trustees' report.

We have nothing to report in respect of the following matters in relation to which the Companies Act 2006 and the Charities and Trustee Investment (Scotland) Act 2005 requires us to report to you if, in our opinion;

- adequate accounting records have not been kept by the Parent Charitable Company, or returns adequate for our audit have not been received from branches not visited by us; or
- the Parent Charitable Company financial statements are not in agreement with the accounting records and returns; or
- certain disclosures of Directors' remuneration specified by law are not made; or
- we have not received all the information and explanations we require for our audit.

RESPONSIBILITIES OF TRUSTEES

As explained more fully in the Trustees' responsibilities statement, the Trustees (who are also the directors of the Charitable Company for the purposes of company law) are responsible for the preparation of the financial statements and for being satisfied that they give a true and fair view, and for such internal control as the Trustees determine is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, the Trustees are responsible for assessing the Group and the Parent Charitable Company's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless the Trustees either intend to liquidate the Group or the Parent Charitable Company or to cease operations, or have no realistic alternative but to do so.

AUDITOR'S RESPONSIBILITIES FOR THE AUDIT OF THE FINANCIAL STATEMENTS

We have been appointed as auditor under section 44(1)(c) of the Charities and Trustee Investment (Scotland) Act 2005 and report in accordance with the Acts and relevant regulations made or having effect thereunder.

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with ISAs (UK) will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

EXTENT TO WHICH THE AUDIT WAS CAPABLE OF DETECTING IRREGULARITIES, INCLUDING FRAUD

Irregularities, including fraud, are instances of non-compliance with laws and regulations. We design procedures in line with our responsibilities, outlined above, to detect material misstatements in respect of irregularities, including fraud. The extent to which our procedures are capable of detecting irregularities, including fraud is detailed below.

We considered those laws and regulations that have a direct impact on the financial statements, such as the Companies Act 2006, Charities and Trustee Investment (Scotland) Act 2005, Charities Act 2011 and tax legislation. We evaluated management's incentives and opportunities for fraudulent manipulation of the financial statements (including the risk of override of controls), and determined that the principal risks were related to inappropriate journal entries to manipulate financial results.

Procedures performed by the audit team included:

- Discussions with management and those charged with governance regarding consideration of known or suspected instances of non-compliance with laws and regulations and fraud;
- Obtaining an understanding of controls designed to prevent and detect irregularities, including specific consideration of controls and accounting policies relating to significant accounting estimates;
- Reviewing minutes from resource and finance committee meetings for evidence of any fraud or non-compliance with laws and regulations;
- Communicating relevant laws and regulations and potential fraud risks to all engagement team members and remaining alert to any indications of fraud or non-compliance with laws and regulations throughout the audit; and
- Assessing journal entries as part of our planned audit approach, with a particular focus on journals entries to key financial statement areas.

Our audit procedures were designed to respond to risks of material misstatement in the financial statements, recognising that the risk of not detecting a material misstatement due to fraud is higher than the risk of not detecting one resulting from error, as fraud may involve deliberate concealment by, for example, forgery, misrepresentations or through collusion. There are inherent limitations in the audit procedures performed and the further removed non-compliance with laws and regulations is from the events and transactions reflected in the financial statements, the less likely we are to become aware of it.

A further description of our responsibilities for the audit of the financial statements is located at the Financial Reporting Council's ("FRC's") website at: https://www.frc.org.uk/auditorsresponsibilities. This description forms part of our auditor's report.

USE OF OUR REPORT

This report is made solely to the Charitable Company's members, as a body, in accordance with Chapter 3 of Part 16 of the Companies Act 2006, and to the Charitable Company's trustee, as a body, in accordance with the Charities and Trustee Investment (Scotland) Act 2005. Our audit work has been undertaken so that we might state to the Charitable Company's members and Trustees those matters we are required to state to them in an auditor's report and for no other purpose. To the fullest extent permitted by law, we do not accept or assume responsibility to anyone other than the Charitable Company and the Charitable Company's members as a body and the Charitable Company's trustees as a body, for our audit work, for this report, or for the opinions we have formed.

DAVID I'ANSON
FOR AND ON BEHALF OF BDO LLP, SENIOR STATUTORY AUDITOR
SOUTHAMPTON, UK
MAY 2023

BDO LLP is a limited liability partnership registered in England and Wales (with registered number OC305127).

CONSOLIDATED STATEMENT OF FINANCIAL ACTIVITIES

FOR THE YEAR ENDED 30 SEPTEMBER 2022 INCORPORATING AN INCOME & EXPENDITURE ACCOUNT

	NOTE	UNRESTRICTED FUNDS £'000	RESTRICTED FUNDS £'000	RESTRICTED FIXED ASSET FUNDS £'000	TOTAL 2022 £'000
INCOME FROM:					
Donations, grants and legacies	1	36,495	29,100	7,563	73,158
Income from trading subsidiary	10	1,122	-	-	1,122
Other trading activities	2	4,215	92	-	4,307
Investments	3	18	-	-	18
Other income		110	2	-	112
Total incoming resources		**41,960**	**29,194**	**7,563**	**78,717**
EXPENDITURE ON:					
Raising funds:					
Expenditure from trading subsidiary	10	1,158	-	-	1,158
Charitable activities	4	40,198	27,471	5,266	72,935
Total expenditure		**41,356**	**27,471**	**5,266**	**74,093**
Net income/ (expenditure)		604	1,723	2,297	4,624
Transfers between funds	15	5,902	(2,535)	(3,378)	(11)
Net movement in funds	15	**6,506**	**(812)**	**(1,081)**	**4,613**
RECONCILIATION OF FUNDS:					
Fund balances at beginning of year (as restated)	15	9,116	1,951	11,394	22,461
Net movement in funds		6,506	(812)	(1,081)	4,613
Total fund balances at 30 September 2022	15	**15,622**	**1,139**	**10,313**	**27,074**

FOR COMPARATIVE PURPOSES – FINANCIAL PERFORMANCE FOR THE PRIOR FINANCIAL YEAR

	NOTE	UNRESTRICTED FUNDS AS RESTATED £'000	RESTRICTED FUNDS £'000	RESTRICTED FIXED ASSET FUNDS £'000	TOTAL 2021 AS RESTATED £'000
INCOME FROM:					
Donations, grants and legacies	1	39,910	23,100	-	63,010
Grant of assets from UKRI	1	-	-	-	-
Income from trading subsidiary	10	376	-	-	376
				-	
Other trading activities	2	3,019	305	-	3,324
Investments	3	3	-	-	3
Other income		428	-	-	428
Total incoming resources		**43,736**	**23,405**	**-**	**67,141**
EXPENDITURE ON:					
Raising funds:					
Expenditure from trading subsidiary	10	442	-	-	442
Charitable activities	4	38,501	22,384	6,140	67,025
Total expenditure		**38,943**	**22,384**	**6,140**	**67,467**
Net income/ (expenditure)		4,793	1,021	(6,140)	(326)
Transfers between funds	15	(498)	505	(7)	-
Net movement in funds	15	**4,295**	**1,526**	**(6,147)**	**(326)**
RECONCILIATION OF FUNDS:					
Fund balances at beginning of year (as restated)	15	4,821	425	17,541	22,787
Net movement in funds		4,295	1,526	(6,147)	(326)
Total fund balances at 30 September 2021	15	**9,116**	**1,951**	**11,394**	**22,461**

All amounts are derived from continuing activities during the above two periods. The consolidated statement of financial activities includes all gains and losses recognised in the year

The notes on pages 96 - 106 form part of these financial statements.

CONSOLIDATED BALANCE SHEET

AT 30 SEPTEMBER 2022

COMPANY NUMBER:	NOTE	2022	2022	2021 AS RESTATED	2021 AS RESTATED
11444362		**£'000**	**£'000**	**£'000**	**£'000**
FIXED ASSETS					
Intangible assets	8		45		574
Tangible assets	9		15,645		15,967
			15,690		**16,541**
CURRENT ASSETS					
Stocks	11	583		488	
Debtors	12	16,639		30,655	
Cash at bank and in hand	17	43,243		42,860	
		60,465		**74,003**	
Creditors: amounts falling due within one year	13	(49,081)		(68,083)	
Net current assets			11,441		5,920
Net assets	16		**27,074**		**22,461**
FUNDS					
Unrestricted	15		15,622		9,116
Restricted	15		1,139		1,951
Restricted fixed asset	15		10,313		11,394
Total funds	15, 21		**27,074**		**22,461**

The financial statements were approved and authorised for issue by the Trustees on and signed on their behalf by:

JEREMY DARROCH
CHAIR OF BOARD OF TRUSTEES
27 APRIL 2023

The notes on pages 96 - 106 form part of these financial statements.

CHARITY BALANCE SHEET

AT 30 SEPTEMBER 2022

COMPANY NUMBER:	NOTE	2022	2022	2021 AS RESTATED	2021 AS RESTATED
11444362		**£'000**	**£'000**	**£'000**	**£'000**
FIXED ASSETS					
Intangible assets	8	45			574
Tangible assets	9	15,598			15,967
Investments	10	-			-
			15,643		**16,541**
CURRENT ASSETS					
Stocks	11	583		488	
Debtors	12	17,773		31,161	
Cash at bank and in hand	17	41,853		42,417	
		60,209		**74,066**	
Creditors: amounts falling due within one year	13	(48,645)		(68,052)	
Net current assets			11,564		6,014
Net assets	16		**27,207**		**22,555**
FUNDS					
Unrestricted	15		15,755		9,210
Restricted	15		1,139		1,951
Restricted fixed asset	15		10,313		11,394
Total funds	15		**27,207**		**22,555**

As permitted by S408 of the Companies Act 2009, the Charity has not presented its own income and expenditure account and related notes. The Charity's surplus for the year was £4,662k (2021 (as restated): deficit £259k).

The financial statements were approved and authorised for issue by the Trustees on and signed on their behalf by:

JEREMY DARROCH
CHAIR OF BOARD OF TRUSTEES
27 APRIL 2023

The notes on pages 96 - 106 form part of these financial statements.

CONSOLIDATED STATEMENT OF CASH FLOWS

	NOTE	2022	2021 AS RESTATED
		£'000	£'000
CASH FLOWS FROM OPERATING ACTIVITIES			
Surplus for the year		4,624	(326)
Depreciation	9	4,737	5,599
Amortisation	8	529	540
Loss on disposal of equipment		109	-
Investment income	3	(18)	(3)
Increase in stocks	11	(95)	(450)
Decrease/ (increase) in debtors	12	14,016	(26,248)
(Decrease)/ increase in creditors	13	(19,002)	42,212
Net cash provided by operating activities		**4,900**	**21,324**
CASH FLOWS FROM INVESTING ACTIVITIES			
Investment income	3	18	3
Purchase of tangible assets	9	(4,535)	(5,118)
Net cash (used in)/ provided by investing activities		**(4,517)**	**(5,115)**
Increase in cash and cash equivalents in the year		**383**	**16,209**
Cash and cash equivalents at the beginning of the year	17	**42,860**	**26,651**
Cash and cash equivalents at the end of the year	17	**43,243**	**42,860**

The notes on pages 96 - 106 form part of these financial statements.

NOTES TO THE FINANCIAL STATEMENTS

BASIS OF PREPARATION OF FINANCIAL STATEMENTS

The financial statements have been prepared on a going concern basis under the historical cost convention. The financial statements have been prepared in accordance with the Charities SORP, 2nd Edition (FRS 102) Accounting and Reporting by Charities: Statement of Recommended Practice applicable to charities preparing their accounts in accordance with the Financial Reporting Standard applicable in the UK and Republic of Ireland (FRS 102) (effective 1 January 2019), the Financial Reporting Standard applicable in the UK and Republic of Ireland (FRS 102) and the Companies Act 2006.

National Oceanography Centre meets the definition of a public benefit entity under FRS 102. Assets and liabilities are initially recognised at historical cost or transaction value unless otherwise stated in the relevant accounting policy.

The financial statements are prepared in Sterling, which is the functional currency of the Group. Monetary amounts in these financial statements are rounded to the nearest thousand pounds.

The preparation of financial statements in compliance with FRS 102 requires the use of certain critical accounting estimates. It also requires management to exercise judgement in applying the Group's accounting policies.

The following principal accounting policies have been applied consistently:

BASIS OF CONSOLIDATION

The Consolidated Statement of Financial Activities (SOFA) and Consolidated Balance Sheet consolidate the financial statements of the Company and its subsidiary undertaking. The results of the subsidiary are consolidated on a line-by-line basis.

The Parent Charitable Company has taken advantage of the exemption allowed under section 408 of the Companies Act 2006 and has not presented its own Statement of Financial Activities in these financial statements.

EXEMPTIONS FOR QUALIFYING ENTITIES UNDER FRS 102

The Parent Charitable Company has taken advantage of the following disclosure exemptions available in FRS 102:

- from preparing a statement of cash flows;
- from financial instruments disclosures; and
- from the aggregate remuneration of the key management personnel as their remuneration is included in the totals for the group as a whole.

GOING CONCERN

The Trustees have reviewed whether it is appropriate for the financial statements to be prepared on a going concern basis.

The key assumption in assessing going concern is that NOC's key funders (UKRI and EU) have continued to pay as per their schedules, and the costs of delivery can continue to be met against rising inflation.

NOC has put together a Five-Year Business Plan which brings together the National Capability funding from NERC-UKRI with signed research projects and those in the pipeline. For the year 2022/23 a bottom up budgeting process was carried out reviewing the full current cost base of NOC which has been trimmed back to achieve some savings assisting with the rising inflation. As such the cost base is covered by funded projects with some resource available to deliver new projects that are in the pipeline or in early stages of bid development at present; some recruitment is likely to be needed in the coming year when current fixed term appointments end. NOC is deploying detailed resource planning to inform recruitment.

As the forecast goes out to 2023/24 and beyond there is more capacity to take on new funded projects, at this time the plan starts to forecast increased income from fundraising and NOC Innovations activity. Once this takes more shape the recruitment will be planned around the skills needed to deliver new areas of activity. Taking into consideration, signed Awards for National Capability infrastructure and science facilities and services spanning the next 3-5 years, current indications of recommissioning for National Capability Science, previous success rates in research grant rounds with sustained bid submission and forecast of future income based on marketing analysis the indications are that NOC can continue to cover its cost base over the coming five-year period.

In conclusion there are no material uncertainties to cast doubt on NOC's ability to continue as a going concern.

INCOME

All income is recognised once the Group has entitlement to the income, it is probable that the income will be received, and the amount of income receivable can be measured reliably.

Grants are included in the Consolidated Statement of Financial Activities on a receivable basis. The balance of income received for specific purposes but not expended during the year is shown in the relevant funds on the Balance Sheet. Where income is received in advance of entitlement of receipt, its recognition is deferred and included in creditors as deferred income. Where entitlement occurs before income is received, the income is accrued. Donations and grants for particular purposes are included in income as restricted funds.

Where grants relate to donated fixed assets, they are measured at fair value, unless it is impractical to measure this reliably, in which case the cost of the item to the donor is used. The gain is recognised as income from donations and a corresponding amount is included in the appropriate fixed asset class and depreciated over the useful economic life, in accordance with the Group's accounting policies.

Investment income relates to interest on funds held on deposit and is included when receivable and the amount can be measured reliably by the Group; this is normally upon notification of the interest paid or payable by the institution with whom the funds are deposited.

Incoming resources from charitable trading activity are accounted for when earned.

Where a contract for services is performed gradually over time the revenue is recognised as the activity progresses. The amount of revenue reflects the costs incurred up to the balance sheet date.

All other income is recognised on an accruals basis once the Group is legally entitled to receipt.

EXPENDITURE

Expenditure is recognised once there is a legal or constructive obligation to transfer economic benefit to a third party, it is probable that a transfer of economic benefits will be required in settlement and the amount of the obligation can be measured reliably.

Expenditure is classified by activity. The costs of each activity are made up of the total of direct costs and shared costs, including support costs involved in undertaking each activity.

Direct costs attributable to a single activity are allocated directly to that activity. Shared costs which contribute to more than one activity and support costs which are not attributable to a single activity are apportioned between those activities on a basis consistent with the use of resources. Central staff costs are allocated on the basis of time spent, and depreciation charges allocated on the portion of the asset's use.

Expenditure on raising funds includes all expenditure incurred by the Group to raise funds for its charitable purposes and includes costs of all fundraising activities events and non-charitable trading.

Expenditure on charitable activities is incurred on directly undertaking the activities which further the Group's objectives, as well as any associated support costs.

Governance costs include those incurred in the governance of the Charity and its assets and are primarily associated with constitutional and statutory requirements.

All expenditure is inclusive of irrecoverable VAT.

FOREIGN CURRENCIES

Monetary assets and liabilities denominated in foreign currencies are translated into sterling at rates of exchange ruling at the reporting date.

Transactions in foreign currencies are translated into sterling at the rate ruling on the date of the transaction.

Exchange gains and losses are recognised in the Consolidated Statement of Financial Activities.

INTANGIBLE ASSETS AND AMORTISATION

Intangible assets are capitalised and recognised when future economic benefits are probable, and the cost or value of the asset can be measured reliably.

Intangible assets are initially recognised at cost. After recognition, under the cost model, intangible assets are measured at cost less any accumulated amortisation and any accumulated impairment losses.

At each reporting date the Charity assesses whether there is any indication of impairment. If such indication exists, the recoverable amount of the asset is determined to be the higher of its fair value less costs to sell and its value in use. An impairment loss is recognised where the carrying amount exceeds the recoverable amount.

Amortisation is provided on intangible assets at rates calculated to write off the cost of each asset on a straight-line basis over its expected useful life.

The estimated useful lives are as follows:

Computer software	- 5 years straight line

TANGIBLE FIXED ASSETS AND DEPRECIATION

Tangible fixed assets are capitalised and recognised when future economic benefits are probable, and the cost or value of the asset can be measured reliably.

Tangible fixed assets are initially recognised at cost. After recognition, under the cost model, tangible fixed assets are measured at cost less accumulated depreciation and any accumulated impairment losses. All costs incurred to bring a tangible fixed asset into its intended working condition should be included in the measurement of cost.

Assets in the course of construction are included at costs incurred to date. Depreciation on these assets is not charged until they are brought into use.

At each reporting date the Charity assesses whether there is any indication of impairment. If such indication exists, the recoverable amount of the asset is determined to be the higher of its fair value less costs to sell and its value in use. An impairment loss is recognised where the carrying amount exceeds the recoverable amount.

Depreciation is charged on a straight-line basis over their estimated useful lives.

Depreciation is provided on the following bases:

Scientific equipment	- 5 years
Marine pool	- 5 years
Fixtures and fittings	- 5 years
Computer equipment	- 5 years
Plant and machinery	- 5 years

The assets' residual values, useful lives and depreciation methods are reviewed, and adjusted prospectively if appropriate, or if there is an indication of a significant change since the last reporting date.

Gains and losses on disposals are determined by comparing the proceeds with the carrying amount and are recognised in the Consolidated Statement of Financial Activities.

INVESTMENTS

Investments in subsidiaries are valued at cost less provision for impairment.

STOCKS

Stocks comprise of fuel held in storage for vessels and ship bond stock. Fuel stock is recorded at cost. Ship bond stock is valued at the lower of cost and net realisable value after making due allowance for obsolete and slow-moving stocks.

DEBTORS

Trade and other debtors are recognised at the settlement amount after any trade discount offered. Prepayments are valued at the amount prepaid net of any trade discounts due.

Work in progress reflects the costs incurred to balance sheet date on a contract for services.

CASH AND CASH EQUIVALENTS

Cash at bank and in hand includes cash and short term highly liquid investments with a short maturity of three months or less from the date of acquisition or opening of the deposit or similar account.

LIABILITIES AND PROVISIONS

Liabilities are recognised when there is an obligation at the Balance Sheet date as a result of a past event, it is probable that a transfer of economic benefit will be required in settlement, and the amount of the settlement can be estimated reliably.

Liabilities are recognised at the amount that the Group anticipates it will pay to settle the debt or the amount it has received as advanced payments for the goods or services it must provide.

FINANCIAL INSTRUMENTS

The Group only has financial assets and financial liabilities of a kind that qualify as basic financial instruments. Basic financial instruments are initially recognised at transaction value and subsequently measured at their settlement value with the exception of bank loans which are subsequently measured at amortised cost using the effective interest method.

OPERATING LEASES

Rentals paid under operating leases are charged to the Consolidated Statement of Financial Activities on a straight-line basis over the lease term.

PENSIONS

The Group operates a defined contribution pension scheme, and the pension charge represents the amounts payable by the Group to the fund in respect of the year.

The Group is also participating in a multi-employer plan with The National Environmental Research Council which is a defined benefit scheme funded from annual grant in aid on a pay as you go basis. It is not possible for the Group to obtain sufficient information to enable it to account for the plan as a defined benefit plan, it therefore accounts for the plan as a defined contribution plan.

FUND ACCOUNTING

General funds are unrestricted funds which are available for use at the discretion of the Trustees in furtherance of the general objectives of the Group and which have not been designated for other purposes.

Designated funds comprise unrestricted funds that have been set aside by the Trustees for particular purposes. The aim and use of each designated fund is set out in the notes to the financial statements.

Restricted funds are funds which are to be used in accordance with specific restrictions imposed by donors or which have been raised by the Group for particular purposes. The costs of raising and administering such funds are charged against the specific fund. The aim and use of each restricted fund is set out in the notes to the financial statements.

Restricted fixed asset funds represent the moveable assets of the National Oceanography Centre, being the plant, equipment (including IT equipment), libraries, stocks, inventory and consumables of the operation. Without them the National Oceanography Centre could not operate. They are shown separately to other unrestricted funds due to the size and importance of these assets to the National Oceanography Centre.

Investment income, gains and losses are allocated to the appropriate fund.

GIFT AID DONATIONS MADE TO THE CHARITY

Donations made by the subsidiary to the Parent Charity are recognised as income in the charity either when paid or at the date when the subsidiary has a legal liability to make the donation payment if earlier.

RESEARCH VESSELS

NOC operates and manages two research vessels owned by UKRI under a bareboat charter at peppercorn rates. The terms of the bareboat charter do not meet the definition of a lease and, due to the unique nature of the vessels, it is not possible to reasonably quantify the value ascribed to the ownership and operation of them.

CRITICAL ACCOUNTING ESTIMATES & AREAS OF JUDGEMENT

Estimates and judgements are continually evaluated and are based on historical experience and other factors, including expectations of future events that are believed to be reasonable under the circumstances.

CRITICAL ACCOUNTING ESTIMATES AND ASSUMPTIONS

The Group makes estimates and assumptions concerning the future. The resulting accounting estimates and assumptions will, by definition, seldom equal the related actual results. The estimates and assumptions that have a significant risk of causing a material adjustment to the carrying amounts of assets and liabilities within the next financial year are discussed below.

CRITICAL AREAS OF JUDGEMENT

Depreciation is a key estimate in the accounts which requires management judgement over the useful life of the assets and the residual values. The policy has been set out in the notes above.

1 INCOME FROM DONATIONS, GRANTS AND LEGACIES

	UNRESTRICTED FUNDS 2022	RESTRICTED FUNDS 2022	RESTRICTED FIXED ASSET FUNDS 2022	TOTAL FUNDS 2022	TOTAL FUNDS 2021
	£'000	£'000	£'000	£'000	£'000
DONATIONS					
Other donations	-	19	-	19	28
	-	**19**	**-**	**19**	**28**
INCOME FROM GRANTS					
UKRI NERC grant	21,731	28,342	7,563	57,636	50,505
UKRI other grants	6,072	278	-	6,350	3,118
Other grants	8,692	461	-	9,153	9,359
	36,495	**29,081**	**7,563**	**73,139**	**62,982**
	36,495	**29,100**	**7,563**	**73,158**	**63,010**

2 INCOME FROM OTHER TRADING ACTIVITIES

	UNRESTRICTED FUNDS 2022	RESTRICTED FUNDS 2022	TOTAL FUNDS 2022	TOTAL FUNDS 2021
	£'000	£'000	£'000	£'000
Rental	1,767	-	1,767	696
Disbursements	1,025	-	1,025	1,539
Maintenance and repairs income	1,407	16	1,423	1,008
Bond sales	-	51	51	56
Ship charter income	-	-	-	-
Other trading income	16	25	41	25
	4,215	**92**	**4,307**	**3,324**

3 INVESTMENT INCOME

	UNRESTRICTED FUNDS 2022	TOTAL FUNDS 2022	TOTAL FUNDS 2021
	£'000	£'000	£'000
Bank interest	**18**	**18**	**3**

4 EXPENDITURE ON CHARITABLE ACTIVITIES

	STAFF COSTS 2022	VESSEL COSTS 2022	RESEARCH COSTS 2022	ESTATE COSTS 2022	DEPRE-CIATION 2022	OTHER COSTS 2022	TOTAL 2022	TOTAL 2021 AS RESTATED
	£'000	£'000	£'000	£'000	£'000	£'000	£'000	£'000
ACTIVITIES UNDERTAKEN DIRECTLY								
Scientific research	24,874	9,561	2,542	3,105	4,037	7,424	51,543	48,019
Support costs:								
- Operations & finance staff	10,181	-	-	-	-	-	10,181	9,405
- Management, operations & facilities costs	-	-	-	3,507	-	6,222	9,729	7,984
- Depreciation	-	-	-	-	1,229	-	1,229	1,446
- Governance costs	-	-	-	-	-	253	253	171
	35,055	**9,561**	**2,542**	**6,612**	**5,266**	**13,899**	**72,935**	**67,025**

	TOTAL FUNDS 2022	TOTAL FUNDS 2021
	£'000	£'000
ANALYSIS OF GOVERNANCE COSTS		
Audit fees:		
- Audit of financial statements	98	83
- Other fees paid to auditors	28	29
Trustee remuneration and expenses	9	6
Legal and professional fees	102	41
Finance costs	16	12
	253	**171**

Total expenditure on charitable activities for the year was £72,935 (2021 (as restated): £67,025k). Of that expenditure £40,198k (2021(as restated): £38,501k) was unrestricted, £27,471k (2021: £22,384k) was restricted and £5,266k (2021: £6,140k) was restricted fixed asset funds.

5 NET INCOME

	2022	2021
	£'000	£'000
NET INCOME IS STATED AFTER CHARGING:		
Depreciation of tangible fixed assets	4,737	5,599
Amortisation of intangible fixed assets	529	540
Loss on disposal of equipment	109	-
Auditors' remuneration:		
- Audit fees	98	83
- Non-audit fees	28	29
(Gain) / Loss on foreign exchange	(173)	166

6 STAFF COSTS

	2022	2021
GROUP AND CHARITY	£'000	£'000
Wages and salaries	27,556	25,139
National insurance contributions	2,871	2,559
Pension costs	4,628	5,003
	35,055	**32,701**

During the year there were redundancy costs of £378k (2021: £247k) which were paid to 23 (2021: 25) members of staff. Of these 9 (2021: 17) were statutory redundancy pay and 14 (2021: 9) were severance pay.

The number of employees for the year was as follows:

	2022	2021
GROUP AND CHARITY	£'000	£'000
Science and research staff	237	241
Fundraising staff	4	3
Operations and finance staff	201	198
Engineers and technicians	119	108
Mariners	86	88
	647	**638**

6 STAFF COSTS (CONTINUED)

The number of employees whose employee benefits (excluding employer pension costs) exceeded £60,000 was:

	2022	2021
	NUMBER	NUMBER
£60,001 - £70,000	28	22
£70,001 - £80,000	10	6
£80,001 - £90,000	5	4
£90,001 - £100,000	1	-
£100,001 - £110,000	-	1
£110,001 - £120,000	2	2
£120,001 - £130,000	-	-
£130,001 - £140,000	-	-
£140,001 - £150,000	1	-

	2022	2021
	£'000	£'000
Key management personnel salaries (inc. pensions)		
(Key management personnel are the Senior Management Team, listed as the Executive Committee on page 11 of this report)	438	414

7 TRUSTEES' REMUNERATION AND EXPENSES

During the year, one Trustee (David John Gee) received £9 k (2021: £5.5k) in relation to remuneration or other benefits.

The remuneration was agreed and provided under a provision in the governing document of the Charity. Remuneration was provided due to the Trustees' role as the Chair of the Audit and Risk Committee, which requires a range of specialist knowledge and experience and has a wide remit in terms of the role that the Trustee is required to provide. No other benefits were provided.

During the year ended 30 September 2022, one Trustee was reimbursed £0.5k (2021: £nil k) for expenses in relation to travel and subsistence.

During the year indemnity insurance of £47 k (2021: £66k) was purchased in respect of all the Trustees and Officers of the Charity.

8 INTANGIBLE ASSETS

GROUP AND CHARITY	COMPUTER SOFTWARE AND TOTAL
	£'000
At 1 October 2021	1,609
Additions	-
At 30 September 2022	**1,609**
AMORTISATION	
At 1 October 2021	1,035
Charge for the year	529
At 30 September 2022	**1,564**
NET BOOK VALUE	
At 30 September 2022	**45**
At 30 September 2021	**574**

9 TANGIBLE FIXED ASSETS

GROUP	SCIENTIFIC EQUIPMENT	MARINE POOL	FIXTURES & FITTINGS	COMPUTER EQUIPMENT	PLANT & MACHINERY	TOTAL
	£'000	£'000	£'000	£'000	£'000	£'000
COST OR VALUATION						
At 1 October 2021	16,826	7,759	122	1,524	1,945	28,176
Additions	1,932	1,693	47	565	345	4,582
Disposals	(273)	(11)	(122)	(7)	(4)	(417)
At 30 September 2022	**18,485**	**9,441**	**47**	**2,082**	**2,286**	**32,341**
DEPRECIATION						
At 1 October 2021	7,359	2,958	49	845	998	12,209
Charge for the year	2,901	1,137	26	292	381	4,737
On disposals	(100)	(75)	(75)	-	-	(250)
At 30 September 2022	**10,160**	**4,020**	**-**	**1,137**	**1,379**	**16,696**
NET BOOK VALUE						
At 30 September 2022	**8,325**	**5,421**	**47**	**945**	**907**	**15,645**
At 30 September 2021	**9,467**	**4,801**	**73**	**679**	**947**	**15,967**

9 TANGIBLE FIXED ASSETS (CONTINUED)

CHARITY	SCIENTIFIC EQUIPMENT	MARINE POOL	FIXTURES & FITTINGS	COMPUTER EQUIPMENT	PLANT & MACHINERY	TOTAL
	£'000	£'000	£'000	£'000	£'000	£'000
COST OR VALUATION						
At 1 October 2021	16,826	7,759	122	1,524	1,945	28,176
Additions	1,932	1,693	-	565	345	4,672
Disposals	(273)	(11)	(122)	(7)	(4)	(417)
At 30 September 2022	**18,485**	**9,441**	**-**	**2,082**	**2,286**	**32,294**
DEPRECIATION						
At 1 October 2021	7,359	2,958	49	845	998	12,209
Charge for the year	2,901	1,137	26	292	381	4,737
On disposals	(100)	(75)	(75)	-	-	(250)
At 30 September 2022	**10,160**	**4,020**	**-**	**1,137**	**1,379**	**16,696**
NET BOOK VALUE						
At 30 September 2022	**8,325**	**5,421**	**-**	**945**	**907**	**15,598**
At 30 September 2021	**9,467**	**4,801**	**73**	**679**	**947**	**15,967**

10 FIXED ASSET INVESTMENTS

The addition in the year related to 100% of the share capital on incorporation of National Oceanography Centre Innovations Limited on the 9th October 2019 at the cost of £1.

PRINCIPAL SUBSIDIARIES

The following was a subsidiary undertaking of the Charity:

NAME	COMPANY NUMBER	REGISTERED OFFICE OR PRINCIPAL PLACE OF BUSINESS	PRINCIPAL ACTIVITY	CLASS OF SHARES	HOLDING
National Oceanography Centre Innovations Limited	12250763	National Oceanography Centre, European Way, Southampton, United Kingdom, SO14 3ZH	Development of products and services based on the output of ocean science research and engineering	Ordinary	100%

	2022	2021
	£'000	£'000
Income	1,122	376
Expenditure	(1,158)	(442)
Net liabilities	(36)	(66)

11 STOCKS

	2022	2021
	£'000	£'000
Marine fuel	546	432
Ship bond	37	56
	583	**488**

The difference between purchase price or production cost of stocks and their replacement cost is not material.

During the year there was no impairment to the value of stock (2021 - £Nil).

12 DEBTORS

	GROUP 2022	GROUP 2021 AS RESTATED	CHARITY 2022	CHARITY 2021 AS RESTATED
	£'000	£'000	£'000	£'000
Trade debtors	10,705	23,598	10,577	23,424
Group debtors	-	-	1,360	680
Prepayments	1,505	1,555	1,505	1,555
Accrued income	4,337	5,433	4,239	5,433
Other debtors	92	69	92	69
	16,639	**30,655**	**17,773**	**31,161**

During the year there was no impairment to the value of debtors in relation to bad debt provisions (2021 - £Nil).

13 CREDITORS: AMOUNTS FALLING DUE WITHIN ONE YEAR

	GROUP 2022	GROUP 2021 AS RESTATED	CHARITY 2022	CHARITY 2021 AS RESTATED
	£'000	£'000	£'000	£'000
Trade creditors	1,861	1,427	1,861	1,427
Due to Marine and EU partners	3,347	2,366	3,347	2,366
Pension accrual	268	207	268	207
Social security and other taxes	2,062	1,335	1,851	1,335
Accruals	4,017	3,076	4,007	3,061
Deferred income (see note 14)	37,526	59,672	37,311	59,655
	49,081	**68,083**	**48,645**	**68,051**

14 DEFERRED INCOME

	GROUP 2022	GROUP 2021 AS RESTATED	CHARITY 2022	CHARITY 2021 AS RESTATED
	£'000	£'000	£'000	£'000
At 1 October	59,672	14.413	59,655	14,333
Released to income	(72,043)	(55,938)	(72,027)	(60,401)
Amounts deferred in year	49,897	101,197	49,683	105,723
Carried forward	**37,526**	**59,672**	**37,311**	**59,655**

Deferred income relates to grant income, including research grants, which are received in advance of specific conditions being met. The income is shown as deferred until those conditions are fully satisfied.

15 FUNDS

GROUP	BALANCE AT 30 SEPTEMBER 2021 AS RESTATED	INCOME	EXPENDITURE	TRANSFERS	BALANCE AT 30 SEPTEMBER 2022
	£'000	£'000	£'000	£'000	£'000
UNRESTRICTED FUNDS					
General unrestricted:					
Unrestricted funds	9,116	41,960	(41,356)	5,902	15,622
Total unrestricted funds	**9,116**	**41,960**	**(41,356)**	**5,902**	**15,622**
RESTRICTED FUNDS					
Restricted funds	1,951	29,194	(27,471)	(2,535)	1,139
Restricted fixed asset funds	11,394	7,563	(5,266)	(3,378)	10,313
Total restricted funds	**13,345**	**36,757**	**(32,737)**	**(5,913)**	**11,452**
Total funds	**22,461**	**78,717**	**(74,093)**	**(11)**	**27,074**

15 FUNDS (CONTINUED)

CHARITY	BALANCE AT 30 SEPTEMBER 2021 AS RESTATED	INCOME	EXPENDITURE	TRANSFERS	BALANCE AT 30 SEPTEMBER 2022
	£'000	£'000	£'000	£'000	£'000
UNRESTRICTED FUNDS					
General unrestricted:					
Unrestricted funds	9,210	40,838	(40,198)	5,905	15,755
Total unrestricted funds	**9,210**	**40,838**	**(40,198)**	**5,905**	**15,755**
RESTRICTED FUNDS					
Restricted funds	1,951	29,194	(27,471)	(2,535)	1,139
Restricted fixed asset funds	11,394	7,563	(5,266)	(3,378)	10,313
Total restricted funds	**13,345**	**36,757**	**(32,737)**	**(5,913)**	**11,452**
Total funds	**22,555**	**77,595**	**(72,935)**	**(8)**	**27,207**

GROUP	BALANCE AT 30 SEPTEMBER 2020 AS RESTATED	INCOME	EXPENDITURE	TRANSFERS	BALANCE AT 30 SEPTEMBER 2021 AS RESTATED
	£'000	£'000	£'000	£'000	£'000
UNRESTRICTED FUNDS					
Designated:					
Long Term Maintenance	(1,042)	-	-	1,042	-
General unrestricted:					
Unrestricted funds	5,863	43,736	(38,943)	(1,540)	9,116
Total unrestricted funds	**4,821**	**43,736**	**(38,943)**	**(498)**	**9,116**
RESTRICTED FUNDS					
Restricted funds	425	23,405	(22,384)	505	1,951
Restricted fixed asset funds	17,541	-	(6,140)	(7)	11,394
Total restricted funds	**17,966**	**23,405**	**(28,524)**	**498**	**13,345**
Total funds	**22,787**	**67,141**	**(67,467)**	**-**	**22,461**

15 FUNDS (CONTINUED)

CHARITY	BALANCE AT 30 SEPTEMBER 2020 AS RESTATED	INCOME	EXPENDITURE	TRANSFERS	BALANCE AT 30 SEPTEMBER 2021 AS RESTATED
	£'000	£'000	£'000	£'000	£'000
UNRESTRICTED FUNDS					
Designated:					
Long Term Maintenance	(1,042)	-	-	1,042	-
General unrestricted:					
Unrestricted funds	5,891	43,360	(38,501)	(1,540)	9,210
Total unrestricted funds	**4,849**	**43,360**	**(38,501)**	**(498)**	**9,210**
RESTRICTED FUNDS					
Restricted funds	425	23,405	(22,384)	505	1,951
Restricted fixed asset funds	17,541	-	(6,140)	(7)	11,394
Total restricted funds	**17,966**	**23,405**	**(28,524)**	**498**	**13,345**
Total funds	**22,815**	**66,765**	**(67,025)**	**-**	**23,121**

General funds are unrestricted funds which are available for use at the discretion of the Trustees in furtherance of the general objectives of the Group and which have not been designated for other purposes.

Designated funds comprise unrestricted funds that have been set aside by the Trustees for particular purposes.

The aim and use of each designated fund are set out in the notes to the financial statements.

Restricted funds are funds which are to be used in accordance with specific restrictions imposed by donors or which have been raised by the Group for particular purposes. The costs of raising and administering such funds are charged against the specific fund.

Restricted funds comprise of NMF ship operating income, charter income balance and NMEP capital replacement.

Restricted fixed asset funds are funds for the sole use of acquiring the moveable assets of NOC on the 1 November 2019 and the expenditure is the subsequent depreciation of these assets.

16 NET ASSETS

GROUP	FIXED ASSETS 2022	CURRENT ASSETS 2022	CURRENT LIABILITIES 2022	TOTAL 2022
	£'000	£'000	£'000	£'000
General unrestricted	47	51,435	(35,860)	15,622
Restricted	5,330	9,030	(13,221)	1,139
Restricted fixed asset	10,313	-		10,313
	15,690	**60,465**	**(49,081)**	**27,074**

16 NET ASSETS (CONTINUED)

GROUP	FIXED ASSETS 2021 AS RESTATED	CURRENT ASSETS 2021 AS RESTATED	CURRENT LIABILITIES 2021 AS RESTATED	TOTAL 2021 AS RESTATED
	£'000	£'000	£'000	£'000
General unrestricted	-	21,368	(12,252)	9,116
Restricted	5,147	52,635	(55,831)	1,951
Restricted fixed asset	11,394	-	-	11,394
	16,541	**74,003**	**(68,083)**	**22,461**

CHARITY	FIXED ASSETS 2022	CURRENT ASSETS 2022	CURRENT LIABILITIES 2022	TOTAL 2022
	£'000	£'000	£'000	£'000
General unrestricted	-	51,179	(35,424)	15,755
Restricted	5,330	9,030	(13,221)	1,139
Restricted fixed asset	10,313	-	-	10,313
	15,643	**60,209**	**(48,645)**	**27,207**

CHARITY	FIXED ASSETS 2021 AS RESTATED	CURRENT ASSETS 2021 AS RESTATED	CURRENT LIABILITIES 2021 AS RESTATED	TOTAL 2021 AS RESTATED
	£'000	£'000	£'000	£'000
General unrestricted	-	21,431	(12,221)	9,210
Restricted	5,147	52,635	(55,831)	1,951
Restricted fixed asset	11,394	-	-	11,394
	16,541	**74,066**	**(68,052)**	**22,555**

17 CASH AND CASH EQUIVALENTS

	GROUP 2022	GROUP 2021	CHARITY 2022	CHARITY 2021
	£'000	£'000	£'000	£'000
Cash at bank	43,243	42,860	41,853	42,417

18 ANALYSIS OF NET FUNDS

	AT 1 OCTOBER 2021	CASH FLOWS	AT 30 SEPTEMBER 2022
GROUP			
Bank and cash balances	42,860	383	43,243
CHARITY			
Bank and cash balances	42,417	(564)	41,853

	AT 1 OCTOBER 2020	CASH FLOWS	AT 30 SEPTEMBER 2021
GROUP			
Bank and cash balances	26,651	16,209	42,860
CHARITY			
Bank and cash balances	26,467	15,950	42,417

19 PENSION COMMITMENTS

UKRI-NERC employees are entitled to be members of the Research Council's Pension Scheme which is a defined benefit scheme funded from annual grant-in-aid and pay-as-you-go basis. The pension scheme is contributory and is administered by the Research Council's Joint Superannuation Service.

The scheme is a multi-employer scheme, for which a separate Research Council's Pension Scheme account is published. NERC are unable to identify their share of the underlying assets and liabilities and those relating to NOC.

Employees who joined after 1 November 2019 are entitled to be members of the National Oceanography Centre Group Pension Scheme. This is a defined contribution pension scheme administered by Legal and General. Contributions for the year were employer's 10% and employees a minimum of 5%.

The pension costs charge for the year represents contributions payable to the schemes and amounted to £4,628 k (2021: £5,003k).

20 RELATED PARTY TRANSACTIONS

The Charity recharged employment costs of £514k (2021: £307k) to National Oceanography Centre Innovations Limited, its subsidiary and also incurred costs of £616k (2021: £134k) on behalf of its subsidiary.

At the year end the Charity was owed £1,360k (2021: £680k) by National Oceanography Centre Innovations Limited.

Transactions with Trustees are detailed in note 15.

21 PRIOR PERIOD ADJUSTMENT

The comparative figures for the year ended 30 September 2021 have been restated to correct two errors.

Firstly, debtors and creditors due within one year in the Consolidated and Charity Balance Sheets have been restated to recognise accrued income totalling £5,433k which had previously been netted off with deferred income. There is no impact on net current assets, total funds or net income as a result of this adjustment. Although there is no cash impact, the reconciliation of the deficit/(surplus) for the year to the net cash provided by operating activities for the year ended 30 September 2021 in the Consolidated Statement of Cash Flows has been restated for the amended movements in debtors and creditors.

The second correction is to recognise a VAT liability identified after the 30 September 2021 financial statements had been approved. Accounting for VAT is complex given the Charity's mixture of taxable, exempt, and non-business income and a review commissioned by the Trustees identified historic discrepancies that have been corrected in these financial statements. Creditors as at 30 September 2021 in the Consolidated and Charity Balance Sheets have been increased by £1,273k from the amounts previously stated, with total funds reduced by the same amount. Unrestricted expenditure on charitable activities for the year ended 30 September 2021 in the Consolidated Statement of Financial Activities has been increased by £707k from the amount previously stated, with net income/(expenditure) and net movement in funds restated accordingly. Because some of the VAT liability relates to before 1 October 2020, the unrestricted fund balance at the beginning of the comparative year has been reduced by £566k. Consequently, fund balances at 30 September 2021 have been reduced by £1,273k. Again, there is no impact on cash flows, but the reconciliation of the deficit/(surplus) for the year to the net cash provided by operating activities for the year ended 30 September 2021 in the Consolidated Statement of Cash Flows has been restated for the revised net expenditure for the year and amended movement in creditors.

	£'000
ADJUSTMENT 1 - RECLASSIFICATION OF ACCRUED INCOME	
Increase in Debtors - Accrued Income	5,433
Increase in Creditors - Deferred Income	(5,433)
ADJUSTMENT 2 - RECOGNITION OF VAT LIABILITY	
Increase in Creditors - Social Security and Other Taxes	(1,273)
Total Reduction in Fund Balance at 30 September 2021	**(1,273)**

STAY IN TOUCH

The National Oceanography Centre is one of the world's top oceanographic institutions. We provide the UK's National Capability needed to be a top global player, to lead and participate in international co-operations.

We undertake world leading research in large scale oceanography and ocean measurement technology innovation; working with government and business to turn great science and technology into advice and applications. We support scientists in universities and research institutes with facilities, research infrastructure and irreplaceable data assets – enabling the UK to harness the full power and diversity of its ocean science talent.

To get bite-sized updates on our Science and Technology, Latest News, Public Events, Career Opportunities and Educational Resources, subscribe to Ocean News via our website or follow us on social media:

WWW NOC.AC.UK

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National Oceanography Centre is a company limited by guarantee, set up under the law of England and Wales, company number 11444362. National Oceanography Centre is registered as a charity in England and Wales, charity number 1185265, and in Scotland, charity number SC049896.
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NATIONAL OCEANOGRAPHY CENTRE

England & Wales - Charity number 1185265

Accounts

National Oceanography Centre

ANNUAL REPORT & FINANCIAL STATEMENTS

FOR THE YEAR ENDED 30 SEPTEMBER 2021

REGISTERED NUMBER 11444362

CHARITY NUMBERS 1185265 & SC049896

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NATIONAL OCEANOGRAPHY CENTRE
A Company Limited by Guarantee
Annual Report and Financial Statements, Year Ended 30 September 2021
Registered Number 11444362, Charity Numbers 1185265 & SC049896

FOREWORD BY THE CHAIR OF TRUSTEES

COP26, the United Nations climate change conference

This is our second annual report, but this last year has been anything but routine. The new NOC is taking shape, with strong governance established and new funding streams being developed. The charity is stable and well, despite the challenges of COVID-19. I would like to thank all our staff and our partners for achieving so much throughout the disruption.

I would also like to congratulate our CEO Professor Ed Hill on receiving a CBE in the Queen's Birthday Honours – in recognition of his continued dedication to the ocean.

The UK hosting of the G7 summit helped us put the ocean firmly on the agenda and we had considerable input into ocean policy development in this area, showing real leadership for the UK. COP26 demonstrated that the world is finally acknowledging the seriousness of climate change and the need for science and innovation to tackle some of the challenges. Similarly, as businesses set themselves ambitious net zero targets, the NOC is able to work in partnership with industry to come up with solutions and inspire lasting change. We met as a Board and Executive to look at our ambitions over the next few decades – how we adapt and evolve our work while remaining true to our core purpose.

We have a greater opportunity than ever for our scientific voice to be heard, and a responsibility to educate and lead, both in the UK and globally. The Board and I are proud to be associated with all the great work at the NOC and our role continues to prove exciting, demanding and worthwhile.

JOHN HIRST CBE
Chair of Board of Trustees
15 December 2021

REPORT OF THE CHIEF EXECUTIVE

Earlier in the year, we were independently evaluated by the Natural Environment Research Council (NERC), assessing us and other organisations to ensure that our public funding is achieving maximum impact. I was proud and delighted that our results were excellent in all three areas of the assessment, with the NOC hailed as 'making a vital contribution to the UK's leading position in environmental science'.

This independent evaluation truly demonstrates not only our expertise in ocean science, but also that the NOC provides a great environment for scientists and innovators to thrive, delivering real impact to society.

Outstanding examples of this scientific excellence in the last year include our Exports programme, a global research project with teams from NASA and Woods Hole Oceanographic Institution. Using the RRS *Discovery* and underwater gliders, our scientists and engineers will help take vital ocean measurements to help understand the changing Atlantic Ocean and how it will evolve as a result of climate change and human exploitation. This is a great example of how three world leading organisations can collaborate to truly inform international policy and ocean literacy.

We have been very active in our influencing in the last year, albeit via online meetings and events. As well as the successful contribution to the G7 Decade Navigation Plan, the NOC has been playing a vital role in shaping UK co-ordination for the UN Ocean Decade, as well as supporting UK marine science collaboration.

We have started to build strong partnerships with industry and donors and would like to thank '10% for the Ocean' for their donation and support this year, and also Subsea7 who are working with us on a new research alliance. Both clearly demonstrate how our independence can enable us to build new relationships to expand our science and understanding of the ocean.

Thank you to our Board and every team at the NOC. Together we have continued to lead in ocean science and innovation, in spite of many challenges. Next year promises to be an exciting one for us, with COP26 having amplified our voice and accelerated global awareness of the ocean's role in managing our climate.

PROFESSOR ED HILL CBE
Chief Executive
15 December 2021

INDEPENDENT EVALUATION RESULTS

RESEARCH EXCELLENCE
99% of the work assessed was considered internationally significant. 79% were rated internationally excellent or world leading.

IMPACT EXCELLENCE
100% of the case studies were of international significance and 81% were excellent or world leading.

RESEARCH AND IMPACT ENVIRONMENT
99% for international recognition and 91% as excellent or world leading.

Members of the Marine Physics and Ocean Climate group with our overtopping monitoring system; WireWall

CHARITABLE PURPOSE AND OBJECTS

The NOC's charitable objects, which were developed to benefit the public and the world in which we live together, are as follows:

1. **The advancement of science**, in particular enhancing the scientific knowledge and understanding of oceanographic sciences, and the ocean and its interaction with the earth system, and facilitating the use and application of that knowledge and understanding, particularly by:

   a. Undertaking and causing to be undertaken research including through technology development, experimentation, analysis, long term ocean observation, monitoring, mapping, survey and modelling of a high international standard and disseminating the useful results of research.

   b. Providing access to scientific research and technology development facilities and infrastructure including research ships and other measurement platforms and systems to the ocean science community.

   c. Obtaining, managing, curating and providing access to digital data, samples and other specimens.

   d. Being the UK national focus for ocean science, exercising leadership for and promoting co-operation with the wider UK science community, and providing national and international visibility and expert representation for oceanographic sciences.

   e. Innovation or by encouraging and supporting innovation.

2. **The advancement of education in oceanographic sciences**, and the ocean and its interaction with the earth system and relationship with people, particularly by:

   a. Contributing to the education (particularly post graduate higher education), training and development of the next generation of scientists, engineers, technologists including the supervision of postgraduate research students.

   b. Supporting the building of marine research scientific and technical capacity in other countries around the world.

   c. Communicating with and engaging with the public in relation to ocean science and technology through seminars, talks, leaflets, papers and other means.

OUR BENEFICIARIES

We exist to make a difference, so our beneficiaries are at the forefront of all we do. They include:

- **The public all over the world** - inspiring, informing and educating.
- **Marine life and ecosystems** - protecting our world so it works in harmony.
- **Scientists, engineers and researchers** - nationally, internationally and in developing countries.
- **Young people and students** - encouraging study, research and careers in oceanography.
- **Government** - informing decision making through robust evidence.
- **Offshore operators** - ensuring those who use the ocean do so in a safe and sustainable way.
- **NOC teams** - making sure our people have a career that inspires and motivates them.

PUBLIC BENEFIT STATEMENT

OUR VISION

Our vision for the NOC is by 2025 to be seen as the world's most innovative oceanographic institution.

OUR MISSION

Our main mission is to make sense of changing seas, upon which future human prosperity and well-being depends. The way in which we intend to achieve our mission is by:

- Undertaking and enabling world-class science and technology development;
- Providing large research facilities and access to data and samples for the benefit of UK science; and
- Creating value and public benefit by supporting, with scientific evidence, the development of public policy, hazard assessment, ocean governance and regulation, and sustainable development.

Going forwards, we will better exploit the synergies across these different supporting pillars of our mission to drive novel and innovative approaches to our work, enabling us to do things that are distinctive and that few others could do.

PUBLIC BENEFIT STATEMENT

In setting the vision and mission for the NOC, the Trustees gave due consideration to the guidance on public benefit, as outlined by the Charity Commission of England and Wales and the Scottish Charity Regulator OSCR.

The NOC's key driver for selecting topics for research is always what will take ocean science forward for the furtherance of our charitable purpose (see page 5 to learn more), our touch stone in all endeavours is increasing knowledge to deliver public benefit.

To enable the organisation and individuals to exercise independent discretion in this decision making we have established an Activity Decision Tree. Its general principles are applied when deciding whether activity is routed through the National Oceanography Centre (NOC) or the trading subsidiary: National Oceanography Centre Innovations Limited (NOC Innovations Ltd). This includes examination of ethical considerations, reputational risks, organisation and scientific independence of the NOC, where the benefit is accrued and risk and mitigations thereof.

Where contract research is undertaken by the NOC we do so in line with the Commission's guidance on Research by Higher Education Institutions, and ensure it is funded at full economic cost, often by matching funding across the portfolio. The NOC retains scientific control of any IP licensed so that it can continue to advance science and technology for the benefit of the public.

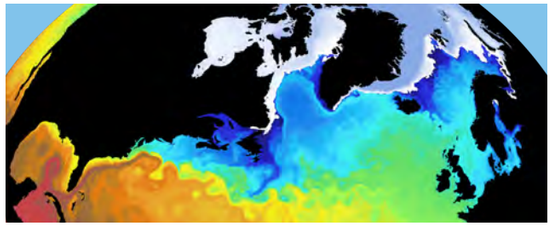
The NOC and our trading subsidiary, NOC Innovations, bring benefits in a number of ways, including through scientific research, marine technology, education, information and advice. Through our work, we aim to do five things:

OUR VALUES

- EXCELLENCE
- EMPOWERMENT
- INTEGRITY
- INNOVATIVE THINKING
- ENVIRONMENTAL RESPONSIBILITY
- WORKING IN PARTNERSHIP

1. **GROW MARINE-BASED ECONOMIES WHILST PROTECTING THE OCEAN'S FUTURE HEALTH.**

2. **PROTECT PEOPLE AND ECONOMIC INFRASTRUCTURE FROM MARINE-RELATED DISASTERS.**



3. **MAKE SENSE OF GLOBAL ENVIRONMENTAL CHANGES IN WHICH THE OCEAN IS DEEPLY IMPLICATED.**

4. **ADVOCATE FOR THE OCEAN BY EDUCATING AND ENGAGING HUMANKIND IN UNDERSTANDING ITS ROLE IN OUR LIVES.**

5. **ADDRESS ISSUES OF NATIONAL IMPORTANCE REQUIRING INTERDISCIPLINARY SCIENCE; A STRONG EMPHASIS IN GLOBAL INFLUENCE.**

OUR BOARD

JOHN HIRST CBE

BOARD OF TRUSTEES CHAIRMAN

John is a highly experienced business leader in both the private and public sectors serving at board level for over 20 years. His previous roles include CEO of the Met Office, where he was also the UK Permanent Representative to the World Meteorological Organisation. He is also chairman of BSI and Anglian Water.

DAVID GEE

AUDIT AND RISK COMMITTEE CHAIR

David is a strategically orientated senior business manager and finance professional with a focus on value creation with a proven track record of strategic definition and management.

SARAH KENNY OBE

REMUNERATION COMMITTEE CHAIR

Sarah is the Chief Executive Officer at the BMT Group, a leading international multi-disciplinary engineering, science and technology consultancy offering a broad range of services, particularly in the defence, energy, environment, shipping and ports and logistics sectors.

DANIEL HOOK

Daniel is a Naval Architect and Chartered Engineer with over 18 years' experience in the marine industry. Dan works as a Naval Architect and leader on the development of a wide range of specialist craft, services and organisations.

PROFESSOR SIR IAN BOYD FRS

Ian is a marine and polar scientist who was Chief Scientific Adviser to the UK Government on Food and the Environment. He is currently a Professor at the University of St Andrews and the Chairman of the UK Research Integrity Office.

DR SARAH MCMATH

Sarah is the Chief Executive Officer, of Market Operator Services Ltd (MOSL). MOSL allows 1.2 million businesses, public sector bodies, charity and not-for-profit organisations in England to choose who provides their water retail services.

DR RUTH BOUMPHREY

Ruth is Director of Research at Lloyd's Register Foundation, a global charity protecting life and property and supporting education, engineering-related research and public engagement. She is responsible for a large portfolio including grants and accelerated innovation activities.

NOC EXECUTIVE ATTENDEES

Professor Ed Hill CBE
Julie Pringle-Stewart
Professor Angela Hatton

OBSERVERS

Victoria McMyn
NERC

David Thomas
NOC Association

OUR STAKEHOLDERS

During the year, the NOC has continued developing its formal framework for engagement with stakeholders, led by the Executive Committee, with the Board being briefed on and involved with setting the strategy. The Board reviewed its interaction with stakeholders, and that of the NOC as a whole, as part of its annual Board Effectiveness review in September 2021, and is developing actions to embed and extend this further during the next financial year.

Scientists, engineers and researchers	Enabling scientists and researchers is one of our core goals, with activities including operating research ships; providing key data; as well as marine robotics facilities. **See Goal 3: Innovate and Goal 4: Enable for more detail.**
Marine research organisations and public authorities	We are the hub of many marine networks, providing us with a position of authority and influence, including through the NOC Association of Marine National Capability Beneficiaries; the Marine Facilities Advisory Board; and the Cruise Programme Review Group, which provide formal feedback to us from beneficiaries around major areas of our activities. Our work allows collaborative relationships with national and international marine institutions, as well as government. **See Goal 1: Advance for more detail.**
Public in the UK and worldwide	Despite the challenges of the last year, which limited in-person opportunities, our public engagement has successfully continued, including virtual events such as World Oceans Day. **See Goal 2: Share for more details.**
Young people and students	We continue to work closely with universities, including the Universities of Southampton and Liverpool, and collaborating through activities like the "Underwater Agents" day at the Winchester Science Centre, focusing on microplastics.
Employees	We continue to be driven by our values, engaging with our people; Trade Unions; and developing our Equality, Diversity and Inclusion approach. **See Goal 7: People and Culture for more details.**
Funders	We regularly engage with funders day to day through the delivery of projects, as well as through more formal interactions with Board Observers from UKRI-NERC and strategic meetings. **See Goal 5: Grow and Diversify for more details.**
Suppliers	Our Procurement team engage with suppliers from tender stage to delivery, building good relationships and high standards. **See Goal 6: Governance for more details.**

DELIVERING OUR STRATEGIC GOALS

The delivery of the our five-year strategy is structured around seven clear goals, each of which links directly to our Charitable Purpose and Objects. Together with the Board of Trustees, our Executive Committee are united in the delivery of these goals as well as living by our values every day.

GOAL 1
ADVANCE

Undertake internationally excellent research and technology development to advance the frontiers of knowledge about the ocean

GOAL 2
SHARE

Create public benefit from all of the National Oceanography Centre's capabilities

GOAL 3
INNOVATE

Successfully translate world-leading and innovative research and technology developments to achieve wider impact

GOAL 4
ENABLE

Provide world-class underpinning capabilities that enable the UK and global ocean scientific endeavour

GOAL 5
GROW AND DIVERSIFY

Responsibly grow and diversify revenue to sustain our mission with a critical mass of scientific and technical capability

GOAL 6
GOVERNANCE

Transform the way the National Oceanography Centre is governed and operated

GOAL 7
PEOPLE AND CULTURE

Invest and reinvest in the National Oceanography Centre and its people

NOC EXECUTIVE COMMITTEE

PROFESSOR ED HILL CBE
Chief Executive

JULIE PRINGLE-STEWART
Chief Operating Officer,
Chief Financial Officer

PROFESSOR ANGELA HATTON
Director of Data,
Science and Technology

LEIGH STOREY
Associate Director
for National Marine Facilities

NATALIE CAMPBELL
Associate Director for
Corporate Business Support

PROFESSOR DOUG CONNELLY
Associate Director
for Research

CAIT ALLEN
Associate Director
for Engagement

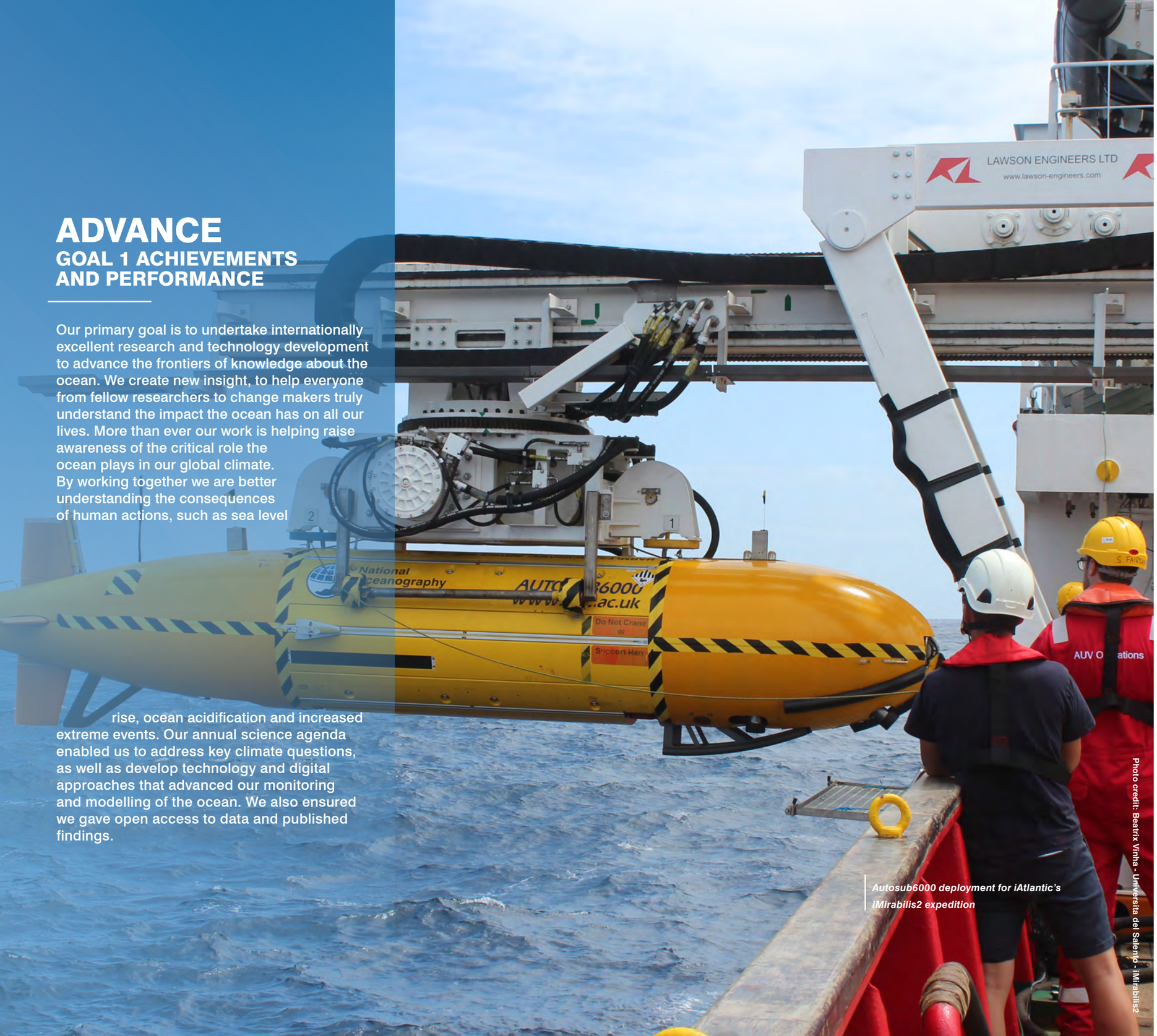
DR JOHN SIDDORN
Associate Director
for Digital Ocean

HUW GULLICK
Associate Director of National
Oceanography Centre Innovations

ADVANCE

GOAL 1 ACHIEVEMENTS AND PERFORMANCE

Our primary goal is to undertake internationally excellent research and technology development to advance the frontiers of knowledge about the ocean. We create new insight, to help everyone from fellow researchers to change makers truly understand the impact the ocean has on all our lives. More than ever our work is helping raise awareness of the critical role the ocean plays in our global climate. By working together we are better understanding the consequences of human actions, such as sea level rise, ocean acidification and increased extreme events. Our annual science agenda enabled us to address key climate questions, as well as develop technology and digital approaches that advanced our monitoring and modelling of the ocean. We also ensured we gave open access to data and published findings.



Autosub6000 deployment for iAtlantic's iMirabilis2 expedition

Photo credit: Beatrix Vinha - Universita del Salento - iMirabilis2

227 TOTAL RESEARCH PAPERS PRODUCED

170 GOLD OPEN ACCESS RESEARCH PAPERS

18 GREEN OPEN ACCESS RESEARCH PAPERS

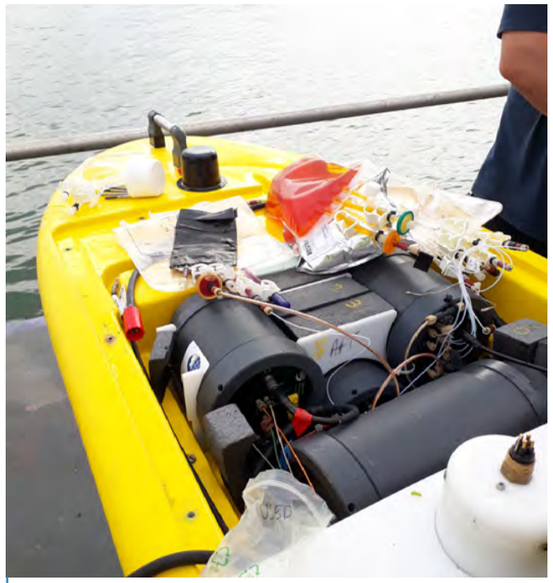
83% OF ALL OUR RESEARCH PAPERS ARE OPEN ACCESS

OCEAN HEALTH

A new fleet of advanced robotic floats is being built to provide data to understand the status of the ocean environment and its resources today, and for years to come. The £3.7 million UK Atlantic Sector Biogeochemical Argo Network (ASBAN-UK) aims to improve predictions of how ocean biology and biogeochemical cycles will respond to ongoing climate warming. As part of this, we will deploy 30 novel profiling floats in the Atlantic Ocean over the next three years as part of our UK Argo programme. Each float will be equipped with sensors to collect observations from the upper-ocean continuously for about five years. Researchers will be able to gain new insights into how the ocean and climate are changing, and for improving forecasts for planning, resource management, policy development and restoring the health of our ocean.

CHANGING THE TEXTBOOK VIEW OF OCEAN CIRCULATION

New evidence from our long term ocean arrays, the Overturning in the Subpolar North Atlantic Program and The Rapid Climate Change project, have rewritten the textbook view of how the Meridional Overturning Circulation (MOC) functions. The challenge for the research community now is to re-assess the way the MOC is simulated in ocean-models to increase confidence in forecasts of climate change. Looking to the future, we are using the highly detailed information about the physics of the MOC to provide the foundation for designing new cost-effective and low-carbon observation methods.



Ongoing sensor development in Autosub Long Range (ALR)

IMPROVING PREDICTIONS

The Arctic is changing at unprecedented rates and is warming twice as fast as the global average in recent years. Ocean simulations and satellite observations pioneered by our scientists have now shown the Transpolar Drift, a strong surface current in the Arctic Ocean, is more variable than was previously known. This could not only affect predictions on ocean temperature and carbon dioxide, but also has the potential to help improve the prediction of climate extremes worldwide.

SPECIES EYE SPY

A new species identification guide is the first of its kind to bring together the fields of scientific nomenclature and image-based analyses to improve biodiversity data collection. Developing these clear rules will improve the clarity, precision and comparability of biodiversity data, critical in deep-sea studies, where most of the animals are poorly known and species have not been described before. It allows for identifications to be more easily understood and shared, making them more useful to other researchers, environmental managers and policy makers.

SCIENCE IN SPACE

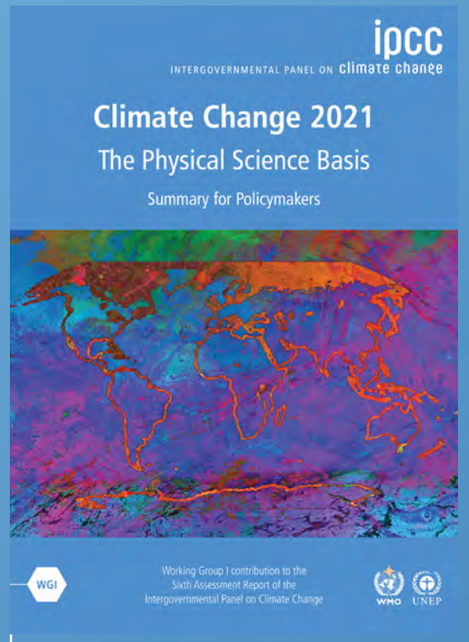
The Sentinel-6 satellite that will allow our scientists to measure sea level rise, one of the biggest threats posed by climate change, recently launched on a SpaceX rocket from Vandenberg, California. Thanks to funding from the UK Space Agency, experts across the UK's ocean and climate community will be at the forefront of analysing the most accurate data yet on sea levels and sea state, and how our ocean is changing in response to climate change.

Autosub6000 on the Launch and Recovery System (LARS)

AUTHORS OF CHANGE

The Intergovernmental Panel on Climate Change (IPCC) is a body of the United Nations responsible for advancing knowledge on human-induced climate change. Their latest Assessment Report, IPCC AR6, was the culmination of over 3 years work by authors spanning the globe, including the NOC's Professor Stephanie Henson and Dr Catia Domingues. The unequivocal conclusion, that human activities are the main driver of increases in atmospheric greenhouse gas concentrations since the pre-industrial period, builds on a legacy of independent interdisciplinary NOC research and engineering.

> "This report provides the scientific evidence of human-induced climate change, how it will impact all aspects of our ocean, atmosphere and land, and the implications for reaching the Paris Agreement target of limiting global warming to 1.5°C.
>
> The evidence suggests that the biological carbon pump is an important component of the ocean carbon cycle, but there is really large uncertainty around how it will respond to ongoing climate change and how that will feed back to atmospheric CO_2 levels. The observational and modelling work we're doing at the NOC will hopefully start to fill some of these knowledge gaps over the coming years."
>
> **PROFESSOR STEPHANIE HENSON**
> **IPCC AR6 CHAPTER 5 LEAD AUTHOR**



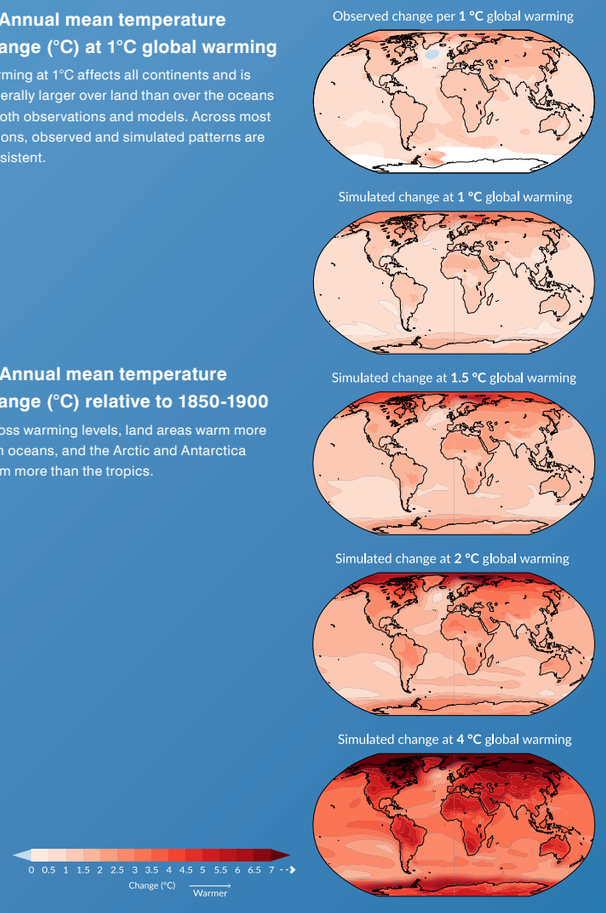
The IPCC Assessment Report 6

a) Annual mean temperature change (°C) at 1°C global warming

Warming at 1°C affects all continents and is generally larger over land than over the oceans in both observations and models. Across most regions, observed and simulated patterns are consistent.

b) Annual mean temperature change (°C) relative to 1850-1900

Across warming levels, land areas warm more than oceans, and the Arctic and Antarctica warm more than the tropics.



Example of the global climate projections in the IPCC AR6 (Figure SPM.5: Changes in annual mean surface temperature, precipitation, and soil moisture.)

At the core of the report is an ensemble of global climate projections to which the UK contributed the UK Earth Sea Model (UKESM1), a collaborative development between the NOC, Met Office and centres from the Natural Environment Research Council. In this partnership, we played a leading role in developing and supporting the marine biogeochemical component, and in spinning up and analysing the model. We also developed and supported the physical ocean component underpinning UKESM1 via the Joint Marine Modelling Programme.

In addition, the NOC's Permanent Service for Mean Sea Level (PSMSL) is the global data bank for long-term mean sea level data and was an integral component of the relative sea level change rates used in the IPCC AR6 projections of sea level change. The dataset contains 2,362 stations, 73,797 years of data, from 188 suppliers. In 2021, with valuable contributions from our citizen scientists (see 'Shore you'll love it'), we updated 633 stations with 1,095 years of data.

Everyone at the NOC has played a collaborative role in enabling delivery of these new data, models and insights, and are proud to have been a critical part of such a seminal report. It reinforces our united endeavour to make sense of the changing ocean, upon which future human prosperity and well-being depends.

SHARE
GOAL 2 ACHIEVEMENTS AND PERFORMANCE

We are incredibly proud our research makes a tangible difference to people nationally and internationally. This year we have helped people with weather forecasting, protecting coasts from hazards, and working out how to care for marine protected areas.

2021 saw the start of the United Nations Decade of Ocean Science for Sustainable Development; an international programme to generate 'the science we need for the ocean we want'. We're taking an active role to support this important global initiative because it so closely echoes our own passions and strategic endeavour. Throughout the year, and the ongoing decade, we will continue to champion the need for open partnership and to think differently and innovate together.

Showcasing our ocean modelling at the Winchester Science Centre

© Harvey Mills

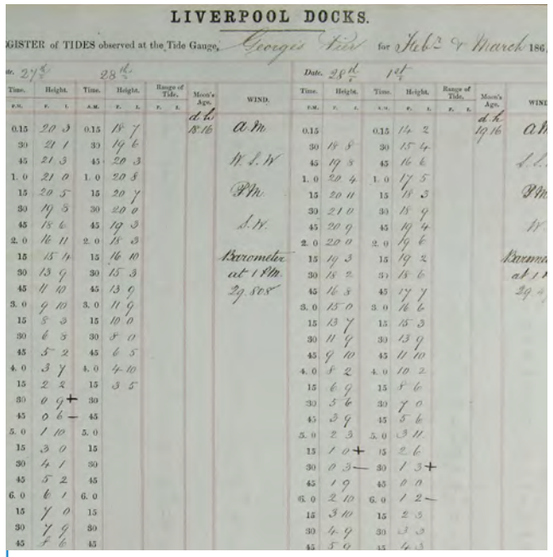
EARLY WARNING FOR OCEAN EVENTS

The ocean presents risks to humankind. Storm damage impacts lives and infrastructure; volcanoes and submarine landslides generate tsunami, that can have wide ranging extreme impacts. We are at the forefront of this field and are working nationally and internationally to understand these risks and provide early warning systems for sudden events such as tsunami and using novel sensor systems to enable better protection for coastal infrastructure. We were called upon as experts as part of the Natural Hazards Partnership to perform a risk assessment for the recent eruption in La Palma and the potential for tsunami generation impacting the UK.

We are working to understand the risks of storms along the coast

HAZARD ASSESSMENT

For the first time, thanks to modern marine survey acoustic equipment, we were able to study in detail the deposits of a volcanic island landslide-tsunami immediately after the incident. This research involved the 22 December 2018 landslide at Anak Krakatau, in Indonesia, that created the deadly 'silent' tsunami that affected Sumatra and Java. These results were used to inform future mitigation strategies with local authorities. Following the recent La Palma event, researchers have used the research and techniques to evaluate existing UK tsunami warning capability, seeking to improve tsunami risk assessment and identifying and addressing monitoring gaps.


LIVERPOOL DOCKS.

REGISTER of TIDES observed at the Tide Gauge, George's Pier for Feb.ry & March 186

An example of a historic tide gauge ledger being digitised line-by-line with the help of dedicated citizen scientists

KEEPING IN TOUCH

Virtual meetings and events saw greater and more diverse interactions than in previous years. Our public engagement evolved across new interactive platforms, and digital meetings and stakeholder events enabled us to remain present and influential internationally. We played a key role in the planning for the G7 Leaders Summit discussions on ocean issues, and the development of the G7 Future of the Seas and Oceans Initiative. By advising the UK Government, we were instrumental in the drafting and approval of the G7 Decade Navigation Plan. An increase in our media presence has also allowed us to raise awareness of ocean issues, improve ocean literacy, and encourage people the world over to advocate and care for the ocean.

SHORE YOU'LL LOVE IT

Over 3,500 citizen scientists contributed to our latest public project to help recover data from historic tide gauge ledgers and convert it into usable data by scientists. The critical dataset is used globally to study climate change and sea level rise by many organisations including ongoing assessments by the Intergovernmental Panel on Climate Change.

INTERNATIONAL INFLUENCE

We led the UK delegation to the 31st Assembly of the 150 Member State Intergovernmental Oceanographic Commission of UNESCO (IOC-UNESCO), held virtually for the first time in its history. The UK was re-elected to the Executive Council and co-sponsored a resolution that gives the green light in implementing the UN Decade of Ocean Science 2021-2030, including establishing the Decade Advisory Board. The NOC's Head of Marine Policy also participated in the IOC-UNESCO Group of Experts on Capacity Development and was re-elected as Co-Chair for a second term.

Showcasing our ocean modelling at the Winchester Science Centre

© Harvey Mills

WORLD OCEANS DAY 2021

On World Oceans Day, we provided a free digital Open Day of educational talks, hot topic discussions and virtual tours to replace the usual on-site event.

DRAMATICALLY INCREASED ATTENDANCE

2021

4074
TOTAL ON THE DAY

14,715
TOTAL LOGINS OVER 30 DAYS

2019

1878
TOTAL

+117%

+684%

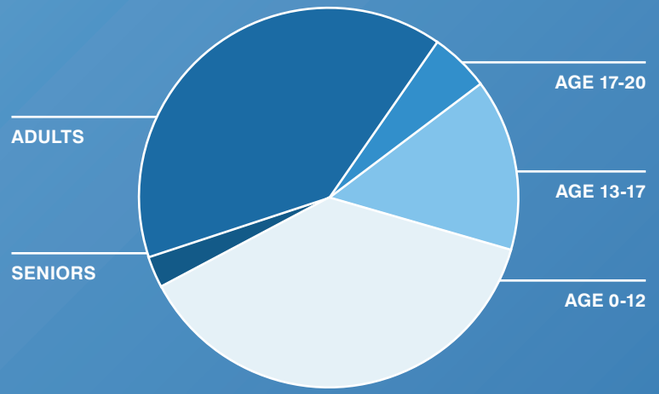
EXPANDING OUR REACH TO 41 COUNTRIES WORLDWIDE

40%
INTERNATIONAL VISITORS

60%
UK VISITORS

USA • MEXICO • GUATEMALA • COLOMBIA • VENEZUELA • BRAZIL • FALKLAND ISLANDS • SPAIN • PORTUGAL
IRELAND • GHANA • UK • FRANCE • BELGIUM • NETHERLANDS • NIGERIA • SWITZERLAND • GERMANY • NORWAY
MALTA • ITALY • POLAND • GREECE • SOUTH AFRICA • BULGARIA • EGYPT • TURKEY • KENYA • AZERBAIJAN • IRAN
PAKISTAN • INDIA • SRI LANKA • BANGLADESH • CHINA • MALAYSIA • SINGAPORE • BRUNEI • INDONESIA
PHILIPPINES • AUSTRALIA

INSPIRING THE NEXT GENERATION



3
INSPIRING FUTURES TALKS

2676
TOTAL ATTENDEES

47
SCHOOLS

14
COUNTRIES

PRESENTING OUR WORK TO A GLOBAL AUDIENCE

7
WEBINARS AND INTERVIEWS

SAFE CARBON STORAGE
OCEAN SCIENCE IN ACTION
OCEAN ROBOTS
INTERVIEW WITH OUR CHIEF SCIENTIST
OCEAN PLASTICS
BLUE CARBON
THE OCEAN FROM SPACE

462
ACTIVE PARTICIPANTS

A DIVERSE RANGE OF DOWNLOADABLE CONTENT

TOTAL DOWNLOADS OVER 30 DAYS

1200+	MONSTERS OF THE DEEP
300+	INSPIRING FUTURES
50+	MAKING AN IMPACT
300+	OCEAN SCIENCE IN ACTION
50+	NOC INNOVATIONS
250+	VIRTUAL RESEARCH SHIP TOUR
150+	EDUCATIONAL RESOURCES

INNOVATE
GOAL 3 ACHIEVEMENTS AND PERFORMANCE

For us, innovation is not only a strategic deliverable but an inspiring core value that continues to drive our culture. With this spirit we continue to pioneer. Through our innovative culture, we continue to pioneer technology and multi-disciplinary methods to advance continuous ocean observation and prediction, from the coasts to deep ocean.

We understand the link from innovation into industry is critical to furthering our understanding of the ocean. We value considering different approaches, finding different ways of doing things and seeking creative solutions in all that we do, from creating a Digital Ocean roadmap to reducing our carbon with cutting-edge sensors.

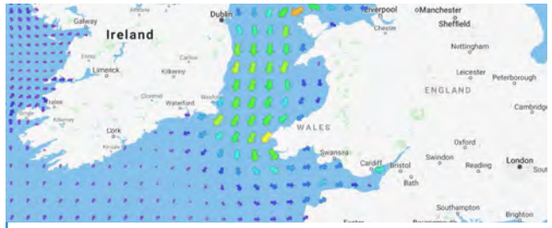
Working on Autosub6000 for iAtlantic's iMirabilis2 expedition

Photo credit: Murray Roberts - University of Edinburgh - iMirabilis2

MARINE INFORMATION PRODUCTS AND SERVICES

We develop, sell and support desktop software used for predicting tides and currents. In addition to building commercial grade software, we develop new high-resolution tidal models and supply information to a diverse range of commercial and public sector customers including the Environment Agency, Shell, local authorities and ports. Our software and information services are established and trusted in many sectors because of their reliability and accuracy. Despite the challenges faced this year our sales and support remained as strong and consistent as ever with final revenue reported at £225k.

Our latest customer research has informed a five year business development and technology roadmap that will see the evolution from our traditional desktop software to our new cloud-based products. Work is already underway on a new tool, with similar core functionality to our Windows software, but with the ability to offer additional layers of ocean data including surge forecasts, bathymetry and salinity. This year saw us build the application's front and back end, developing new Application Programming Interfaces to generate new information layers. In addition, we're working to completely rebuild our Windows desktop software to future proof it and add new innovative features to remain cutting edge and to add value.



POLPRED Offshore Tidal Software

DIGITAL OCEAN ECOSYSTEM

We are proud to demonstrate excellence and expertise across the full range of the digital ocean information value chain – from sensor development, ocean observing, management of marine data, to the development of information products. This digital ocean information value chain underpins our science and ensures we continue to deliver innovative and valuable insights about the marine environment.

The traditional approach to ocean observation collection in which data are collected, used to generate scientific output and then finally lodged for curation is, however, being challenged as both inefficient and limiting. The NOC-led, Net Zero Ocean Capability scoping project progressed a detailed set of recommendations on how to develop an integrated data ecosystem. This future data ecosystem will reduce barriers to the use of costly ocean observations, maximising their value. A roadmap charting the route to transforming our Digital Ocean capability, to support the data ecosystem and data science use of our observations, has been developed this year. It signposts the activities to be taken on in the coming years to build our digital capacity. The ambition is to move to having an integrated collection and management approach, where a data ecosystem with an end-to-end design of observing from collection to curation and use, is developed.

We have been working to make "data in" quicker and easier, and to make our data more findable and accessible with implementation of key aspects of the FAIR (Findable, Accessible, Interoperable, Reusable) principles. This is supporting integration of data activities, by our owned and operated British Oceanographic Data Centre (BODC), into our wider infrastructure. Interdepartmental collaboration on our Oceanids programme, to create near-real-time data systems, has developed our systems significantly towards our goal of a holistic "one-NOC" solution to data collection and delivery. Automation of data ingestion is increasingly being developed, reducing the manual submissions needed and developing the tools and processes to develop auto-ingestion methods more rapidly for future data types.

The Net Zero Oceanographic Capability (NZOC) project scoping six themes, one being Future Data Ecosystems

NATIONAL OCEANOGRAPHY CENTRE
ANNUAL REPORT & FINANCIAL STATEMENTS 2020/21

DIRECTORS' AND TRUSTEES' REPORT
INCORPORATING THE STRATEGIC REPORT

ROBOT SENSES

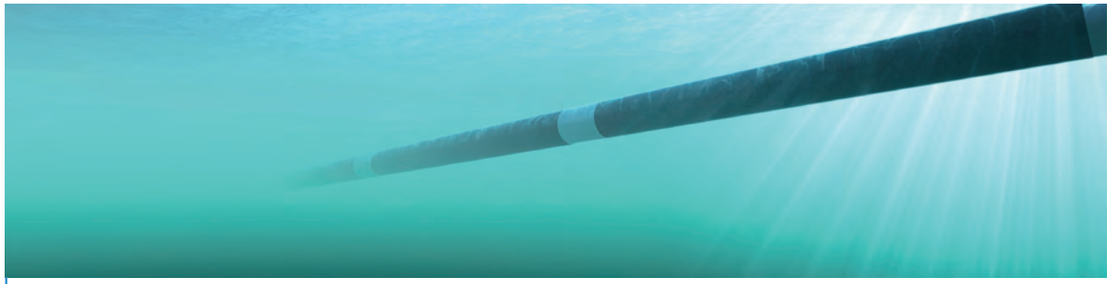
Soon to conclude its final year, our pioneering Oceanids programme supports the development of marine autonomous systems (both vehicles and sensors), working towards greater sampling density in space and time as well as the provision of a low emission oceanographic research infrastructure. Oceanids technologies have pushed the boundaries of marine autonomy, thereby enabling the UK to maintain its position as a global leader in sustainable, oceanographic science, delivering cost-effective public benefit and driving innovation for the growing blue economy.

During the lifetime of this programme, sensors were used for profiling to depths of 4800m in the region of the Porcupine Abyssal Plain; over 6 months of Silicate data were collected from a mooring in the Southern Ocean; a phosphate sensor was mounted on a Kongsberg Seaglider completing a 120km transect in the northern North Sea. Additional work, co-funded by the Climate Linked Atlantic Sector Science (CLASS) programme, saw the carbonate sensors measure seagrass ecosystem metabolism in the Mediterranean and study coral health in the Great Barrier Reef. Oceanids sensors were also used to study air-sea and benthic biogeochemical fluxes in the Weddell Sea (Antarctica), demonstrating their value for long-term measurements in this extreme environment.

The Carbonate Chemistry Autonomous Sensor System (CarCASS) project developed the first sensor suite of its kind, capable of autonomously measuring seawater carbonate chemistry from the surface to full ocean depth through lab-on-chip sensors for pH, Total alkalinity (TA), and dissolved inorganic carbon (DIC). After initial development in the EU-funded Strategies for Environmental Monitoring of Marine Carbon Capture and Storage (STEMM-CCS) project and now through Oceanids, CarCASS sensors will enable direct in situ characterisation and over determination of the marine carbonate system for the first time. CarCASS's technology can improve our understanding of the ocean's rapidly changing CO_2 system, monitor ocean acidification in areas of significant ecosystem and commercial importance such as coral reefs, shell fisheries and mariculture regions, and enable in situ monitoring of subsea carbon storage reservoirs.

The Autonomous vehicle Nutrient Sensors (AutoNutS) project improved and developed novel technologies, resulting in seven new-generation instruments for measuring oceanography's most frequently measured nutrients and micronutrients (nitrate, nitrite, phosphate, silicate, high and ultra-low concentration iron, ammonia). This suite of sensors will enable in situ measurements of biogeochemical and biological change resulting from advection, stratification or land use change. The data gathered using these sensors will be crucial to advancing our knowledge of how marine microbes and dependent ecosystems and fisheries function, with implications for productivity and the changing climate.

The NOC is equipped with the latest cutting edge technology



The failure of critical subsea infrastructure, such as renewable energy cables, costs the UK millions of pounds each year

SUSTAINABLE INNOVATION

A system to improve the efficiency of offshore renewable energy generation and help develop the Blue Economy was awarded funding from Innovate UK's Sustainable Innovation Fund. Our new Submarine High-fidelity Active-monitoring of Renewable energy Cables (SHARC) project will address failure management of critical subsea infrastructure, in this case submarine cables. Between 2014 and 2017, recorded cable failures across UK sites alone led to a cumulative loss of £227 million, highlighting the importance of innovations to improve cable failure-management strategies. Reducing these costs will make offshore renewables more competitive and accelerate their uptake, contributing to the UK Government's Clean Growth Strategy and enabling net-zero carbon emissions.

OCEAN PLASTICS CONSULTANCY

Our reputation in ocean plastics research is world-leading and during this year we engaged with international trade bodies interested in sustainability challenges associated with their sectors. Our expertise in this area has proved to be a valuable asset to those organisations and sectors looking to understand the ocean plastics problem in relation to their operations. This resulted in a significant consultancy contract to report and advise on ocean plastics for a particular sector, just one example of our targeted approach to engaging with industry and adding value and social benefit.

OPERATIONAL EXCELLENCE

In May 2021, the NOC's trading subsidiary NOC Innovations signed a memorandum of understanding (MoU) to create the National Centre for Operational Excellence in Marine Robotics, which will be dedicated to supporting the digital transformation required for the wider maritime sector. The MoU brings together the expertise of the NOC, the Royal Navy and Seabot XR as key players in Maritime Autonomous Surface Ships operations and autonomous sub-surface operational training, to create Europe's first training centre in this area. The requirements and facilities for marine robotics training are very different to those which exist in the maritime training sector in Europe and the UK today. To address this gap, a competence-based curriculum is being created specifically for autonomous and remote vessel surface and sub-surface operations. Together, we are delivering new standards of training using the innovative expertise and progressive, world-renowned facilities at the NOC.

The Saltwater Test Tank at the Marine Robotics Innovation Centre

NATIONAL OCEANOGRAPHY CENTRE
ANNUAL REPORT & FINANCIAL STATEMENTS 2020/21

OCEAN SCIENCE IN ACTION

Our Massive Open Online Course, named **Ocean Science in Action: Addressing Marine Ecosystems and Food Security in the Western Indian Ocean**, has introduced learners to innovative marine technologies and their applications used to tackle the challenges of the sustainable management of marine ecosystems.

3400+
TOTAL LEARNERS

53%

1800+
ACTIVE PARTICIPANTS

33%

600+
FULLY COMPLETE

140 COUNTRIES
WITH LEARNERS

THIRTY
VIDEO LECTURES

FIVE STAR
USER RATING

INTERNATIONAL EARLY CAREER
SCIENTIST MENTORING TEAM

ADDRESSING SIX OF THE UN SUSTAINABLE DEVELOPMENT GOALS

NO
POVERTY

DECENT WORK AND
ECONOMIC GROWTH

ZERO
HUNGER

LIFE BELOW
WATER

GENDER
EQUALITY

PARTNERSHIPS
FOR THE GOALS

CONTRIBUTING TO THE UN DECADE OF OCEAN SCIENCE PRIORITY AREAS

UNDERSTANDING OF OCEAN ECOSYSTEMS
AS THE BASIS FOR THEIR MANAGEMENT

EARTH SYSTEMS OBSERVATIONS & PREDICTIONS
SUPPORTED BY SOCIO-ECONOMIC SCIENCES

CAPACITY DEVELOPMENT, TECHNOLOGY
TRANSFER AND OCEAN LITERACY

3500+
INTERACTIVE COMMENTS

THREE
MARINE TECHNOLOGIES

FOUR CASE STUDIES
SET IN THE INDIAN OCEAN

ENABLE
GOAL 4 ACHIEVEMENTS AND PERFORMANCE

The ocean is a shared responsibility so we work in a coordinated way to enable and empower the global research community, because none of us can possibly observe and manage the ocean alone.

We are the proud home to the National Marine Equipment Pool (NMEP). British Oceanographic Data Centre (BODC), British Ocean Sediment Core Research Facility (BOSCORF) and world leading laboratories, workshops and testing facilities. On behalf of the Natural Environment Research Council (NERC) we operate two multidisciplinary Royal Research Ships (RRS). The RRS *Discovery* and RRS *James Cook* are built to carry out oceanographic research in the most extreme and remote oceanic environments on planet Earth.

Our vast size, unique infrastructure and passionate staff, have allowed us to enable complex, multi-disciplinary, multi-investigator research this year, including provision of innovative technology and instruments to meet research needs across all oceanographic disciplines.

RRS Discovery docked at the National Oceanography Centre, Southampton

VARIED USERS OF OCEAN DATA

Knowing who accesses marine data from the UK's data centres and what they do with those data is key to understanding their socio-economic value. Well managed and easily accessible data can benefit society well beyond the original purposes for which they were collected.

This year, MEDIN, a national network hosted by the NOC, collaborated with the Organisation for Economic Co-operation and Development (OECD) and the Global Ocean Observing System (GOOS) to better understand the value chains of marine data. We identified the different sectors of the UK economy currently benefiting from data made available from public data repositories. These include the academic, policy, commercial and non-governmental sectors as well as the general public. In addition to scientists, marine data have a diverse user-base, covering multiple industries of the UK's ocean economy, including some burgeoning ocean economies such as offshore wind and marine renewable energy. Fishing, tourism, offshore surveying, aquaculture and mining are other key industries using data from public repositories.

The project provides a better understanding of the pathways through which marine data are used and transformed into actionable information, creating systematised value chains for the first time. We show that the links between different types of marine data and different sectors of the economy are multiple and varied, spawning many complex value chains as a result. This work will lead to a more robust valuation of the socio-economic benefits generated by crucial public marine observing and data infrastructure systems.

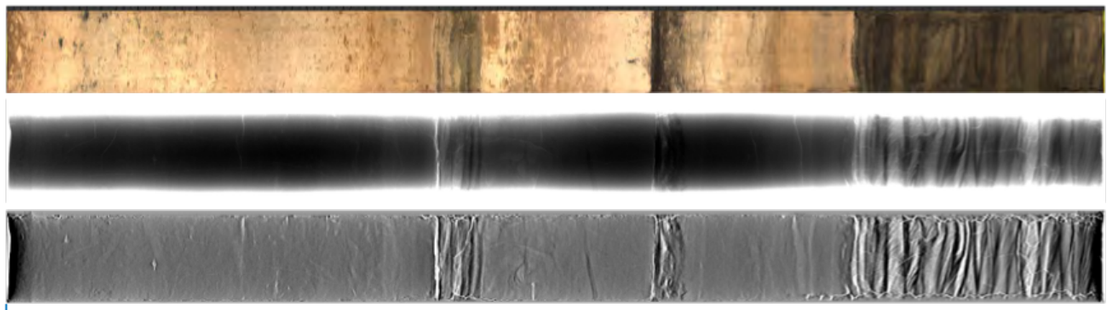
CORE UPGRADES

The British Ocean Sediment Core Research Facility (BOSCORF) is the UK national deep sea core repository, operated by the NOC to store marine sediment cores collected by NERC ships and NERC-funded researchers. BOSCORF plays a major role in training undergraduate and postgraduate students, in particular, PhD students and postdoctoral researchers. Most recently a joint project with the National Environmental Isotope Facility has started to provide online training using 3D scans to form part of the facility orientation package for new users.

The ScoutXcan is a multi-angle 2D X-ray radiography and pseudo-3D laminography system developed by Geotek. This system represents the latest advancement in X-ray scanning specifically developed for sediment and rock core analysis and significantly enhances the facility's offering of analytical capabilities to the UK environmental science community.

Following the installation of the ScoutXcan, the BOSCORF team have been working to integrate this new system into the facility's geological core analysis workflows. A Geological Samples Radiography Technician has been employed to support the acquisition of data for environmental science research including NERC-funded PhD student projects.

Previous capability: Linescan Image (top) and ITRAX Radiograph (bottom)



New capability: Linescan Image (top), ScoutXcan Radiograph (middle) and ScoutXcan Laminograph (bottom)

ENABLING OCEAN SCIENCE

1,641
new BODC users

100%
of cruise data, transferred to BODC, archived within one month of receipt

90%
of BODC datasets accessible via two clicks from MEDIN portal

63,961
new NERC Vocabulary Server (NVS) users

86,069
total NERC Vocabulary Server (NVS) users

2,206
data sets processed by BODC

59,787
bathymetry data sets downloaded

84,739
non-bathymetry data sets downloaded

265
data deposits received by BODC

12,661
delayed-mode (quality assured) Argo data sets provided

10,440
Argo data sets sent to the Met Office

78.5%
of near real-time profiles available in delayed mode

749
metres of sediment core analysed on BOSCORF's non-destructive core analysis and core imaging systems

3,832
individual subsamples were taken from 44 sediment cores at BOSCORF

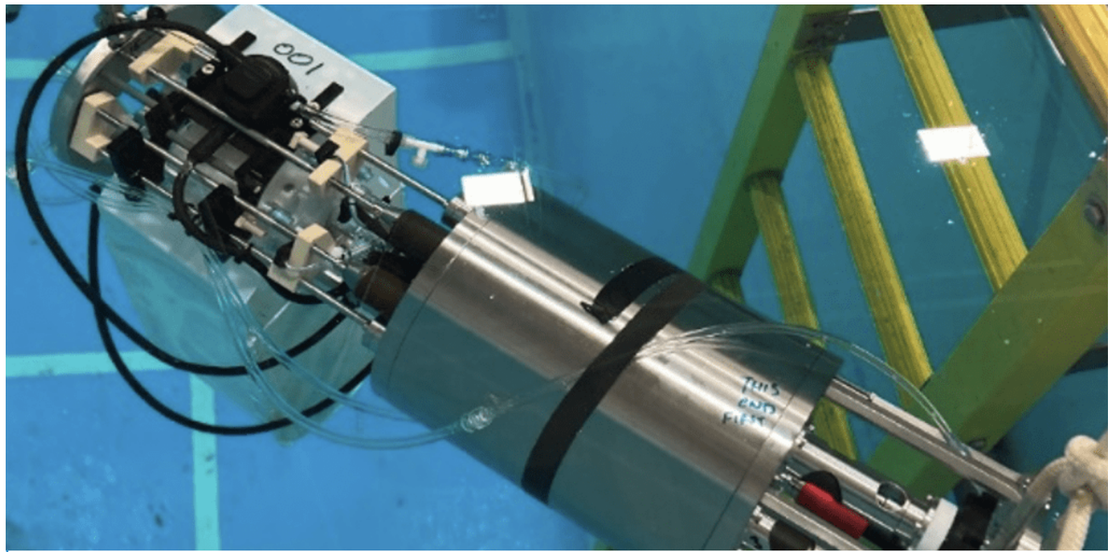
12,700
metres of sediment cores stored at BOSCORF

ACCESS TO ALL

The British Oceanographic Data Centre (BODC) is a national facility owned and operated by the NOC, responsible for the storage and distribution of data collected from the marine environment across a range of disciplines. Throughout the year we have continued to provide critical data services to NERC Projects and others, including: Argo, Seabed 2030, General Bathymetric Chart of the Oceans (GEBCO) and Geotraces project. We also lead the Marine Environment Data and Information Network (MEDIN) whose report concluded the benefit of their service is 8 times the cost. This activity is being seen in the ocean community as an example of best-practice in cost-benefit analysis for ocean observing related activities.

LOOKING FOR LIFE

Novel technology development now enables us to autonomously gather high quality data on the biological communities in the ocean through. In situ analysis of DNA allows an unprecedented insight into the role biology plays in the whole marine ecosystem from a climate perspective; from providing food resource for large parts of the population to the economic value of the ocean. This year we have for the first time ever demonstrated that we can collect and analyse the community structure in one of the deepest parts of the ocean.



Development of the Robotic Cartridge Sampling Instrument (RoCSI)

NATIONAL OCEANOGRAPHY CENTRE
ANNUAL REPORT & FINANCIAL STATEMENTS 2020/21

DIRECTORS' AND TRUSTEES' REPORT
INCORPORATING THE STRATEGIC REPORT

MARINE FACILITY PLANNING

After the disruption caused to the 2019/20 research programme by the pandemic, we delivered a full year programme that included 11 research expeditions based on the RRS *Discovery* and RRS *James Cook*; one major trials period on the RRS *James Cook* to test upgraded seismic equipment; annual refits on both vessels and support to a European research expedition operating from the Spanish research vessel the Sarmiento de Gamboa. Autonomous platforms undertook missions in support of the Ellet Array programme (in partnership with the Scottish Association for Marine Science) and the Combining Autonomous observations and Models for Predicting and Understanding Shelf seas (CAMPUS) programme (in partnership with the Plymouth Marine Laboratory). New underwater autonomous vehicles (developed under the innovative Oceanids programme) were trialled in Loch Ness prior to operation in Antarctica, the Atlantic and the Pacific in the next 12 months.

NET ZERO BY 2040

The requirement to observe the ocean has never been greater as we seek to understand its role in climate change, however, we cannot ignore the CO_2 emissions that result from making those observations as we manage and operate two Royal Research Ships. On behalf of the Natural Environment Research Council (NERC) and the UK Research & Innovation (UKRI), we led a scoping review to consider how their research infrastructure might transition to net zero by the UKRI target of 2040. By working in partnership with experts from across the UK research community, we engaged with a wide range of stakeholders across all sectors. Together we considered how scientists engage with new technology, its regulation and the impact upon the wider shipping sector, the development of novel fuels and their use in future research ships, a massively expanded autonomous fleet and the oceanographic data ecosystem that supports it. Our findings have been submitted to NERC and will be published in 2021/22.

Autosub Long Range being prepared for under-ice capability testing in Loch Ness

LONG-TERM LARGE-SCALE

RRS *Discovery* supported a research expedition to the Porcupine Abyssal Plain, a muddy area of seabed approximately half the size of Europe, led by the NOC's Dr Susan Hartman. Our researchers have been visiting this area for 36 years providing a unique insight into the way the ocean is changing due to rising levels of CO_2. In addition, RRS *Discovery* also explored the Whittard Canyon, a major submarine canyon system within a geological feature that hosts England's only deep-sea marine protected area.

INVESTIGATING ICEBERGS

These exciting images show a robotic underwater glider being launched from the RRS *James Cook*, marking the start of a four-month mission to investigate the massive A-68a iceberg in the South Atlantic; one of the largest icebergs ever identified by scientists.

After satellite images revealed this giant iceberg (which had calved off from Antarctica's Larsen C ice shelf in 2017) moving out into the southern ocean, our technicians rushed to prepare ocean gliders capable of monitoring the impact it would have on the area around South Georgia. These gliders were subsequently launched from the RRS *James Cook* having been flown to the Falkland Island to rendezvous with the ship. Thanks to development of our new web application, the 1.5m gliders were able to collect measurements of seawater salinity, temperature and chlorophyll close to the iceberg all whilst being remotely piloted from the Southampton office.

Glider being deployed using the new in water release trolley for the first time

Preparing the glider for deployment to take measurements under the icebergs

"We have developed a world leading web application to pilot and manage the data from long range ocean robots. It uses satellite data to assist in piloting the gliders which can be deployed from anywhere in the world. We use a variety of different glider types that can be fitted with a bespoke combination of sensors as required by different science campaigns.

Having an advanced piloting tool makes these bespoke operations a lot easier. For this campaign we adapted the software to show the A-68a position from satellite data. This allows us to get the glider close to the ice and to take the necessary measurements. These measurements will allow the science team to better understand the impact of the A-68a on the local environment and marine life."

MAATEN FURLONG
HEAD OF MARINE AUTONOMOUS & ROBOTICS SYSTEMS

Historically this data collection could only be carried out using sensors attached to large specialised research ships. Not only is this method costly, but data could only be captured for a limited period of time and carbon emissions would be high. The development and deployment of autonomous technology is part of the solution to reducing the carbon footprint associated with current marine research. The UK is at the forefront of this research and we are playing a leading role.

GROW AND DIVERSIFY

GOAL 5 ACHIEVEMENTS AND PERFORMANCE

Throughout COVID-19 our staff kept working, progressing our goals and living our values. We have focused on what we can do, not what we can't do. This has included growing and diversifying our reputation, portfolio and income. We've sown the seeds of some truly transformative strategies internally and externally, across our data systems, fundraising and NOC Innovations; the wholly owned commercial trading subsidiary of the NOC.

CTD deployment to the RAPID array from the RRS Discovery

GOOD LOOKING DATA

The NERC Vocabulary Server (NVS), managed by our British Oceanographic Data Centre, gives access to standardised and hierarchically-organized vocabularies to data creators and data managers around the world. This year the NVS was launched with a new look, providing a better (human and machine) user experience. The NVS had six million downloads this year, two million more than last year, proving an invaluable resource to its growing global community of users.

FUNDRAISING

We have built a small fundraising team to develop new philanthropic income streams to fund our science and innovation projects. Although this team is still in its infancy, funding was secured for an ongoing bursary to support students in their science ambitions, as well as a donation towards some of our underwater observation systems. The focus now is on building funding models for larger philanthropic campaigns, corporate giving, and the functionality for individuals to support our endeavour.

TRADING SUBSIDIARY

This has been a year of opposites for NOC Innovations, our trading subsidiary. Whilst the challenges of the pandemic have continued to severely affect our events revenue, we have seen increasing engagement and demand for our science and engineering based commercial propositions, particularly around training, consultancy and engineering services.

GOVERNANCE
GOAL 6 ACHIEVEMENTS AND PERFORMANCE

During the previous financial year, we have successfully transitioned from a public sector institution to an independent charity, setting a Five-Year Strategy, and setting up governance, audit and assurance frameworks to meet its legal and regulatory obligations.

Building on the success and experience of our first independent year, we have further developed our structures and implemented several pivotal change projects.

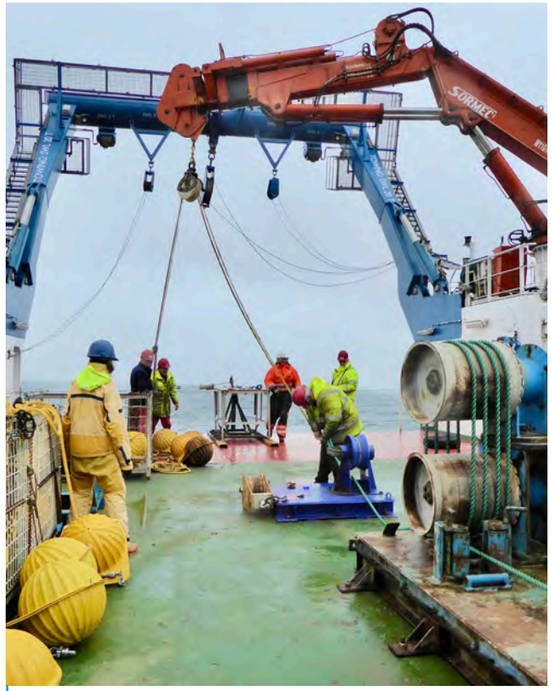
Setting the direction for the future of the NOC

GOVERNANCE FRAMEWORK
We apply the Charity Governance Code to all of our governance, seeking to follow best practice in our management and operations. To support this, we undertook a comprehensive mapping exercise, which will be used to further enhance our governance structures as we develop.

DELEGATIONS OF AUTHORITY
A review was undertaken of the delegation of responsibility from the Board of Trustees to the Executive Committee, and then through the organisation, to enable effective governance in day-to-day operations. A revised statement of delegations was approved by the Board, and further work to embed this across the organisation will take place during the next financial year.

CYBER SECURITY AND DATA PROTECTION
From its inception as an independent charity in November 2019, we have sought to apply the requirements of *Cyber Essentials* in the design and delivery of our IT and cyber security provision. We are in the process of re-applying for *Cyber Essentials* accreditation following changes to the accreditation system during 2021 and this is expected to be completed during the next financial year. We continue to provide training and oversight in respect of personal data protection. There were no reportable data protection breaches during the financial year.

RISK MANAGEMENT
We have continued the roll-out of the NOC's Risk Framework, carrying out workshops for all areas across our organisation and improving understanding and recording of risk and increasing the maturity of our risk approach.



The crew of the RRS Discovery returning to the Porcupine Abyssal Plain Sustained Observatory (PAP-SO)

ETHICS, SAFEGUARDING AND CONFLICTS OF INTEREST

Following the updates to the Charity Governance Code in December 2020 in relation to Ethics, and the changing landscape on sites as a result of COVID-19, we carried out a review of our Ethics and Safeguarding policies, and these are now being updated. An Ethical Decision-Making Procedure has been created for staff to support us in delivering our charitable purposes and complying with the governance framework. We are continuing to enhance our research integrity approach, and this will be a further theme in the coming financial year. There were no externally reportable conflicts of interest and no significant governance or control issues during the financial year.

VENDOR MANAGEMENT

A new Head of Procurement was appointed during the year. We have introduced new approaches to managing vendors, including a new scorecard and key performance indicators, and have completed a full suite of documentation and guides for staff to ensure compliance, knowledge and understanding. A supplier handbook has been drafted and will be implemented during the next financial year, while we continue to consolidate vendor relationships and further improve due diligence processes.

RECRUITMENT

Throughout the year there has been a significant level of recruitment across the Corporate Business Support team, with new appointments bringing a broad range of new skills and experience to support our governance initiatives. The Finance, Legal & Governance and Procurement teams are now at full strength and delivering effective results.

ENTERPRISE RESOURCE PLANNING

In our first year of independence, we implemented an Enterprise Resource Planning (ERP) system under its initial operating capability. We have spent this year developing and improving the system to better support NOC operations by carrying out detailed testing, establishing effective ways of working and using appropriate tools to manage resource for the organisation.

Working with the Met Office to deploy Ocean Data Acquisition System (ODAS) buoy at the PAP-SO

PEOPLE AND CULTURE

GOAL 7 ACHIEVEMENTS AND PERFORMANCE

The events of 2020/21 were and are unprecedented, and the pandemic is not yet over. The global health crisis had an enormous impact on every aspect of our lives. In a volatile and at times, unpredictable environment, our staff continued to meet challenges with passion, diligence and an unwavering belief in our long term vision. Every day there were stories of our people bringing our Charitable purpose and shared values fully to life.

We take this opportunity to thank our staff, in particular our workers, for their outstanding commitment and hard work. We thank our communities in which we operate for their support alongside our customers and beneficiaries, for their continued confidence in us.

World leading engineering in our Southampton workshops

CONTINUING THROUGH COVID-19

During the pandemic, we created opportunities for staff to stay connected through new and evolved online channels and focussed our attention on well-being and support campaigns. Significant work has been done to support those members of staff and their families, who have found the last year particularly tough. We have seen that days lost through sickness absence as a result of mental health fall to 0.65% from 0.79% in 2019/20 and to 0.14% in 2020/21. This commitment was led from the top of the organisation but made possible through the efforts of staff collaboration, line managers, staff forum representatives and Trade Unions.

We have continued to invest where reasonable in technology and equipment, policy adjustments and strong internal communications. A new online 'Welcome Back' pack was launched to familiarise new staff, and those returning from a considerable time of remote working, with the organisation and the culture.

INVESTING IN OUR PEOPLE

As part of our work to retain our valued *Investors in People* accreditation, we undertook an engagement survey to allow every colleague the opportunity to feed back honestly and anonymously on how the organisation is doing against a whole range of people topics. The survey scores were more positive in most areas compared with the 2018 survey findings. Lots of staff believe their work has purpose and are proud to associate with our world class reputation. 80% of staff agreed or strongly agreed that the NOC was a great place to work. This survey assessment is just one part of the official process and our accreditation is due in the next financial year 2021/22.

EQUALITY, DIVERSITY AND INCLUSION

Our Equality, Diversity and Inclusion (ED&I) survey further demonstrates high levels of staff satisfaction when it comes to telling others that the NOC is a great place to work. This is important as the link between staff engagement levels and the productivity, performance and impact of an organisation has never been more important. We believe this has been proved during this particularly challenging year.

We also carried out a comprehensive equal pay gap report and published this with our Board, Executive and Trade Unions and provided key highlights on our external website.

COLLABORATIVE CULTURE

We have a flourishing Staff Focus Group and have built significant relationships with our recognised Trade Unions through our work on the Joint Negotiating & Consultation Committee (JNCC), which is well supported and facilitated by our Executive and People & Skills team.

LEADING LEARNING

Our learning and development programme continue to offer a wide range of opportunities. Our online training has been particularly important during the current pandemic, which has seen over 400 visits to our learning management system, supporting our 632 staff. The newly launched leadership training programme, World Class Managers, has already been delivered across half the organisational departments.

OUR YEAR IN NUMBERS

15%
of our staff have formal flexible working patterns, many more flex their hours informally

74
people hired during the pandemic in permanent and fixed term roles across all disciplines

87%
of responding staff said they were treated with respect by their line manager in the recent ED&I survey

89%
of staff said that they are trusted to do their job at the NOC

72
virtual training courses attended by 197 members of staff

34%
of our workforce and 30% of our management are women, including 3 of 7 Board members

433
men are in our workforce, with 117 in management roles

31%
of our Executive Committee and their direct reports are women

56
live wellness webinars held

1000+
participants in live wellness webinars, with 405 live and circa 600 times on demand

CELEBRATING OUR SUCCESS

BIRTHDAY HONOURS

Our Chief Executive, Professor Ed Hill, was awarded a CBE in the Queen's Birthday Honours 2020 list in recognition of his services to ocean and environmental sciences. Ed is a world-leading authority on ocean science and is dedicated to raising awareness of ocean issues and advancing the science and technology to understand our seas. Having been part of the Natural Environment Research Council (NERC) for over 20 years, he led us into becoming an independent charity, using our new freedom and scientific expertise to drive forward greater innovation and influence.

WORLD LEADING EXPERTISE

NOC scientists Professor Stephanie Henson and Dr Catia Domingues were lead authors on the Intergovernmental Panel on Climate Change Sixth Assessment Report (IPCC AR6), which assesses the physical science basis of climate change, providing the latest assessment of scientific knowledge about the warming of the planet, the impacts on climate systems and projections for future warming.

COMMUNITY RECOGNITION

At the 2021 European Geosciences Union Assembly, NOC scientists, Dr Marilena Oltmanns and Professor Richard Lampitt, received awards for their ground-breaking work. Richard was presented with the 'Fridtjof Nansen Medal', established by the Ocean Sciences division of the conference, which is awarded for distinguished research in oceanography. Marilena received the 'Ocean Sciences Division Outstanding Early Career Scientists Award' which recognises scientific achievement made by an Early Career Scientist in the division related to ocean sciences.

Members of the RAPID team

OUTSTANDING OBSERVATIONS

The Oceanography Society (TOS) has named several collaborative multidisciplinary teams who make critical Atlantic climate observations as the inaugural recipients of the TOS Ocean Observing Team Award. This award recognises innovation and excellence in sustained ocean observing for scientific and practical applications. The citation on the team's certificate recognises them for transforming our understanding of Atlantic circulation with a breakthrough in observing system design providing continuous, cost-effective measurements.

The Selection Committee noted that this international team, which we are part of, has sustained a core array of moorings across the Atlantic at 26ºN for more than 16 years, monitoring changes in the strength of the Atlantic Meridional Overturning Circulation.

STRUCTURE, GOVERNANCE AND MANAGEMENT

OVERVIEW

The NOC was incorporated on 2 July 2018 as a charitable company limited by guarantee, and commenced trading on 1 November 2019. It is registered as a charity with the Charity Commission in England & Wales and the Scottish Charity Regulator, and is governed by articles of association in accordance with the Companies Act 2006.

ORGANISATIONAL STRUCTURE AND DECISION-MAKING POLICIES

BOARD OF TRUSTEES

The NOC's Board of Trustees, who are also Non-Executive Directors for the purposes of company law, have overall responsibility for ensuring that the NOC is carrying out its purpose for the public benefit; the continued financial viability of the organisation; and for ensuring that we meet all of our legal and compliance requirements. The Trustees oversee the day to day delivery of the NOC's strategy which is led by the Executive Committee. Trustee Directors are appointed by the existing Trustee Directors for a term of three years, and are eligible for re-appointment for a further three years.

The Board of Trustees during the financial year was as follows:

CHAIR

John Hirst CBE

DIRECTORS

Dr Ruth Boumphrey

Professor Sir Ian Boyd

David Gee

Daniel Hook

Sarah Kenny OBE

Dr Sarah McMath

The first three-year term of three Trustee Directors (David Gee, John Hirst CBE, and Sarah Kenny OBE) expired on 2 July 2021, following which all three were reappointed for a further three-year term. The three-year terms of the remaining four Trustee Directors (Dr Ruth Boumphrey, Professor Sir Ian Boyd, Daniel Hook, and Dr Sarah McMath) will expire during the next financial year.

DELEGATION OF DECISION MAKING - EXECUTIVE COMMITTEE

The Board delegates the day-to-day leadership and operations of the NOC to its Executive Committee, which is made up of the Chief Executive Officer; the Chief Operating Officer/ Chief Financial Officer; the Director, Data, Science and Technology; and six Associate Directors. The Executive Committee meets monthly, reviewing progress against the NOC's goals; the KPIs set by the Board; and both current and longer-term priorities for the organisation. The Board has approved a formal Statement of Delegations for the Executive Committee to allow them to conduct the business of the organisation effectively. During the financial year, the Board approved an updated Executive Roles and Responsibilities framework, setting out accountabilities for each member of the Executive Committee.

BOARD MEETINGS

The NOC Board meets formally at least quarterly. Standing items covered in Board meetings include strategy, performance, risk and compliance. The Executive reports quarterly to the Board on progress against KPIs set at the start of the financial year, which cover each of the NOC's goals. Their activities included providing oversight and guidance during the COVID-19 pandemic; reviewing and approving the NOC's Identity and Vision strategy and the

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DIRECTORS' AND TRUSTEES' REPORT
INCORPORATING THE STRATEGIC REPORT

The NOC Executive team and the Board of Trustees returning to in person meetings

setting up of the Equality, Diversity and Inclusion task force as well as the NOC's Science and Technology Advisory Committee.

DELEGATION OF DECISION-MAKING - COMMITTEES

The Board of Trustees has established four formal committees: the Audit & Risk Committee; the Nominations Committee; the Remuneration Committee; and the Scientific and Technology Advisory Committee. Their role is to undertake detailed scrutiny of specific subject matters and to make recommendations on those topics. The committees are Chaired by a Trustee Director appointed by the Board and report directly to the Board. The constitution of the committees and their respective Terms of Reference are reviewed at least annually.

AUDIT AND RISK COMMITTEE

The Audit and Risk Committee is chaired by David Gee, and meets quarterly. On behalf of the Board it has overall responsibility for financial reporting and controls; risk management; audit; and whistle-blowing. The committee acts independently from the NOC Executive, to ensure that the interests of the charity are properly protected in terms of monitoring the integrity of the company financial statements.

REMUNERATION COMMITTEE

The Remuneration Committee is chaired by Sarah Kenny OBE, and meets quarterly. It provides a forum for developing policy on trustee and executive remuneration; to recommend levels of remuneration for Directors; and to review the remuneration policy and reward package for all employees. It oversees any major changes in the employee benefits structure throughout the organisation. This year the committee has provided guidance and advice to the organisation on the 2020 Pay Award; the continued development of the NOC's Total Reward Strategy; and the World Class People Management Development Programme.

NOMINATION COMMITTEE

The Nomination Committee has the role of leading the process for Board appointments and making recommendations to the Board, and meets at least twice a year. It is chaired by John Hirst CBE and is responsible for long-term succession planning for future trustees, seeking to ensure there is a formal, rigorous and transparent procedure for the appointment of new directors to the Board and reviewing and evaluating the balance of skills, knowledge, experience and diversity on the board. The Board analyses the capabilities of the existing Trustee Directors using a skills matrix, which is reviewed annually.

SCIENCE AND TECHNOLOGY ADVISORY COMMITTEE

The Science and Technology Advisory Committee was constituted during the financial year and is chaired by Professor Sir Ian Boyd. Its remit is to provide independent advice to support the Board of Trustees and the Chief Scientist in their responsibilities for development and delivery of the research strategy for the NOC and on sustaining the quality and impact of the NOC's research performance, its research environment and the health of its intellectual capital base. The committee is chaired by a member of the NOC Board, and has a membership of no more than 10 people with expertise covering the breadth of the NOC's main areas of scientific research and technology development. Members are drawn from outside the NOC, taking due consideration of diversity, and bringing stakeholder and international perspectives commensurate with the NOC's role as one of a relatively small number of large-scale oceanographic institutions in the world.

TRUSTEES' INDEMNITIES

Under the NOC's governing documents, directors and former directors are entitled to an indemnity against liability incurred by them to a third party in the proper performance of their duties as a director or officer of the NOC. The governing document also gives the NOC powers to provide indemnity insurance for the Trustees in respect of liability arising from breach of trust or duty, negligence, subject to the conditions of s.189 of the Charities Act 2011 (which excludes from such insurance any criminal and regulatory fines and penalties). The NOC maintains such insurance for the Trustees, with an annual cap on liability. The premium and related costs in respect of this policy were £66k.

PAY POLICY FOR SENIOR STAFF

During the year one Trustee received remuneration as disclosed under note 7 to the financial statements. Details of Trustees' expenses incurred in the course of their duties and reimbursed are disclosed under note 7.

During the financial year, the Board approved an Executive Pay & Performance Policy, designed to support the principal objective of enabling the NOC to attract, motivate and retain the people it needs to maximise the value of the organisation and to ensure that remuneration is transparent, fair and reflective of the current and future success of the NOC and its staff against its 5-year strategy and plan. The Remuneration Committee has responsibility for developing, implementing and reviewing the remuneration, taking into account market value; performance; capabilities, values and leadership behaviours, and using up to date and relevant comparative salary information. The Chair of the Remuneration Committee recommends the remuneration package of the Chief Executive Officer to the Chair of the Board, who in turn reports to the Board.

INDUCTION AND TRAINING OF TRUSTEES

As part of our on-boarding process, new Trustees receive an induction to introduce them to our work, which includes introduction to each member of the Executive team, presentations, tours and meeting various colleagues to learn about the different functions of the NOC. The NOC also provides a trustee handbook with guidance on both the NOC itself, and on charity governance requirements. Trustees are encouraged to attend relevant training events, and to identify any specific training requirements throughout the year.

REVIEW OF BOARD PERFORMANCE

A review of Board Effectiveness was undertaken in October 2020. The review was carried out internally and included a backward-looking review with input from both Trustees and Observers, and a forward-looking plan, with actions noted to develop throughout the year. A second annual review was carried out in September 2021. The results were used to inform the Board's areas of focus during the coming financial year. In line with the Charity Governance Code, the next annual review, which will cover the NOC's third financial year since the start of operations, will be carried out by an external provider.

SUBSIDIARY GOVERNANCE AND RELATED PARTIES

The NOC's wholly owned subsidiary, National Oceanography Centre Innovations Limited ('NOC Innovations'), was established in 2019 as a private limited company. Its role is to undertake more applied and commercial work, to facilitate knowledge exchange and encourage innovation. It has covenanted to donate to the NOC all profits earned which it may legally donate and to re-claim gift aid on its profits to the NOC. The NOC Innovations Board is chaired by David Gee, and its other directors are members of the Executive Committee. The NOC Innovations Board meets quarterly. Its Associate Director, Huw Gullick, provides regular updates to the NOC Board of Trustees on the activities and financial reporting of NOC Innovations.

The NOC is eligible to bid for funding from UKRI, including the Natural Environment Research Council (NERC). The NOC manages the National Capability funding on behalf of NERC working in partnership with marine centres throughout the UK.

MEMBERS OF THE NOC AND LIABILITY

The Members of the Charity are the Trustee Directors. They guarantee to contribute an amount not exceeding £1 to the assets of the Charity in the event of winding up.

DISCLOSURE OF INFORMATION TO AUDITOR

Each of the persons who are Trustees at the time when this Trustees' Report is approved has confirmed that:

- so far as that Trustee is aware, there is no relevant audit information of which the charitable company's auditor is unaware; and
- that Trustee has taken all the steps that ought to have been taken as a Trustee in order to be aware of any relevant audit information and to establish that the charitable company's auditor is aware of that information.

REFERENCE AND ADMINISTRATIVE DETAILS

COMPANY REGISTERED NUMBER
11444362

CHARITY REGISTERED NUMBERS
1185265 and SC049896

REGISTERED OFFICE
National Oceanography Centre
European Way
Southampton
SO14 3ZH

INDEPENDENT AUDITOR
BDO LLP
Arcadia House
Maritime Walk
Ocean Village
Southampton
SO14 3TL

LEGAL ADVISORS
Eversheds Sutherland
Bridgewater Place
Water Lane
Leeds
LS11 5DR

BANK
NatWest
3 Hampshire Corporate Park
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Chandlers Ford
SO53 3RY

FINANCIAL/TAX ADVICE
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3 Rivergate
Temple Quay
Bristol
BS1 6GD

CHAIRMAN
John Hirst CBE

DIRECTORS AND TRUSTEES
Professor Sir Ian L Boyd
Dr Ruth Boumphrey
Sarah Kenny OBE
Dr Sarah McMath
David Gee
Daniel Hook

SENIOR MANAGEMENT TEAM
Professor Ed Hill CBE
Chief Executive

Julie Pringle-Stewart
Chief Operating Officer,
Chief Financial Officer,
Company Secretary

Professor Angela Hatton
Director of Data, Science and
Technology, Chief Scientist

Leigh Storey
Associate Director
for National Marine Facilities

Dr John Siddorn
Associate Director
for Digital Ocean

Natalie Campbell
Associate Director
for Corporate Business Support

Professor Doug Connelly
Associate Director
for Research

Cait Allen
Associate Director
for Engagement

Huw Gullick
Associate Director
for National Oceanography
Centre: Innovations Ltd

Danielle Rossiter
Head of Finance

Matt Eades
Head of People and Skills

The crew of the RRS Discovery preparing a buoy for deployment at the PAP-SO

SECTION 172 STATEMENT

The NOC Board of Trustees have acted in the way they consider to be in good faith, would be most likely to promote the success of the company for the benefit of its members as a whole, and in doing so have regard to the matters set out in s172(1)(a-f) of the Companies Act 2006, in the decisions taken during the year.

The Board of Trustees are briefed on their legal duties as part of their induction and are able to seek further advice from the Company Secretary, Head of Legal & Governance or access external independent advice if required.

STRATEGY AND CONSIDERATION OF THE CONSEQUENCE OF LONG-TERM DECISIONS

The NOC's main mission is making sense of changing seas, on which future human prosperity and well-being depend. Our vision for the NOC is by 2025 to be seen as the world's most innovative oceanographic institution. 2020-2021 has been the first year of delivery of our five-year strategy "Defining our Future" which aims to preserve the very best of what we do and grow our work – exploring new depths; creating the most innovative technologies; being the most exciting place to learn and work.

Throughout the year, decisions and considerations at Board meetings are consistently linked to how the NOC meet their strategic objectives and how the NOC can build and develop further to the environment around and in turn, contribute further to achieving public benefit. Decisions are underpinned by a detailed business plan, with budgets built from funded projects and forecasts across the following 5 years, based on experience of research funding; pipeline research areas; and market research on future areas of growth. The Board also considers the longer-term prospects and funding landscape for the NOC, taking into account expected changes in technology and skills required and types of research and data analysis to be undertaken in the next 10-15 years, and conscious of the NOC's aim to diversify income over the longer term.

The NOC are leading Net Zero Oceanographic Capability (NZOC), £250k scoping project, funded by NERC, to inform planning for the future low carbon oceanographic research capability in line with UKRI's objectives of becoming a net zero organisation by 2040

OUR PEOPLE

The Board considers that developing and maintaining good employee engagement, and cementing the NOC's reputation as an employer of choice, are fundamental to the delivery of the NOC Strategy. Further detail on the comprehensive initiatives undertaken by the NOC during the year and overseen by the Board is in Goal 7: People and Culture. This has included detailed work on the NOC's Equality, Diversity and Inclusion strategy; a survey carried out for the NOC by the Employers' Network for Equality & Inclusion; and a further Investors in People survey; progress with acquiring Athena Swan Bronze status; and continued engagement via All Staff meetings and communications. There has been positive engagement with Trade Unions in the setting of pay during the year. The Board has approved the constitution of an ED&I task force in the coming year to raise the profile of the existing approach to ED&I within the NOC, and to drive forward the strategy, led by employees with the support of the Board.

COMMUNITY AND THE ENVIRONMENT

As a registered charity with public benefit at the heart of the organisation, the NOC's aim is to make a positive contribution to society by advancing ocean science and education, supported by continuing substantial public research investment. In the previous financial year, the Board approved the NOC's Sustainability and Social Responsibility (SSR) approach and strategy for 2020-2025.

As the national centre and a world leader in marine science, the NOC's aim is to lead by example. During 2020-2021 a Sustainability and Social Responsibility Committee has met regularly within the organisation, agreeing the content of the NOC's SSR Statement to review the plans for and implementation of its three-year delivery plan, centred around the pillars of People; Operations; Community; Environment; and Research. In its delivery of this plan, the NOC is aiming to work to the principles of ISO 26000 Social Responsibility. The Board reviews SSR as part of its regular programme.

HIGH STANDARDS AND BUSINESS CONDUCT

The NOC's values of Excellence, Innovative thinking, Empowerment, Environmental responsibility; Integrity; and Working in partnership underpin the way in which the Trustee Directors take decisions and set standards for the way in which the organisation operates.

Through the delivery of our strategy, the NOC's intention is to promote our reputation, reflecting responsible behaviour and maintaining high standards of business conduct. The Board reviews the NOC's Ethics & Research integrity frameworks annually. During the financial year, the Board has had oversight of the operation of the NOC's Ethics Committee, the remit of which is to review new business proposals against the NOC's charitable purposes and objectives, and has also approved an Ethical Positioning statement for the NOC, providing further guidance for the organisation. Research integrity is a vital element of the NOC's success, and a full evaluation and audit of the NOC research environment was undertaken by UK Research & Innovation (UKRI) during the year, which resulted in a positive report. The NOC continues to be committed to following the Seven Principles of Public Life, which outline the ethical standards to which those working in the public sector are expected to adhere and which complement the NOC's own values.

MEMBERS

The Trustee Directors are also the Members of the NOC. The Directors, in consultation with the Executives, take decisions jointly, in accordance with company law, and regularly review any conflicts of interest they may have in their other capacities or wider activities.

STREAMLINED ENERGY AND CARBON REPORTING (SECR)

EXCELLENT ENVIRONMENTAL AWARENESS AND BEST PRACTICE THROUGHOUT ALL OUR ACTIVITIES

We are committed to the prevention of pollution and the protection of the environment. We will demonstrate continuous improvement of our environmental management and performance through regular setting and reviewing of objectives and targets. During 2020-21 we have:

- Successfully retained our ISO 14001 accreditation for Environmental Management.
- Committed to operating our vessels to a Ship Energy Efficiency Management Plan, in line with IMO guidelines.
- Reduced resource use - Greenhouse Gas emissions, waste production and transport (mileage) were all reduced during Quarter 3 and Quarter 4.
- Promoted the benefits of wildlife conservation and enhancement of biodiversity on site and in partnership with The Woodland Trust provided staff with tree saplings.
- Those joining the ship, both Scientists and Crew, are now issued with their own insulated drinking cup and water bottle. These items are all made of recycled plastic and can be taken away on leaving the ship at the end of an expedition as both a souvenir and for continued onward use.
- LED floodlights have been fitted on external decks of both RRS *Discovery* and RRS *James Cook*.

Environmental Responsibility is one of the NOC's six core Values, and 'Excellent environmental awareness and best practice' is built into our Sustainability and Social Responsibility strategy. To ensure our energy and carbon impact aligned with our beliefs and ambition we undertook the following initiatives to bring down our Greenhouse Gas emissions, waste production and transport (mileage) throughout 2020-21: The total CO_2e, based on figures in Table 1, was 11,988.62 tonnes, at an intensity ratio of 0.19 ($tCO_2e/m2$) and 221.87 ($kgCO_2e/m2$).

The NOC's annual quantity of emissions in tonnes of carbon dioxide equivalent from activities for which the company is responsible involving the combustion of gas was 1,064.68 tonnes CO_2e and for the consumption of fuel for transport was 8,342.30 tonnes CO_2e. In addition, the annual quantity of emissions in tCO_2e from the purchase of electricity by the company for its own use was 1,083.48 tonnes CO_2e.

The annual quantity of energy consumed from activities for which the company is responsible, for the combustion of gas was 5,812,860 kWh and for the consumption of fuel for the purposes of transport in vehicle fuel was 19,340 litres diesel (fleet vehicles), 0.9 tonnes LPG, and ship fuel used was 2,136.5 m3 and 1,166.2 tonnes.

The annual quantity of energy consumed resulting from the purchase of electricity by the company for its own use was 5,102,800 kWh.

The following methodologies were used to calculate the information disclosed for both emissions and energy data:

Energy data has been collected through our metering system (Stark), and converted into CO_2e using UK Government GHG Conversion Factors for company reporting. Ship fuel data is reported by ship Captains and converted to CO_2e using Carbon conversion factors for Marine Gas Oil. Transport data was compiled by collecting mileage data from or car hire provider and our staff claims for fuel expenses. This was converted to CO_2e using the assumptions of: medium sized car, unknown fuel type, Fuel cost 136p/l, 0.0595 l/1km, and the UK Government GHG Conversion Factors for company reporting.

The NOC is on a 100% green energy tariff, reducing the carbon impact of our purchased electricity

GREENHOUSE GAS EMISSIONS

Emissions have increased across the board compared with last year, with a few exceptions. This is owing to the increased occupancy following COVID-19 restrictions easing and staff returning to site and ship working.

We are on a 100% green tariff, reducing the carbon impact of our purchased electricity. Our vessels use Low Sulphur Fuel with a maximum sulphur content of 0.1% at all times.

WASTE

Waste production was slightly increased during Quarter 3 and Quarter 4 owing to the gradual staff return to both sites. The Liverpool site has sent zero waste to landfill in 2020-21.

TRANSPORT

The use of hire cars and the National Oceanography owned fleet across the whole year is reduced compared to the previous year as there haven't been any business as usual months owing to COVID-19. Travel between the two sites, as well as to conferences and meetings is therefore significantly reduced compared to the previous year. 8,100.82 litres of fuel (unknown type) were used for business travel in hired and personal vehicles, equating to 23.92 tonnes CO_2e emissions.

Mileage data is unavailable for this report. As such, reasonable assumptions have been made on the mileage data based on information from the BEIS fuel cost data.

The use of air and rail transport was reduced in comparison to previous years owing to COVID-19. Travel for research and conferences has continued to be restricted throughout the year, resulting in a 96% decrease in rail and air transport emissions in comparison to last year: 43.5 tonnes CO_2e in 2020-21 compared to 994 tonnes CO_2e in 2019-20.

TABLE 1

Scope / emission / energy use	Reporting Year 2019-20 Southampton	Liverpool	Total	Reporting Year 2020-21 Southampton	Liverpool	Total
Energy Consumption used to calculate emissions (mWh)	4,953.00	375.00	**5,328.00**	4759.43	343.37	**5,102.80**
Emissions from purchased electricity (Scope 2, location-based) (tCO_2e)	1,373.00	104.00	**1,477.00**	1010.57	72.91	**1,083.48**
Gas Consumption used to calculate emissions (mWh)	5,603.00	-	**5,603.00**	5812.86	-	**5,812.86**
Emissions from combustion of gas (scope 1) (tCO_2e)	1,030.00	-	**1,030.00**	1064.68	-	**1,064.68**
Heat purchased for own use (CHP/District heating) (mWh)	-	119.50	**119.50**	-	149.47	**149.47**
Emissions from heat purchased for own use (Scope 2)	-	22.60	**22.60**	-	25.52	**25.52**
(CHP/District heating) (tCO_2e)	-	-	**816.50**	-	-	**2,136.50**
Fuel used for transport purposes- Ships (m^3)	-	-	**-**			**1,166.20**
Fuel used for transport purposes- Ships (tonnes)	-	-	**2,266.11**	-	-	**9,719.76**
Emissions from fuel used for transport purposes- Ships (scope 1) (tCO_2e)	-	-	**14,500.00**	-	-	**19,340.00**
Fuel used for transport purposes- Fleet vehicles (L)		-	**39.56**	-	-	**39.56**
Gas used for transport purposes- Fleet vehicles (tonnes)	-	-	**0.90**	-	-	**0.9**
Emissions from fuel for used transport purposes- Fleet Vehicles (scope 1) (tCO_2e)	-	-	**39.56**	-	-	**51.23**
Fuel used for business transport- Rental Cars (L)	-	-	**7,880.51**	-	-	**6,782.48**
Emissions from fuel used for business transport- Rental cars (Scope 3) tCO_2e	-	-	**26.37**	-	-	**20.03**
Fuel used for business transport- Employee owned vehicles (L)	-	-	**159.41**	-	-	**1,318.34**
Emissions from fuel used for business transport- Employee owned vehicles (Scope 3) (tCO_2e)	-	-	**0.53**	-	-	**3.89**
Total CO_2e based on above figures (tonnes)	**-**	**-**	**4,888.56**			**11,988.62**
Floor space (m^2)	51,234.80	2,800.00	**54,034.80**	51,234.80	2,800.00	**54,034.80**
Intensity ratio (tCO_2e/m^2)	-	-	**0.09**	-	-	**0.19**
Intensity ration ($kgCO_2e/m^2$)	-	-	**90.47**	-	-	**221.87**

TABLE 2

Scope / emission / energy use	Reporting Year 2019-20 Southampton	Liverpool	Total	Reporting Year 2020-21 Southampton	Liverpool	Total
Incinerated waste (tonnes)	26.98	-	**26.98**	23.48	0.47	**23.95**
Incinerated waste emissions (tCO_2e)	0.58	-	**0.58**	0.50	0.01	**0.51**
Landfill (tonnes)	7.08	0.42	**7.50**	10.20	-	**10.20**
Landfill waste emissions (tCO_2e)	3.24	0.19	**3.43**	4.76	-	**4.76**
Food Waste (tonnes)	2.37	-	**2.37**	0.93	-	**0.93**
Anaerobic digestion emissions (tCO_2e)	0.02	-	**0.02**	0.01	-	**0.01**
Recycled (tonnes)	42.30	1.21	**43.51**	43.05	1.20	**44.25**
Recycled waste emissions (tCO_2e)	0.90	0.03	**0.93**	0.92	0.03	**0.95**
Total Emissions from disposal of waste generated in operations for which the company does not own or control (Scope 3) / tCO_2e	4.74	0.22	**4.96**	6.19	0.04	**6.23**

TABLE 3

	Reporting Year 2019-20	Reporting Year 2020-21
Domestic Air emissions (tCO_2e)	32.08	9.60
Short-Haul air emissions (tCO_2e)	105.04	12.182
Long-Haul air emissions (tCO_2e)	490.02	15.895
International air emissions (tCO_2e)	353.78	4.286
Domestic rail emissions (tCO_2e)	12.97	1.58
International rail emissions (tCO_2e)	0.1	0.005
Total CO_2e based on above figures	**993.99**	**43.548**

RISK MANAGEMENT STATEMENT

Achieving the goals and objectives of the NOC would be impossible without taking and managing risk within an acceptable appetite. Risk management is therefore fundamental to the day-to-day operation of the NOC at all levels of the organisation.

Our Risk Management Framework is embedding and increasing in maturity to provide management with the ability to improve our state of preparedness and reactivity; increase resilience to change and facilitate a reduction in business threats and uncertainty. It also supports management in the maximisation of opportunities by better facilitating informed decision making whilst also providing assurance that the company is operating within its risk appetite.

The Executive play a critical role in identifying and managing risk throughout the organisation, acting as the escalation route for programme, project and operational risks to the Board of Trustees and the Audit and Risk Committee, and the Executive and Board are aided by a Risk Management function providing oversight, advice, challenge and guidance for the management of risk and support for reporting, the development of policies and procedures, regulatory compliance and training.

In setting and monitoring the risk appetite of the organisation, the Board of Trustees and the Risk and Audit Committee provide essential and valued external challenge and advice through the robust assessment of the company's emerging and principal risks. Notably, these committees have provided challenge and support to management on the key risks impacting the company over the past 12 months. Principal amongst these risks have been:

- ensuring management have considered and addressed supply chain challenges in a post Brexit, post Pandemic environment;
- providing oversight to management for a significant number of COVID-19 decisions for safeguards to ensure the safety of our staff as the country has gradually unlocked and staff have returned to the NOC facilities;
- ongoing management of the escalating threat of cyber-attack through the implementation of an evolving landscape of available safeguards and recommended best practice whilst also maintaining our ability to provide the widest possible access to the scientific data we manage and to support the many and diverse communities who access our IT estate;
- the need to remain competitive and to continue to retain and attract the skills and expertise required to ensure our capabilities remain at the forefront of outstanding scientific excellence; and
- the NOC's goal to increase the diversity of its sources of funding against an uncertain landscape for funding from our traditional and largest sources in a post Pandemic and post Brexit business and public sector environment.

The NOC will continue to evolve its Risk Management Framework over the coming months in support of continued improvement in risk insight, accountability and the future evolution of the company.

RRS Discovery in the Atlantic ocean maintaining the RAPID moorings

FINANCIAL REVIEW

RESULTS FOR THE YEAR

The NOC was incorporated on 2 July 2018. There was no activity in the first period of account to 30 September 2019 and dormant company accounts were prepared. On 1 November 2019 the NOC commenced its activities with a one-off capital grant of £24,646k which was received to fund the transfer of moveable assets from UKRI-NERC to the NOC.

The results for the year ended 30 September 2021 are contained in this report. The net income for the year to 30 September 2021 amounted to £381k (2020: £23,353k). In 2020, of the income reported, £17,541k related to the residual depreciated capital grant for the initial transfer of assets. This income is part of the restricted reserve from which future year's depreciation of these assets will be met.

PRINCIPAL FUNDING SOURCES

Income was derived principally from UKRI-NERC funding for research, the operation of research infrastructure, data management and services and facilities of £50.5m. A further £12.5m of other grant income was derived from competitively won grants.

RESERVES POLICY

The NOC is an independent charity and has developed a Reserves Policy. The NOC will use the TRAC (Transparent Approach to Costing) FEC (Full Economic Cost) as the framework for pricing all contracts and projects and so ensuring it monitors its sustainability. Under TRAC there is the Margin for Sustainability and Investment (MSI) that is built into the FEC recovery that will contribute to the unrestricted reserves annually and then become the overall investment pot and provide ongoing risk cover. It is in the interests of the charity and the beneficiaries of the NOC to continue to invest in new capability and further the aims of the charity in terms of its advance of science. However, it is also necessary to hold an appropriate amount in the reserve against operational risk likely to materialise over any 12-month year.

It is intended that a £2,000k unrestricted sustainability reserve is held for working capital and this is grown by £6m over the next 5 years to cover the operational risk.

INVESTMENT POLICY

The investment policy ensures that unrestricted reserves earmarked for investment opportunities are agreed, prioritised and approved in line with the NOC strategy and business plan. As well as ensuring the delivery of the associated benefits and enhanced capability, whether this is financial or qualitative or both.

The finance system and reporting must be robust enough to ensure funds are appropriately recognised as revenue as project expenditure is incurred, and are fully identifiable within the NOC unrestricted reserve, as it is built up over time. TRAC requires that the NOC does not hold too much in the sustainability reserve and encourages continual investment using the amount over the sustainability margin. It is in the interests of the charity and the beneficiaries of the NOC to continue to invest in new capability and further the aims of the charity in terms of its advance of science object.

A business case will be put in place for each investment so that the Board can consider investment for the purposes of making a return as well as investing in the strategic aims of the NOC. Investments will be kept under regular review.

The Board decided that the first investments as per the above policy would not be made until after the first year of trading.

TRADING SUBSIDIARY

The NOC's trading subsidiary, National Oceanography Centre Innovations Limited, was incorporated on 9 October 2019 and is a wholly-owned subsidiary of the NOC. In the year to 30 September 2021 the subsidiary reported a loss for the financial year of £65k (2020: £28.7k)

There is an Operating Agreement in place between the charity and the trading subsidiary to ensure there is a structured and governed relationship. This includes detailed clauses which ensure the protection of licensed IP for the charity.

The trading subsidiary undertakes four significant areas of activity; product sales (marine data products), Events (Commercial activity only), Intellectual Property licensing (agreements) and Marine Robotic Innovation Centre – membership and renewal.

The Chair of NOC Innovations reports to the NOC Board of Trustees. The Board of Trustees review the progress of the subsidiary, ensuring that the strategic objectives of the subsidiary are not in conflict with its own and that the financial return is satisfactory. Two members of the NOC Board of Trustees are members of the trading subsidiary board.

FUNDRAISING POLICY

The NOC seeks to ensure all fundraising activity is conducted with due regard to the guidance of the Charity's Commission and the Fundraising Regulator. The NOC has undertaken limited fundraising activity during FY21. Going forward, the NOC's approach to fundraising will be to seek support from charitable foundations, trusts and corporations through their foundations. In addition, there will be the opportunity for the public to donate via regular or one-off giving or supporting fundraising events.

PLANS FOR FUTURE PERIODS

Our Five-Year Strategy, and its seven interdisciplinary strategic goals, will enable us to maintain commitment and delivery of our Charitable Objectives. Detailed in the Trustees' Report (incorporating the Strategic Report) are the activities we'll be focusing on between 2020-25, as part of our Five-Year Strategy, and our funding framework will diversify to support this.

GOING CONCERN AND THE IMPACT OF COVID-19

The key assumption in assessing going concern is that the NOC's key funders (UKRI and EU) will continue to pay as per their schedules, particularly in light of the COVID-19 pandemic. UKRI have continued to fund the NOC and reduced their delivery expectations during the COVID-19 pandemic enabling full capability to be maintained throughout. Some COVID-19 funding has been received to enable the NOC to continue to deliver where delivery capability was impacted.

The NOC has put together a 5-year business plan which brings together the National Capability funding from NERC-UKRI with signed research projects and those in the pipeline. For the year 21/22 the full current cost base of the NOC has been trimmed back to achieve some savings and so is covered by funded projects with some resource available to deliver new projects that are in the pipeline or in early stages of bid development at present; some recruitment is likely to be needed in the coming year when current fixed term appointments end. The NOC is deploying detailed resource planning to inform recruitment. As the forecast goes out to 22/23 and beyond there is more capacity to take on new funded projects, at this time the plan starts to forecast increased income from fundraising and NOC Innovations activity. Once this takes more shape, recruitment will be planned around the skills needed to deliver new areas of activity. Taking into consideration, signed Awards for National Capability infrastructure and science facilities and services spanning the next 3-5 years, current indications of recommissioning for National Capability Science, previous success rates in research grant rounds with sustained bid submission and forecast of future income based on marketing analysis the indications are that the NOC can continue to cover its cost base over the coming 5-year period.

In conclusion there are no material uncertainties to cast doubt on the NOC's ability to continue as a going concern.

AUDITOR

The auditor, BDO LLP, has indicated their willingness to continue in office. The designated Trustees will propose a motion reappointing the auditor at a meeting of the Trustees.

Approved by order of the members of the board of Trustees and signed on their behalf by

JOHN HIRST CBE
Chair of Board of Trustees
15 December 2021

STATEMENT OF TRUSTEES' RESPONSIBILITIES

The Trustees (who are also the directors of the Charity for the purposes of company law) are responsible for preparing the Trustees' Report including the Strategic Report and the financial statements in accordance with applicable law and United Kingdom Accounting Standards (United Kingdom Generally Accepted Accounting Practice).

Company law requires the Trustees to prepare financial statements for each financial period. Under company law the Trustees must not approve the financial statements unless they are satisfied that they give a true and fair view of the state of affairs of the Group and the Charity and of the incoming resources and application of resources, including the income and expenditure of the Group for that period. In preparing these financial statements, the Trustees are required to:

- select suitable accounting policies and then apply them consistently;
- observe the methods and principles in the Charities SORP (FRS102);
- make judgements and accounting estimates that are reasonable and prudent;
- state whether applicable UK Accounting Standards have been followed, subject to any material departures disclosed and explained in the financial statements; and
- prepare the financial statements on the going concern basis unless it is inappropriate to presume that the Group will continue in business.

The Trustees are responsible for keeping adequate accounting records that are sufficient to show and explain the Charity's transactions and disclose with reasonable accuracy at any time the financial position of the Charity and enable them to ensure that the financial statements comply with the Companies Act 2006. They are also responsible for safeguarding the assets of the Group and the Charity and hence for taking reasonable steps for the prevention and detection of fraud and other irregularities.

Financial statements are published on the Charity's website in accordance with legislation in the United Kingdom governing preparation and dissemination of financial statements, which may vary from legislation in other jurisdictions. The maintenance and integrity of the Charity's website is the responsibility of the trustees. The Trustees' responsibility also extends to the ongoing integrity of the financial statements contained therein.

Approved by order of the members of the board of Trustees and signed on their behalf by:

JOHN HIRST CBE
Chair of Board of Trustees
15 December 2021

INDEPENDENT AUDITOR'S REPORT

OPINION

In our opinion, the financial statements:

- give a true and fair view of the state of the Group's and of the Parent Charitable Company's affairs as at 30 September 2021 and of the Group's incoming resources and application of resources for the year then ended;
- have been properly prepared in accordance with United Kingdom Generally Accepted Accounting Practice; and
- have been prepared in accordance with the requirements of the Companies Act 2006, the Charities and Trustee Investment (Scotland) Act and regulations 6 and 8 of the Charities Accounts (Scotland) Regulations 2006, as amended in 2010.

We have audited the financial statements of National Oceanography Centre ("the Parent Charitable Company") and its subsidiaries ("the Group") for the year ended 30 September 2021, which comprise the consolidated statement of financial activities, the consolidated balance sheet, the charity balance sheet, the consolidated statement of cash flows and notes to the financial statements, including a summary of significant accounting policies. The financial reporting framework that has been applied in their preparation is applicable law and United Kingdom Accounting Standards, including Financial Reporting Standard 102, the Financial Reporting Standard applicable in the UK and Republic of Ireland (United Kingdom Generally Accepted Accounting Practice).

BASIS FOR OPINION

We conducted our audit in accordance with International Standards on Auditing (UK) (ISAs (UK)) and applicable law. Our responsibilities under those standards are further described in the Auditor's responsibilities for the audit of the financial statements section of our report. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

INDEPENDENCE

We are independent of the Group and the Parent Charitable Company in accordance with the ethical requirements relevant to our audit of the financial statements in the UK, including the FRC's Ethical Standard, and we have fulfilled our other ethical responsibilities in accordance with these requirements.

CONCLUSIONS RELATED TO GOING CONCERN

In auditing the financial statements, we have concluded that the Trustees' use of the going concern basis of accounting in the preparation of the financial statements is appropriate.

Based on the work we have performed, we have not identified any material uncertainties relating to events or conditions that, individually or collectively, may cast significant doubt on the Group and the Parent Charitable Company's ability to continue as a going concern for a period of at least twelve months from when the financial statements are authorised for issue.

Our responsibilities and the responsibilities of the Trustees' with respect to going concern are described in the relevant sections of this report.

OTHER INFORMATION

The Trustees' are responsible for the other information. The other information comprises the information included in the annual report and financial statements other than the financial statements and our auditor's report thereon. The other information comprises the Contents page, the forward by the Chair of Trustees, Report of the Chief Executive and the Trustees' Report. Our opinion on the financial statements does not cover the other information and, except to the extent otherwise explicitly stated in our report, we do not express any form of assurance conclusion thereon. Our responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the financial statements or our knowledge obtained in the course of the audit, or otherwise appears to be materially misstated. If we identify such material inconsistencies or apparent material misstatements, we are required to determine whether this

gives rise to a material misstatement in the financial statements themselves. If, based on the work we have performed, we conclude that there is a material misstatement of this other information, we are required to report that fact.

We have nothing to report in this regard.

OTHER COMPANIES ACT 2006 REPORTING

In our opinion, based on the work undertaken in the course of the audit:

- the information given in the Trustees' Report, which includes the Directors' Report and the Strategic Report prepared for the purposes of Company Law, for the financial year for which the financial statements are prepared is consistent with the financial statements; and
- the Strategic Report and Directors' Report, which are included in the Trustees' Report, have been prepared in accordance with applicable legal requirements.

In the light of the knowledge and understanding of the Group and the Parent Charitable Company and its environment obtained in the course of the audit, we have not identified material misstatements in the Strategic report or the Trustees' report.

We have nothing to report in respect of the following matters in relation to which the Companies Act 2006 and the Charities and Trustee Investment (Scotland) Act 2005 requires us to report to you if, in our opinion;

- proper and adequate accounting records have not been kept by the Parent Charitable Company, or returns adequate for our audit have not been received from branches not visited by us; or
- the Parent Charitable Company financial statements are not in agreement with the accounting records and returns; or
- certain disclosures of Directors' remuneration specified by law are not made; and
- we have not received all the information and explanations we require for our audit.

RESPONSIBILITIES OF TRUSTEES

As explained more fully in the Statement of Trustees' Responsibilities, the Trustees (who are also the directors of the charitable company for the purposes of company law) are responsible for the preparation of the financial statements and for being satisfied that they give a true and fair view, and for such internal control as the Trustees determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, the Trustees are responsible for assessing the Group's and the Parent Charitable Company's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless the Trustees either intend to liquidate the Group or the Parent Charitable Company or to cease operations, or have no realistic alternative but to do so.

AUDITOR'S RESPONSIBILITIES FOR THE AUDIT OF THE FINANCIAL STATEMENTS

We have been appointed as auditor under section 44(1)(c) of the Charities and Trustee Investment (Scotland) Act 2005 and under the Companies Act 2006 and report in accordance with the Acts and relevant regulations made or having effect thereunder.

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with ISAs (UK) will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

EXTENT TO WHICH THE AUDIT WAS CAPABLE OF DETECTING IRREGULARITIES, INCLUDING FRAUD

Irregularities, including fraud, are instances of non-compliance with laws and regulations. We design procedures in line with our responsibilities, outlined above, to detect material misstatements in respect of irregularities, including fraud. The extent to which our procedures are capable of detecting irregularities, including fraud is detailed below.

We considered those laws and regulations that have a direct impact on the financial statements, such as the Companies Act 2006, Charities and Trustee Investment (Scotland) Act 2005, Charities Act 2011 and tax legislation. We evaluated management's incentives and opportunities for fraudulent manipulation of the financial statements (including the risk of override of controls), and determined that the principal risks were related to inappropriate journal entries to manipulate financial results.

Procedures performed by the audit team included:

- Discussions with management and those charged with governance regarding consideration of known or suspected instances of non-compliance with laws and regulations and fraud;
- Obtaining an understanding of controls designed to prevent and detect irregularities, including specific consideration of controls and accounting policies relating to significant accounting estimates;
- Reviewing minutes from resource and finance committee meetings for evidence of any fraud or non-compliance with laws and regulations;
- Communicating relevant laws and regulations and potential fraud risks to all engagement team members and remaining alert to any indications of fraud or non-compliance with laws and regulations throughout the audit; and
- Assessing journal entries as part of our planned audit approach, with a particular focus on journals entries to key financial statement areas.

Our audit procedures were designed to respond to risks of material misstatement in the financial statements, recognising that the risk of not detecting a material misstatement due to fraud is higher than the risk of not detecting one resulting from error, as fraud may involve deliberate concealment by, for example, forgery, misrepresentations or through collusion. There are inherent limitations in the audit procedures performed and the further removed non-compliance with laws and regulations is from the events and transactions reflected in the financial statements, the less likely we are to become aware of it.

A further description of our responsibilities for the audit of the financial statements is located at the Financial Reporting Council's ("FRC's") website at: https://www.frc.org.uk/auditorsresponsibilities. This description forms part of our auditor's report.

USE OF OUR REPORT

This report is made solely to the Charitable Company's members, as a body, in accordance with Chapter 3 of Part 16 of the Companies Act 2006, and to the Charitable Company's trustee, as a body, in accordance with the Charities and Trustee Investment (Scotland) Act 2005. Our audit work has been undertaken so that we might state to the Charitable Company's members and Trustees those matters we are required to state to them in an auditor's report and for no other purpose. To the fullest extent permitted by law, we do not accept or assume responsibility to anyone other than the Charitable Company and the Charitable Company's members as a body and the Charitable Company's trustees as a body, for our audit work, for this report, or for the opinions we have formed.

DocuSigned by:
David I'Anson
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DAVID I'ANSON (SENIOR STATUTORY AUDITOR)
For and on behalf of BDO LLP, statutory auditor
Southampton
17 December 2021

BDO LLP is a limited liability partnership registered in England and Wales (with registered number OC305127).

CONSOLIDATED STATEMENT OF FINANCIAL ACTIVITIES

FOR THE YEAR ENDED 30 SEPTEMBER 2021 INCORPORATING AN INCOME & EXPENDITURE ACCOUNT

	Note	Unrestricted funds £'000	Restricted funds £'000	Restricted fixed asset funds £'000	Total 2021 £'000
Income from:					
Donations, grants and legacies	1	39,910	23,100	-	63,010
Grant of assets from UKRI	1	-	-	-	-
Income from trading subsidiary	10	376	-	-	376
Other trading activities	2	3,019	305	-	3,324
Investments	3	3	-	-	3
Other income		428	-	-	428
Total incoming resources		43,736	23,405	-	67,141
Expenditure on:					
Raising funds:					
Expenditure from trading subsidiary	10	442	-	-	442
Charitable activities	4	37,794	22,384	6,140	66,318
Total expenditure		38,236	22,384	6,140	66,760
Net income/ (expenditure)		5,500	1,021	(6,140)	381
Transfers between funds	15	(498)	505	(7)	-
Net movement in funds	15	5,002	1,526	(6,147)	381
Reconciliation of funds:					
Fund balances at beginning of year	15	5,387	425	17,541	23,353
Net movement in funds		5,002	1,526	(6,147)	381
Total fund balances at 30 September 2021	15	10,389	1,951	11,394	23,734

FOR COMPARATIVE PURPOSES – FINANCIAL PERFORMANCE FOR THE PRIOR FINANCIAL YEAR

	Note	Unrestricted funds £'000	Restricted funds £'000	Restricted fixed asset funds £'000	Total 2020 £'000
Income from:					
Donations, grants and legacies	1	33,701	19,220	-	52,921
Grant of assets from UKRI	1	21	-	24,646	24,667
Income from trading subsidiary	10	365	-	-	365
Other trading activities	2	2,913	46	-	2,959
Investments	3	19	-	-	19
Other income		4	3	-	7
Total incoming resources		37,023	19,269	24,646	80,938
Expenditure on:					
Raising funds:					
Expenditure from trading subsidiary	10	394	-	-	394
Charitable activities	4	31,242	18,844	7,105	57,191
Total expenditure		31,636	18,844	7,105	57,585
Net income		5,387	425	17,541	23,353
Net movement in funds	15	5,387	425	17,541	23,353
Reconciliation of funds:					
Fund balances at beginning of year	15	-	-	-	-
Total fund balances at 30 September 2020	15	5,387	425	17,541	23,353

All amounts are derived from continuing activities during the above two periods.
The consolidated statement of financial activities includes all gains and losses recognised in the year.

CONSOLIDATED BALANCE SHEET

AT 30 SEPTEMBER 2021

Company number: 11444362	**Note**	**2021 £'000**	**2021 £'000**	**2020 £'000**	**2020 £'000**
Fixed assets					
Intangible assets	8		574		1,114
Tangible assets	9		15,967		16,448
			16,541		17,562
Current assets					
Stocks	11	488		38	
Debtors	12	25,222		4,407	
Cash at bank and in hand	17	42,860		26,651	
		68,570		31,096	
Creditors: amounts falling due within one year	13	(61,377)		(25,305)	
Net current assets			7,193		5,791
Net assets	16		23,734		23,353
Funds					
Unrestricted	15		10,389		5,387
Restricted	15		1,951		425
Restricted fixed asset	15		11,394		17,541
Total funds	15		23,734		23,353

The financial statements were approved and authorised for issue by the Trustees on and signed on their behalf by:

JOHN HIRST CBE
Chair of Board of Trustees
15 December 2021

CHARITY BALANCE SHEET

AT 30 SEPTEMBER 2021

Company number: 11444362	**Note**	**2021 £'000**	**2021 £'000**	**2020 £'000**	**2020 £'000**
Fixed assets					
Intangible assets	8		574		1,114
Tangible assets	9		15,967		16,448
Investments	10		-		-
			16,541		17,562
Current assets					
Stocks	11	488		38	
Debtors	12	25,728		4,539	
Cash at bank and in hand	17	42,417		26,467	
		68,633		31,044	
Creditors: amounts falling due within one year	13	(61,346)		(25,225)	
Net current assets			7,287		5,819
Net assets	16		23,828		23,381
Funds					
Unrestricted	15		10,483		5,415
Restricted	15		1,951		425
Restricted fixed asset	15		11,394		17,541
Total funds	15		23,828		23,381

As permitted by S408 of the Companies Act 2009, the Charity has not presented its own income and expenditure account and related notes. The Charity's surplus for the year was £448k (2020 - £23,381k).

The financial statements were approved and authorised for issue by the Trustees on and signed on their behalf by:

JOHN HIRST CBE
Chair of Board of Trustees, 15 December 2021

CONSOLIDATED STATEMENT OF CASH FLOWS

	Note	2021	2020
		£'000	£'000
Cash flows from operating activities			
Surplus for the year:		381	23,353
Grant of fixed assets from UKRI		-	(24,667)
Depreciation	9	5,599	6,610
Amortisation	8	540	495
Investment income	3	(3)	(19)
Increase in stocks	11	(450)	(38)
Increase in debtors	12	(20,815)	(4,407)
Increase in creditors	13	36,072	25,305
Net cash provided by operating activities		21,324	26,632
Cash flows from investing activities			
Investment income	3	3	19
Purchase of tangible assets	9	(5,118)	-
Net cash (used in)/ provided by investing activities		(5,115)	19
Increase in cash and cash equivalents in the year		16,209	26,651
Cash and cash equivalents at the beginning of the year	17	26,651	-
Cash and cash equivalents at the end of the year	17	42,860	26,651

The notes on pages 75 - 90 form part of these financial statements.

NOTES TO THE FINANCIAL STATEMENTS

The National Oceanography Centre is a private limited company by guarantee without share capital (Company No. 11444362). The Company was incorporated in England and Wales under the Companies Act 2006 on the 2nd July 2018 but did not begin its operations until November 2019. The Company's principal activity is included in the trustees' report and the address of the registered office is included on page 54. The Company is registered as a charity in England and Wales (1185265) and Scotland (SC049896).

The Company has 6 members, who are also directors. The liability of each member on the event of the Company winding up is limited to a maximum of £1.

ACCOUNTING POLICIES

BASIS OF PREPARATION OF FINANCIAL STATEMENTS

The financial statements have been prepared on a going concern basis under the historical cost convention. The financial statements have been prepared in accordance with the Charities SORP, 2nd Edition (FRS 102) Accounting and Reporting by Charities: Statement of Recommended Practice applicable to charities preparing their accounts in accordance with the Financial Reporting Standard applicable in the UK and Republic of Ireland (FRS 102) (effective 1 January 2019), the Financial Reporting Standard applicable in the UK and Republic of Ireland (FRS 102) and the Companies Act 2006.

National Oceanography Centre meets the definition of a public benefit entity under FRS 102. Assets and liabilities are initially recognised at historical cost or transaction value unless otherwise stated in the relevant accounting policy.

The financial statements are prepared in sterling, which is the functional currency of the Group. Monetary amounts in these financial statements are rounded to the nearest thousand pounds.

The preparation of financial statements in compliance with FRS 102 requires the use of certain critical accounting estimates. It also requires management to exercise judgement in applying the Group's accounting policies.

The following principal accounting policies have been applied consistently:

BASIS OF CONSOLIDATION

The Consolidated Statement of Financial Activities (SOFA) and Consolidated Balance Sheet consolidate the financial statements of the Company and its subsidiary undertaking. The results of the subsidiary are consolidated on a line by line basis.

The Parent Charitable Company has taken advantage of the exemption allowed under section 408 of the Companies Act 2006 and has not presented its own Statement of Financial Activities in these financial statements.

EXEMPTIONS FOR QUALIFYING ENTITIES UNDER FRS 102

The Parent Charitable Company has taken advantage of the following disclosure exemptions available in FRS 102:

- from preparing a statement of cash flows;
- from financial instruments disclosures; and
- from the aggregate remuneration of the key management personnel as their remuneration is included in the totals for the group as a whole.

GOING CONCERN

The Trustees have reviewed whether it is appropriate for the financial statements to be prepared on a going concern basis.

The key assumption in assessing going concern is that the NOC's key funders (UKRI and EU) have continued to pay as per their schedules, particularly in light of the COVID-19 pandemic.

UKRI have continued to fund the NOC and reduced their delivery expectations during the COVID-19 pandemic enabling full capability to be maintained throughout. Some COVID funding has been received to enable the NOC to continue to deliver where delivery activity was impacted.

The NOC has put together a 5-year business plan which brings together the National Capability funding from NERC-UKRI with signed research projects and those in the pipeline. For the year 21/22 the full current cost base of the NOC has been trimmed back to achieve some savings and so is covered by funded projects with some resource available to deliver new projects that are in the pipeline or in early stages of bid development at present; some recruitment is likely to be needed in the coming year when current fixed term appointments end and to enable delivery of all the currently funded projects and to deliver the anticipated growth. To enable informed decisions in the first quarter of 21/22, the NOC is deploying detailed resource planning to underpin recruitments.

As the forecast goes out to 22/23 and beyond there is more capacity to take on new funded projects, at this time the plan starts to forecast increased income from fundraising and NOC Innovations activity. Once this takes more shape the recruitment will be planned around the skills needed to deliver new areas of activity. Taking into consideration, signed Awards for National Capability infrastructure and science facilities and services spanning the next 3-5 years, current indications of recommissioning for National Capability Science, previous success rates in research grant rounds with sustained bid submission and forecast of future income based on marketing analysis the indications are that the NOC can continue to cover its cost base over the coming 5-year period.

In conclusion there are no material uncertainties to cast doubt on the NOC's ability to continue as a going concern.

INCOME

All income is recognised once the Group has entitlement to the income, it is probable that the income will be received, and the amount of income receivable can be measured reliably.

Grants are included in the Consolidated Statement of Financial Activities on a receivable basis. The balance of income received for specific purposes but not expended during the year is shown in the relevant funds on the Balance Sheet. Where income is received in advance of entitlement of receipt, its recognition is deferred and included in creditors as deferred income. Where entitlement occurs before income is received, the income is accrued. Donations and grants for particular purposes are included in income as restricted funds.

Where grants relate to donated fixed assets, they are measured at fair value, unless it is impractical to measure this reliably, in which case the cost of the item to the donor is used. The gain is recognised as income from donations and a corresponding amount is included in the appropriate fixed asset class and depreciated over the useful economic life, in accordance with the Group's accounting policies.

Investment income relates to interest on funds held on deposit and is included when receivable and the amount can be measured reliably by the Group; this is normally upon notification of the interest paid or payable by the institution with whom the funds are deposited.

Incoming resources from charitable trading activity are accounted for when earned.

All other income is recognised on an accruals basis once the Group is legally entitled to receipt.

EXPENDITURE

Expenditure is recognised once there is a legal or constructive obligation to transfer economic benefit to a third party, it is probable that a transfer of economic benefits will be required in settlement and the amount of the obligation can be measured reliably.

Expenditure is classified by activity. The costs of each activity are made up of the total of direct costs and shared costs, including support costs involved in undertaking each activity.

Direct costs attributable to a single activity are allocated directly to that activity. Shared costs which contribute to more than one activity and support costs which are not attributable to a single activity are apportioned between those activities on a basis consistent with the use of resources. Central staff costs are allocated on the basis of time spent, and depreciation charges allocated on the portion of the asset's use.

Expenditure on raising funds includes all expenditure incurred by the Group to raise funds for its charitable purposes and includes costs of all fundraising activities events and non charitable trading.

Expenditure on charitable activities is incurred on directly undertaking the activities which further the Group's objectives, as well as any associated support costs.

Governance costs include those incurred in the governance of the Charity and its assets and are primarily associated with constitutional and statutory requirements.

All expenditure is inclusive of irrecoverable VAT.

FOREIGN CURRENCIES

Monetary assets and liabilities denominated in foreign currencies are translated into sterling at rates of exchange ruling at the reporting date.

Transactions in foreign currencies are translated into sterling at the rate ruling on the date of the transaction.

Exchange gains and losses are recognised in the Consolidated Statement of Financial Activities.

INTANGIBLE ASSETS AND AMORTISATION

Intangible assets are capitalised and recognised when future economic benefits are probable and the cost or value of the asset can be measured reliably.

Intangible assets are initially recognised at cost. After recognition, under the cost model, intangible assets are measured at cost less any accumulated amortisation and any accumulated impairment losses.

At each reporting date the Charity assesses whether there is any indication of impairment. If such indication exists, the recoverable amount of the asset is determined to be the higher of its fair value less costs to sell and its value in use. An impairment loss is recognised where the carrying amount exceeds the recoverable amount.

Amortisation is provided on intangible assets at rates calculated to write off the cost of each asset on a straight line basis over its expected useful life.

The estimated useful lives are as follows:

Computer software	-	5 years straight line

TANGIBLE FIXED ASSETS AND DEPRECIATION

Tangible fixed assets are capitalised and recognised when future economic benefits are probable and the cost or value of the asset can be measured reliably.

Tangible fixed assets are initially recognised at cost. After recognition, under the cost model, tangible fixed assets are measured at cost less accumulated depreciation and any accumulated impairment losses. All costs incurred to bring a tangible fixed asset into its intended working condition should be included in the measurement of cost.

Assets in the course of construction are included at costs incurred to date. Depreciation on these assets is not charged until they are brought into use.

At each reporting date the Charity assesses whether there is any indication of impairment. If such indication exists,

the recoverable amount of the asset is determined to be the higher of its fair value less costs to sell and its value in use. An impairment loss is recognised where the carrying amount exceeds the recoverable amount.

Depreciation is charged on a straight-line basis over their estimated useful lives.

Depreciation is provided on the following bases

Scientific equipment	-	5 years
Marine pool	-	5 years
Fixtures and fittings	-	5 years
Computer equipment	-	5 years
Plant and machinery	-	5 years

The assets' residual values, useful lives and depreciation methods are reviewed, and adjusted prospectively if appropriate, or if there is an indication of a significant change since the last reporting date.

Gains and losses on disposals are determined by comparing the proceeds with the carrying amount and are recognised in the Consolidated Statement of Financial Activities.

INVESTMENTS
Investments in subsidiaries are valued at cost less provision for impairment.

STOCKS
Stocks are valued at the lower of cost and net realisable value after making due allowance for obsolete and slow moving stocks. Cost includes all direct costs and an appropriate proportion of fixed and variable overheads.

DEBTORS
Trade and other debtors are recognised at the settlement amount after any trade discount offered. Prepayments are valued at the amount prepaid net of any trade discounts due.

CASH AND CASH EQUIVALENTS
Cash at bank and in hand includes cash and short term highly liquid investments with a short maturity of three months or less from the date of acquisition or opening of the deposit or similar account.

LIABILITIES AND PROVISIONS
Liabilities are recognised when there is an obligation at the Balance Sheet date as a result of a past event, it is probable that a transfer of economic benefit will be required in settlement, and the amount of the settlement can be estimated reliably.

Liabilities are recognised at the amount that the Group anticipates it will pay to settle the debt or the amount it has received as advanced payments for the goods or services it must provide.

FINANCIAL INSTRUMENTS
The Group only has financial assets and financial liabilities of a kind that qualify as basic financial instruments. Basic financial instruments are initially recognised at transaction value and subsequently measured at their settlement value with the exception of bank loans which are subsequently measured at amortised cost using the effective interest method.

OPERATING LEASES
Rentals paid under operating leases are charged to the Consolidated Statement of Financial Activities on a straight-line basis over the lease term.

PENSIONS
The Group operates a defined contribution pension scheme and the pension charge represents the amounts payable by the Group to the fund in respect of the year.

The Group is also participating in a multi employer plan with The National Environmental Research Council which is a defined benefit scheme funded from annual grant in aid on a pay as you go basis. It is not possible for the Group to obtain sufficient information to enable it to account for the plan as a defined benefit plan, it therefore accounts for the plan as a defined contribution plan.

FUND ACCOUNTING
General funds are unrestricted funds which are available for use at the discretion of the Trustees in furtherance of the general objectives of the Group and which have not been designated for other purposes.

Designated funds comprise unrestricted funds that have been set aside by the Trustees for particular purposes. The aim and use of each designated fund is set out in the notes to the financial statements.

Restricted funds are funds which are to be used in accordance with specific restrictions imposed by donors or which have been raised by the Group for particular purposes. The costs of raising and administering such funds are charged against the specific fund. The aim and use of each restricted fund is set out in the notes to the financial statements.

Restricted fixed asset funds represent the moveable assets of the National Oceanography Centre, being the plant, equipment (including IT equipment), libraries, stocks, inventory and consumables of the operation. Without them the National Oceanography Centre could not operate. They are shown separately to other unrestricted funds due to the size and importance of these assets to the National Oceanography Centre.

Investment income, gains and losses are allocated to the appropriate fund.

GIFT AID DONATIONS MADE TO THE CHARITY
Donations made by the subsidiary to the Parent Charity are recognised as income in the charity either when paid or at the date when the subsidiary has a legal liability to make the donation payment if earlier.

RESEARCH VESSELS
The NOC operates and manages two research vessels owned by UKRI under a bareboat charter at peppercorn rates. The terms of the bareboat charter do not meet the definition of a lease and, due to the unique nature of the vessels, it is not possible to reasonably quantify the value ascribed to the ownership and operation of them.

CRITICAL ACCOUNTING ESTIMATES AND AREAS OF JUDGEMENT
Estimates and judgements are continually evaluated and are based on historical experience and other factors, including expectations of future events that are believed to be reasonable under the circumstances.

CRITICAL ACCOUNTING ESTIMATES AND ASSUMPTIONS
The Group makes estimates and assumptions concerning the future. The resulting accounting estimates and assumptions will, by definition, seldom equal the related actual results. The estimates and assumptions that have a significant risk of causing a material adjustment to the carrying amounts of assets and liabilities within the next financial year are discussed below.

CRITICAL AREAS OF JUDGEMENT
Depreciation is a key estimate in the accounts which requires management judgement over the useful life of the assets and the residual values. The policy has been set out in the notes above.

1 INCOME FROM DONATIONS, GRANTS AND LEGACIES

	Unrestricted funds 2021 £'000	Restricted funds 2021 £'000	Total funds 2021 £'000	Total funds 2020 £'000
Donations:				
Other donations	-	28	28	2,000
	-	28	28	2,000
Grant of fixed assets from UKRI	-	-	-	24,667
	-	-	-	24,667
Income from grants:				
UKRI NERC grant	28,334	22,172	50,505	44,925
UKRI other grants	3,118	-	3,118	5,967
Other grants	8,459	900	9,359	29
	39,935	23,047	62,982	50,921
	39,935	23,075	63,010	77,588

2 INCOME FROM OTHER TRADING ACTIVITIES

	Unrestricted funds 2021 £'000	Restricted funds 2021 £'000	Total funds 2021 £'000	Total funds 2020 £'000
Rental	696	-	696	767
Disbursements	1,539	-	1,539	1,639
Maintenance and repairs income	759	249	1,008	479
Bond sales	-	56	56	40
Ship charter income	-	-	-	3
Other trading income	25	-	25	31
	3,019	305	3,324	2,959

3 INVESTMENT INCOME

	Unrestricted funds 2021 £'000	Total funds 2021 £'000	Total funds 2020 £'000
Bank interest	3	3	19

4 EXPENDITURE ON CHARITABLE ACTIVITIES

	Staff Costs 2021 £'000	Vessel costs 2021 £'000	Research costs 2021 £'000	Estate costs 2021 £'000	Depreciation 2021 £'000	Other costs 2021 £'000	Total 2021 £'000	Total 2020 £'000
Activities undertaken directly								
Scientific research	23,296	7,149	2,305	4,063	4,694	5,805	47,312	41,208
Support costs								
- Operations and finance staff	9,405	-	-	-	-	-	9,405	8,099
- Management, operations and facilities costs	-	-	-	3,756	-	4,228	7,984	6,147
- Depreciation	-	-	-	-	1,446	-	1,446	1,482
- Governance costs	-	-	-	-	-	171	171	255
	32,701	7,149	2,305	7,819	6,140	10,204	66,318	57,191

	Total 2021 £'000	Total 2020 £'000
Analysis of governance costs		
Audit fees:		
- Audit of financial statements	83	52
- Other fees paid to auditors	29	7
Trustee remuneration and expenses	6	2
Legal and professional fees	41	181
Finance costs	12	13
	171	255

Total expenditure on charitable activities for the year was £66,318k (2020: £57,191k). Of that expenditure £37,794k (2020: £31,242k) was unrestricted, £22,384k (2020: £18,844k) was restricted and £6,140k (2020: £7,105k) was restricted fixed asset funds.

5 NET INCOME

	2021 £'000	2020 £'000
Net income/ (expenditure) is stated after charging:		
Depreciation of tangible fixed assets	5,599	6,610
Amortisation of intangible fixed assets	540	495
Auditors remuneration:	166	29
- Audit fees	83	52
- Non-audit fees	29	7
Loss on foreign exchange	166	29

6 STAFF COSTS

Group and charity	2021 £'000	2020 £'000
Wages and salaries	25,139	22,920
National insurance contributions	2,559	2,257
Pension costs	5,003	5,234
	32,701	30,411

During the year there were redundancy costs of £247k (2020: £134k) which were paid to 25 (2020: 11) members of staff. Of these 17 (2020: 10) were statutory redundancy pay and 9 (2020: 1) were severance pay.

The number of employees for the year was as follows:

	2021 Number	2020 Number
Science and research staff	241	253
Fundraising staff	3	-
Operations and finance staff	198	200
Engineers and technicians	108	110
Mariners	88	90
	638	653

6 STAFF COSTS (CONTINUED)

The number of employees whose employee benefits (excluding employer pension costs) exceeded £60,000 was:

	2021 Number	2020 Number
£60,001 - £70,000	22	10
£70,001 - £80,000	6	2
£80,001 - £90,000	4	-
£90,001 - £100,000	-	2
£100,001 - £110,000	1	1
£110,001 - £120,000	2	-

	2021 £'000	2020 £'000
Key management personnel salaries (inc. pensions) (Key management personnel are the Senior Management Team, as set out on page 11 of this report)	414	374

Please note in the above table the total employee benefits in 2021 are for a 12-month period whereas the comparative 2020 figures are for those costs incurred over an 11-month period.

7 TRUSTEES' REMUNERATION AND EXPENSES

During the year, one Trustee (David John Gee) received £5.5k (2020: £6.3k) in relation to remuneration or other benefits. The remuneration was agreed and provided under a provision in the governing document of the Charity. Remuneration was provided due to the Trustees' role as the Chair of the Audit and Risk Committee, which requires a range of specialist knowledge and experience and has a wide remit in terms of the role that the Trustee is required to provide. No other benefits were provided.

During the year ended 30 September 2021, no Trustees were reimbursed for expenses (2020 - £0.5k) in relation to travel and subsistence.

During the year indemnity insurance of £66k (2020 - £23k) was purchased in respect of all the Trustees and Officers of the Charity.

8 INTANGIBLE ASSETS

Group and charity	Computer Software and total £'000
At 1 October 2020	1,609
Additions	-
At 30 September 2021	1,609
Amortisation	
At 1 October 2020	495
Charge for the year	540
At 30 September 2021	1,035
Net book value	
At 30 September 2021	574
At 30 September 2020	1,114

9 TANGIBLE FIXED ASSETS

Group and charity

	Scientific equipment £'000	Marine pool £'000	Fixtures and fittings £'000	Computer equipment £'000	Plant and machinery £'000	Total £'000
Cost or valuation						
At 1 October 2020	14,465	5,329	122	1,169	1,973	23,058
Additions	2,361	2,430	-	355	(28)	5,118
At 30 September 2021	16,826	7,759	122	1,524	1,945	28,176
Depreciation						
At 1 October 2020	3,962	1,661	23	446	518	6,610
Charge for the year	3,397	1,297	26	399	480	5,599
At 30 September 2021	7,359	2,958	49	845	998	12,209
Net book value						
At 30 September 2021	9,467	4,801	73	679	947	15,967
At 30 September 2020	10,503	3,668	99	723	1,455	16,448

10 FIXED ASSET INVESTMENTS

The addition in the year related to 100% of the share capital on incorporation of National Oceanography Centre Innovations Limited on the 9th October 2019 at the cost of £1.

PRINCIPAL SUBSIDIARIES

The following was a subsidiary undertaking of the Charity:

Name	Company number	Registered office or principal place of business	Principal activity	Class of shares	Holding
National Oceanography Centre Innovations Limited	12250763	National Oceanography Centre European Way Southampton United Kingdom SO14 3ZH	Development of products and services based on the output of ocean science research and engineering	Ordinary	100%

As at 30 September 2020 trading subsidiary accounts were as follows:

	2021 £'000	2020 £'000
Income	376	365
Expenditure	(442)	(394)
Net liabilities	(66)	(29)

11 STOCKS

Group and charity	2021 £'000	2020 £'000
Goods for resale	488	38

The difference between purchase price or production cost of stocks and their replacement cost is not material.

During the year there was no impairment to the value of stock (2020 - £Nil).

12 DEBTORS

	Group 2021 £'000	Group 2020 £'000	Charity 2021 £'000	Charity 2020 £'000
Trade debtors	23,598	3,513	23,424	3,438
Group debtors	-	-	680	207
Prepayments	1,555	855	1,555	855
Other debtors	69	39	69	39
	25,222	4,407	25,728	4,539

During the year there was no impairment to the value of debtors in relation to bad debt provisions (2020 - £Nil).

13 CREDITORS: AMOUNTS FALLING DUE WITHIN ONE YEAR

	Group 2021 £'000	Group 2020 £'000	Charity 2021 £'000	Charity 2020 £'000
Trade creditors	1,427	1,741	1,427	1,741
Due to Marine and EU partners	2,366	4,801	2,366	4,801
Pension accrual	207	195	207	195
Social security and other taxes	62	15	62	15
Accruals	3,076	4,140	3,061	4,140
Deferred income (see note 14)	54,239	14,413	54,222	14,333
	61,377	25,305	61,345	25,225

14 DEFERRED INCOME

	Group 2021 £'000	Group 2020 £'000	Charity 2021 £'000	Charity 2020 £'000
At 1 October	14.413	-	14,333	-
Released to income	(55,050)	-	(54,968)	-
Amounts deferred in year	94,876	14,413	94,857	14,333
Carried forward	54,239	14,413	54,222	14,333

Deferred income relates to grant income, including research grants, which are received in advance of specific conditions being met. The income is shown as deferred until those conditions are fully satisfied.

15 FUNDS

Group	Balance at 30 September 2020 £'000	Income £'000	Expenditure £'000	Transfers £'000	Balance at 30 September 2021 £'000
Unrestricted funds					
Designated:					
Long Term Maintenance	(1,042)	-	-	1,042	-
General unrestricted:					
Unrestricted funds	6,429	43,736	(38,236)	(1,540)	10,389
Total unrestricted funds	5,387	43,736	(38,236)	(498)	10,389
Restricted funds					
Restricted funds	425	23,405	(22,384)	505	1,951
Restricted fixed asset funds	17,541	-	(6,140)	(7)	11,394
Total restricted funds	17,966	23,405	(28,524)	498	13,345
Total funds	23,353	67,141	(66,760)	-	23,734

Charity	Balance at 30 September 2020 £'000	Income £'000	Expenditure £'000	Transfers £'000	Balance at 30 September 2021 £'000
Unrestricted funds					
Designated:					
Long Term Maintenance	(1,042)	-	-	1,042	-
General unrestricted:					
Unrestricted funds	6,457	43,360	(37,794)	(1,540)	10,483
Total unrestricted funds	5,415	43,360	(37,794)	(498)	10,483
Restricted funds					
Restricted funds	425	23,405	(22,384)	505	1,951
Restricted fixed asset funds	17,541	-	(6,140)	(7)	11,394
Total restricted funds	17,966	23,405	(28,524)	498	13,345
Total funds	23,381	66,765	(66,318)	-	23,828

15 FUNDS (CONTINUED)

General funds are unrestricted funds which are available for use at the discretion of the Trustees in furtherance of the general objectives of the Group and which have not been designated for other purposes.

Designated funds comprise unrestricted funds that have been set aside by the Trustees for particular purposes. The aim and use of each designated fund are set out in the notes to the financial statements.

Restricted funds are funds which are to be used in accordance with specific restrictions imposed by donors or which have been raised by the Group for particular purposes. The costs of raising and administering such funds are charged against the specific fund.

Restricted funds comprise of NMF ship operating income, charter income balance and NMEP capital replacement.

Restricted fixed asset funds are funds for the sole use of acquiring the moveable assets of the NOC on the 1 November 2019 and the expenditure is the subsequent depreciation of these assets.

16 NET ASSETS

Group	Fixed assets 2021 £'000	Current assets 2021 £'000	Current Liabilities 2021 £'000	Total 2021 £'000
General unrestricted	-	15,935	(5,546)	10,389
Designated	-	-	-	-
Restricted	5,147	52,635	(55,831)	1,951
Restricted fixed asset	11,394	-	-	11,394
	16,541	68,570	(61,377)	23,734

Group	Fixed assets 2020 £'000	Current assets 2020 £'000	Current Liabilities 2020 £'000	Total 2020 £'000
General unrestricted	21	29,337	(22,929)	6,429
Designated	-	1,334	(2,376)	(1,042)
Restricted	-	425	-	425
Restricted fixed asset	17,541	-	-	17,541
	17,562	31,096	(25,305)	23,353

16 NET ASSETS (CONTINUED)

Charity	Fixed assets 2021 £'000	Current assets 2021 £'000	Current Liabilities 2021 £'000	Total 2021 £'000
General unrestricted	-	15,998	(5,515)	10,483
Designated	-	-	-	-
Restricted	5,147	52,635	(55,831)	1,951
Restricted fixed asset	11,394	-	-	11,394
	16,541	68,633	(61,346)	23,828

Charity	Fixed assets 2020 £'000	Current assets 2020 £'000	Current Liabilities 2020 £'000	Total 2020 £'000
General unrestricted	21	29,285	(22,849)	6,457
Designated	-	1,334	(2,376)	(1,042)
Restricted	-	425	-	425
Restricted fixed asset	17,541	-	-	17,541
	17,562	31,044	(25,225)	23,381

17 CASH AND CASH EQUIVALENTS

	Group 2021 £'000	Group 2020 £'000	Charity 2021 £'000	Charity 2020 £'000
Cash at bank	42,860	26,651	42,417	26,467

18 ANALYSIS OF NET DEBT

	At 1 October 2020	Cash flows	At 30 September 2021
Group			
Bank and cash balances	26,651	16,209	42,860
Charity			
Bank and cash balances	26,467	15,950	42,417

	At 1 October 2019	Cash flows	At 30 September 2020
Group			
Bank and cash balances	-	26,651	26,651
Charity			
Bank and cash balances	-	26,467	26,467

19 PENSION COMMITMENTS

UKRI-NERC employees are entitled to be members of the Research Council's Pension Scheme which is a defined benefit scheme funded from annual grant-in-aid and pay-as-you-go basis. The pension scheme is contributory and is administered by the Research Council's Joint Superannuation Service. The scheme is a multi-employer scheme, for which a separate Research Council's Pension Scheme account is published. NERC are unable to identify their share of the underlying assets and liabilities and those relating to the NOC.

Employees who joined after 1 November 2019 are entitled to be members of the National Oceanography Centre Group Pension Scheme. This is a defined contribution pension scheme administered by Legal and General. Contributions for the year were employer's 10% and employees a minimum of 5%.

The pension costs charge for the year represents contributions payable to the schemes and amounted to £5,003k (2020: £5,234k).

20 RELATED PARTY TRANSACTIONS

The Charity recharged employment costs of £307k (2020: £245k) to National Oceanography Centre Innovations Limited, its subsidiary and also incurred costs of £134k (2020: £148k) on behalf of its subsidiary.

At the year end the Charity was owed £680k (2020: £207k) by National Oceanography Centre Innovations Limited.

Transactions with Trustees are detailed in note 15.

GLOSSARY OF TERMS

ALR ..... Autosub Long Range

AutoNutS ..... Autonomous vehicle NUTrient Sensors project

BODC ..... British Oceanographic Data Centre

BOSCORF ..... British Ocean Sediment Core Research Facility

CAMPUS ..... Combining Autonomous observations and Models for Predicting and Understanding Shelf seas

CarCASS ..... Carbonate Chemistry Autonomous Sensor System

CLASS ..... Climate Linked Atlantic Sector Science

GEBCO ..... General Bathymetric Chart of the Oceans

GOOS ..... Global Ocean Observing System

IPCC ..... Intergovernmental Panel on Climate Change

MEDIN ..... Marine Environment Data and Information Network

NERC ..... Natural Environment Research Council

NMEP ..... National Marine Equipment Pool

NOC ..... National Oceanography Centre

NOC Innovations ..... National Oceanography Centre Innovations Limited

NVS ..... NERC Vocabulary Server

NZOC ..... Net Zero Oceanographic Capability

PAP-SO ..... Porcupine Abyssal Plain - Sustained Observatory

PSMSL ..... Permanent Service for Mean Sea Level

RRS ..... Royal Research Ship

SHARC ..... Submarine High-fidelity Active-monitoring of Renewable energy Cables

SORP ..... Statements of Recommended Practice

STEMM-CCS ..... Strategies for Environmental Monitoring of Marine Carbon Capture and Storage

UKRI ..... UK Research & Innovation

UNESCO ..... United Nations Educational, Scientific and Cultural Organization

STAY IN TOUCH

The NOC is one of the world's top oceanographic institutions.

We provide the UK's National Capability needed to be a top global player, to lead and participate in international co-operations.

We undertake world leading research in large scale oceanography and ocean measurement technology innovation; working with government and business to turn great science and technology into advice and applications. We support scientists in universities and research institutes with facilities, research infrastructure and irreplaceable data assets – enabling the UK to harness the full power and diversity of its ocean science talent.

To get bite-sized updates on our **Science and Technology**, **Latest News**, **Public Events**, **Career Opportunities** and **Educational Resources**, subscribe to **NOCMail** via our website or follow us on social media;

NOC.AC.UK

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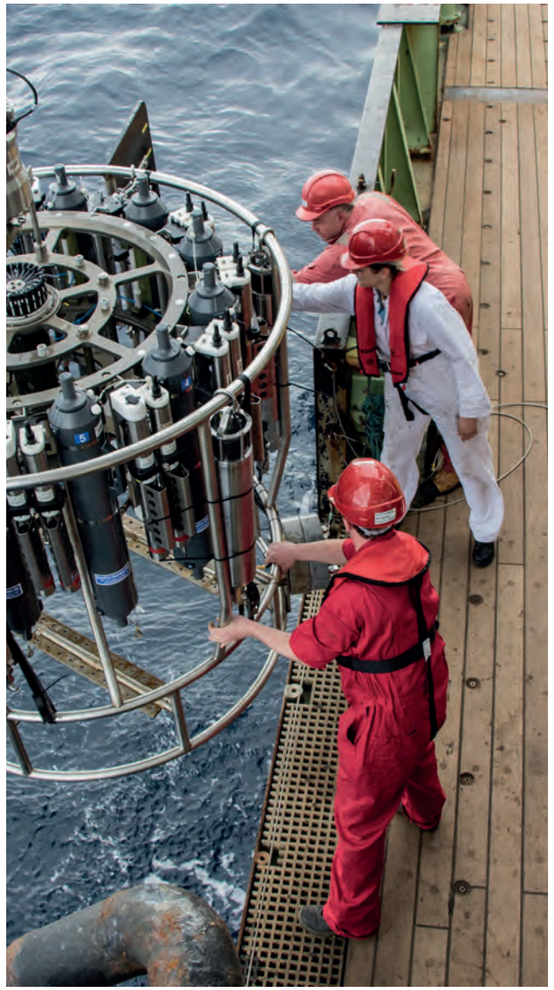

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National Oceanography Centre is a company limited by guarantee, set up under the law of England and Wales, company number 11444362. National Oceanography Centre is registered as a charity in England and Wales, charity number 1185265, and in Scotland, charity number SC049896. © National Oceanography Centre

Find out more at noc.ac.uk

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NATIONAL OCEANOGRAPHY CENTRE

England & Wales - Charity number 1185265

Accounts

National Oceanography Centre

National Oceanography Centre

A Company Limited by Guarantee

Annual Report and Financial Statements

Year Ended 30 September 2020

Registered Number 11444362

Charity Numbers 1185265 & SC049896

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1. Reference and Administrative Details

Company registered number
11444362

Charity registered numbers
1185265 and SC049896

Registered office
National Oceanography Centre
European Way
Southampton
SO14 3ZH

Independent auditor
BDO LLP
Arcadia House
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Legal Advisors
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Bridgewater Place
Water Lane
Leeds
LS11 5DR

Bank
Natwest
3 Hampshire Corporate Park
PO Box 462
Templars Way
Chandlers Ford
SO53 3RY

Financial/Tax advice
Deloitte LLP
3 Rivergate
Temple Quay
Bristol
BS1 6GD

Chairman
John Hirst, CBE

Directors and Trustees
Prof. Sir Ian L Boyd

Ruth Boumphrey

Sarah Kenny OBE

Sarah McMath

David Gee

Daniel Hook

Senior Management Team
Prof. Ed Hill CBE
Chief Executive

Julie Pringle-Stewart
Chief Operating Officer, Chief Financial Officer, Company Secretary

Prof. Angela Hatton
Director of Science and Technology

Leigh Storey
Associate Director for National Marine Facilities

Natalie Campbell
Associate Director for Corporate Business Support

Prof. Doug Connelly
Associate Director for Research

Cait Allen
Associate Director for Engagement

Huw Gullick
Managing Director of NOC Innovations Ltd and Associate Director for Strategic Business Development

Danielle Rossiter
Head of Finance

Matt Eades
Head of People and Skills

2. Foreword by the Chair of Trustees and Report of the Chief Executive

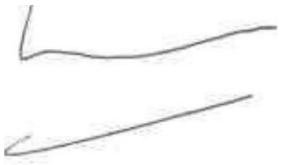
2.1 Chairman of the Board of Trustees

It is a great honour to be the first Chairman of the National Oceanography Centre (NOC), as it takes its place in the world as an independent charity with an ambitious vision.

Setting up and launching the organisation has kept us busy. Previously, NOC was fully embedded in the UK's main environmental science funding body, the Natural Environment Research Council (NERC), who are part of the UK's main science funding agency, UK Research & Innovation (UKRI). Following a substantial programme of activity, an independent Gateway 4 Review and Ministerial approvals, NOC became an independent legal entity from 1 November 2019. This has enabled NOC to continue to flourish as a world-class research organisation, by giving us the independence it needs to have the freedoms to meet the challenges and opportunities facing it. The really exciting work starts now, in creating a strategy that makes the NOC an even greater force for good. With the impact of COVID-19 over the last year, the world feels very different. But the ocean remains one of the most essential global forces, from impacting climate change to bringing us food, energy and digital ability. During the pandemic we have taken time and space to seize the opportunity to be in control of our own destiny, with all the freedom and responsibility that brings.

I work with a newly established Board that has wide ranging expertise in science, engineering and business leadership. We are committed to the NOC's strategic goals and recognise the role we play in working with the organisation to achieve these aims. We have worked together with the Executive to develop strong measures so we can track our progress, as well as helping the organisation evolve into its new governance structure. I would like to thank our Chief Executive, Professor Ed Hill; our Executive team for their leadership, and all our staff throughout the organisation, for their commitment during these challenging and exciting times.

The NOC is a UK leader and global influencer, but we cannot succeed on our own. We work in partnership with Government, world experts, academia, industry and our own people. Together we share a passion: we understand the ocean sustains and nourishes our lives, and we aim to protect it so we can all thrive.



John Hirst CBE
Chair of Board of Trustees

25 March 2021

2.2. Report of the Chief Executive

I would like to thank the Board in helping us develop a strong strategy to bring the new National Oceanography Centre to life as an independent body. Building a new organisation is no small task. As well as developing the practicalities, such as systems and processes, the important work is around creating a culture which allows us to innovate and lead in advancing marine science, including developing the measurement technologies on which scientific knowledge and understanding of the ocean depends.

Just before we closed down our buildings to protect our staff from COVID-19, we met as an organisation to celebrate new beginnings. This was a highlight of the year for me, as it was the culmination of many months of preparatory work. We were able to pause, together, to reflect on our role in the world now, and the immense impact we can have on our ocean's future.

Of course, we are not a completely new organisation and carry with us a proud history. Whilst our Vision is of course very forward-looking, it really reflects the ambition we have always held: an ambition to bring about change for the good of humankind and the world we all live in:

By 2025, to be seen as the world's most innovative oceanographic institution

This vision is not only inherent to our purpose of advancing science but is one we want to pervade everything that we do, and so empower our people. Similarly, our mission is built on our strong legacy of using great science and developing leading technology to understand our ocean and how it impacts life on earth. Our enduring mission has always been:

Making sense of changing seas for the benefit of all

Our people remain our greatest asset, our shared values which we developed together underpin all that we do in realising our vision and delivering our mission. I would like to thank our staff who have truly embraced our change in organisational status and responded superbly to the disruptions caused by COVID-19. Like other organisations, we quickly learnt that most of us can work very well remotely, although we recognise the value of sharing ideas together as a team, which is what leads to innovation.

The resilience and flexibility shown through this year is really captured in our organisational values. We live by our values in deciding what we do and how we do it. Investigating the ocean is a global endeavour, relying upon and fully embracing our diversity of talent, ideas, perspectives, experiences, backgrounds and skills.

Excellence | Innovative thinking | Empowerment | Environmental responsibility | Integrity | Working in partnership

2.2. Report of the Chief Executive (continued)

We embrace diversity, which runs through all of these values and is integral to our vision for innovation. We will be working to embed this further in all we do, and I will personally be leading a group that will focus on making sure we remain inclusive and celebrate difference.

We have had to be flexible, but the science did not stop. The innovation did not stop. By our very nature we found new ways to work. The ocean has not gone away and the decade to 2030 will be a critical one for the health of the ocean upon which our lives and wellbeing so depend. This is why we look forward to engaging strongly in the work of the UN Decade of Ocean Science for Sustainable Development, with its bold vision to undertake the science we need for the ocean we want – clean, healthy, safe, productive, predicted, inspiring, and with information about it transparently accessible to all. The development of the new organisation and the arrival of COVID-19 did not detract from our work, if anything it enhanced it, as it was a reminder to all that change is healthy when you understand it and are flexible enough to work with it. Our first year has given us challenges we could never have predicted, yet the achievements of our staff are not at all surprising to us. Next year promises to be just as interesting, as we go back into a world in which people have had a stark reminder of how important science is in navigating our world.

Professor Ed Hill CBE
Chief Executive

25 March 2021

3. Trustees' Report - incorporating the Strategic Report

The Trustees, who are directors for the purposes of company law, present their Annual Report together with the audited consolidated financial statements of the charity and its trading subsidiary for the year 1 October 2019 to 30 September 2020.

The directors of the Trustee Board during the year were:

John Hirst, CBE

Prof. Sir Ian L Boyd

Ruth Boumphrey

Sarah Kenny OBE

Sarah McMath

David Gee

Daniel Hook

The National Oceanography Centre is a company limited by guarantee and a registered charity. The NOC is a company limited by guarantee and registered as a charity with the Charity Commission and the Scottish Charity Regulator. The NOC became an independent organisation on 1 November 2019 and is governed by its Articles of Association, adopted on 2 July 2018 and amended by Special Resolutions.

The Annual Report and financial statements have been prepared in accordance with the Charities Act 2011, the Companies Act 2006 and Accounting and Reporting by Charities: Statement of Recommended Practice (SORP) applicable to charities preparing their accounts in accordance with the Financial Reporting Standard applicable in the UK and Republic of Ireland (FRS102) (effective 1 January 2019).

Methods of appointment or election of Trustees and Equality, Diversity and Inclusion

As part of Her Majesty's Treasury (HMT) approval processes for the NOC to become an independent, charitable organisation approval was sought from the Chief Secretary to the Treasury for a derogation, to ensure that the NOC be classified as outside the public sector from the point of the transfer of its undertakings from UK Research & Innovation (UKRI). The NOC had three board members appointed from incorporation who were deemed to be public appointees. To ensure the Board appointments were consistent with an ONS classification of the NOC outside the public sector, we recruited four additional trustees to form a board of seven. These trustees were recruited with the support of a recruitment agency externally for independent appointment and met the requirements of private appointees, therefore the NOC's ONS classification is that we are a fully private organisation.

Recruitment of new Trustees is undertaken as set out in the Articles of Association. All Trustees are appointed for an initial term of three years, at the end of which they shall retire. Trustees can then be reappointed for a further three-year term, with approval by the Board of Trustees. A Trustee shall serve for no more than six consecutive years, unless the Trustees consider it would be in the best interest of the NOC on an exception basis for a particular Trustee to continue to serve for one further term of up to three years, with a limit of nine consecutive years in office. Executive members are required to be in a minority of the board and the NOC currently have no executive members on their Trustee board. The Chair is appointed by the Board of Trustees.

3. Trustees' Report - incorporating the Strategic Report

Methods of appointment or election of Trustees and Equality, Diversity and Inclusion (continued)

We aim to have fair, transparent appointment processes which ensure there are no restrictions on candidates and that enhance achievement of a diverse board, ensuring there is a balance of skills, diversity and background. We have in place a formal process to recruit and appoint new Trustees, including use of an external independent agency, which is reviewed by the Nomination Committee regularly to ensure it continues to be effective and fair. Before any appointment is made by the Board, the Nomination Committee will evaluate the balance of skills, knowledge, experience and diversity on the Board, and, in the light of this evaluation, prepare a description of the role and capabilities required, ensuring a wide range of candidates are considered. In addition, to ensure the Board is sufficiently skilled to carry out its responsibilities and to consider the diversity of the board, there is also a review undertaken of the board skills matrix analysis as part of the board annual review process.

Induction and training of Trustees

The NOC have policies in place on induction and training of trustees. As part of our on-boarding process, new trustees receive an induction to introduce them to our work, which includes introduction to each member of the Executive team, presentations, tours and meeting various colleagues to learn about the different functions of the NOC.

Each trustee has access to a trustee handbook which provides current good practice guidance on how they can contribute most effectively to the NOC, including the Five-Year Strategy, Articles of Association, our Values and Behaviours, relevant NOC policies and a wide range of other documentation. This pack also includes relevant Charity Commission guidance, such as The Charity Governance Code, 'CC3 – The essential trustee' and Public Benefit guidance. All trustees are required to sign up to a Trustees' Code of Conduct and adhere to Trustee and NOC policies.

Training opportunities are provided to Trustees and where specific training needs are identified, these are arranged and delivered, facilitated where appropriate through external providers. Recent training has been made available to all Trustees on Essential Charity Governance.

Review of board performance

The NOC Board will undertake an annual review of its own effectiveness and in future, this will be supported through an external provider to ensure transparency and impartiality in this review.

Organisational structure and decision-making policies

Board of Trustees

NOC's Board of Trustees are responsible for ensuring that NOC is carrying out its purpose for the public benefit, the continued financial viability of the organisation and for carrying the legal responsibility to assure that we meet all of our legal and compliance requirements. The Chair of the NOC Board, John Hirst, is responsible for leading the board of trustees and ensuring that they are effective in discharging their duties.

3. Trustees' Report - incorporating the Strategic Report

Organisational structure and decision-making policies (continued)

They work to support but also challenge the Chief Executive and Executive team, to ensure that they are discharging their delegated responsibilities in successfully leading the organisation. In our first year as a charity, we have established a route for the trustees to regularly monitor and review the performance of the organisation against a set of key performance indicators that demonstrate our progress to delivery of our strategy.

The NOC Board meets formally at least four times a year. The board has standing agenda items covering strategy, performance, risk and compliance. This list is supplemented with other items of relevance to the Trustees' role and responsibilities. During 2019-20 the NOC Board met seven times and in our first year there were numerous important themes. They reviewed and approved the Five-Year Strategy and associated performance measures (as reported on in Section 4), our new governance approach with particular focus on our internal controls, our new Risk Framework and development of our new People and Culture Strategy.

Sub-Committees

To assist the board with detailed scrutiny of specific subject matters and to make recommendations on those topics, we operate a number of board subcommittees. The committees are Chaired by a Trustee appointed by the Board and report directly to the Board.

Audit and Risk Committee
The Audit and Risk Committee meets at least three times a year. On behalf of the Board it has overall responsibility for financial reporting, internal control and risk management. It oversees the whistleblowing arrangements and the audit function, whilst maintaining an appropriate relationship with the external auditor. It exercises effective control by ensuring the organisation understands and meets its regularity obligations, has good financial and management controls in place, identifies and manages relevant risk and has an effective system of delegation in place. The committee acts independently from the NOC Executive, to ensure that the interests of the charity are properly protected in terms of monitoring the integrity of the company financial statements.

Remuneration Committee
The Remuneration Committee meets at least twice a year to provide a forum for developing policy on trustee and executive remuneration, recommend levels of remuneration for Directors and review the remuneration policy and reward package for all employees. It oversees any major changes in the employee benefits structure throughout the organisation. This year the committee has provided guidance and advice to the organisation in the development of its new reward and retention approach and to the Job Families programme.

Nomination Committee
The Nomination Committee has the role of leading the process for Board appointments. It makes recommendations to the Board to ensure there is a formal, rigorous and transparent procedure for the appointment of new directors to the board and reviewing and evaluating the balance of skills, knowledge, experience and diversity on the board. The committee's recommendations are undertaken in line with NOC's Articles of Association's powers for Trustee recruitment. Trustee Board members serve up to a three-year term and can be reappointed for a further three years. The nomination committee is responsible for the long-term succession planning for future Trustees.

3. Trustees' Report - incorporating the Strategic Report

Organisational structure and decision-making policies (continued)

The Executive Committee

The Executive Team, made up of seven individuals led by the Chief Executive (see page 1), is given delegations for the day-to-day leadership and operations of the NOC, focusing on delivering the NOC Five-Year Strategy. The specific details of delegations and authority are detailed in a Statement of Delegations, approved by the Board. The team meets monthly as it plays an important role in ensuring that we continue to be a successful and sustainable organisation that is adaptable and flexible. As a team they are committed not only to focus on the delivery of our core activities, but also to look forward to ensure we remain sustainable as an organisation, able to respond to changing trends and external factors.

Pay policy for Senior Staff

During the year one Trustee received remuneration as disclosed under note 9 to the financial statements. Details of the Trustees' expenses incurred in the course of their duties are reimbursed and is disclosed under note 9.

The Chief Executive Officer's remuneration package is reviewed annually by the Board of Trustees who review benchmarking data from comparable sized charities, regional companies and from NERC Research Centres and assess performance against objective set for the year.

The remuneration of the remaining members of the Senior Management Team is reviewed by the Remuneration Committee (see above), with recommendations made to the Board of Trustees for its approval.

Related Parties

The NOC is eligible to bid for funding from UKRI, including NERC. NOC manage the National Capability funding on behalf of NERC working in partnership with marine centres throughout the UK.

The NOC's wholly owned subsidiary, National Oceanography Centre Innovations Limited, was established to undertake more applied and commercial work, to facilitate knowledge exchange and encourage innovation. It may gift aid its profits to NOC.

Governance framework

Good governance is fundamental to the sustained success of the NOC. Our governance framework provides critical assurance through risk management and internal control.

The NOC adheres to the principles of the charity governance code to underpin its governance framework, providing a strong focus on the behaviours and standards required by the organisation that will develop a good governance culture. In our first year as a charity, there has been a significant amount of resource and attention focused on our governance structure and approach, this has been reviewed and approved by the NOC Board of Trustees.

3. Trustees' Report - incorporating the Strategic Report (continued)

Information Governance and the Cyber Landscape

In recognition of increased risks within cyber landscape, during the summer of 2020, the NOC Audit and Risk Committee assessed NOC's approach and resilience to cyber threats. We provide regular education and awareness sessions for staff, regularly review the effectiveness of our technological defence capabilities, assess emerging and persistent threats and take proactive and remedial actions to keep our risk exposure to an acceptable level. We have invested in a number of areas including upgrading our firewalls across both of our sites and invested in dual authentication for remote working. As an organisation we attained and maintained our Cyber Essentials accreditation, demonstrating our Information Security maturity.

Conflicts of interest

The NOC operate a Conflict of Interest policy that applies to all of the Trustees. We maintain a public register of interests and ensure that conflicts of interest are discussed and reviewed at the start of each board meeting. When conflicts of interest are declared, and where there was any perceived conflict, the member would be excluded from the relevant conversations and any decision on the subject matter. There were no externally reportable conflicts of interest declared or discovered in 2019-20.

Complaints and feedback

It is the NOC's policy to conduct all of our business in an honest and ethical manner. We are committed to acting professionally, fairly and with integrity in all our business dealings and relationships, no matter where in the world this takes place and with anyone we come into contact with. The NOC have accessible and clear complaints and feedback reporting facilities on the NOC external website and any feedback, positive or negative, is reviewed by the Trustee Board. In the year 1 November 2019 to 30 September 2020 the NOC did not receive any complaints related to fundraising.

Serious incident reporting

There were no serious incidents reported to the Charity Commission during 2019-20.

Significant governance and control issues

During 2019-20 there was one incident of concern with regards to internal control. An employee reported a potential GDPR breach during the first month of the roll out of our new ERP system. Prompt action was taken to resolve the issue, with further work completed to review the delegation and controls embedded within the system. We are now confident in the controls. The NOC notified the Information Commissioner's Office (ICO) to seek further advice and guidance, and the ICO confirmed that they considered no further action necessary.

3. Trustees' Report - incorporating the Strategic Report (continued)

Trustees' indemnities

NOC's Articles of Association, Article 41, entitles the Directors and former Directors of NOC to an indemnity against liability incurred by them to a third party in the proper performance of their duties. This applies to any liability incurred by virtue of their role as a Director or Officer. The indemnity and any insurance provision must not indemnify a Director against certain liabilities as set out in section 189 of the Charities Act 2011 which include a fine as a result of criminal proceedings and a penalty imposed by a regulatory authority as a result of non-compliance.

The governing document also gives the powers for NOC to take out (and pay for) indemnity insurance for the Trustees. Insurance of this nature is designed to indemnify directors/trustees against any personal liability arising from the following (providing they were not purposeful actions):

a) any breach of trust or duty committed by him/her in his/her capacity as charity trustee or trustee for a charity; and b) any negligence, default, breach of trust or duty committed by him/her in his/her capacity as a director or officer of the charity.

Before exercising the power to take out such insurance, the Trustees must be satisfied that it is in the best interests of NOC.

Members' liability

The Members of the Charity guarantee to contribute an amount not exceeding £1 to the assets of the Charity in the event of winding up.

Disclosure of information to auditor

Each of the persons who are Trustees at the time when this Trustees' Report is approved has confirmed that:

- so far as that Trustee is aware, there is no relevant audit information of which the charitable group's auditor is unaware, and;
- that Trustee has taken all the steps that ought to have been taken as a Trustee in order to be aware of any relevant audit information and to establish that the charitable group's auditor is aware of that information.

3. Trustees' Report - incorporating the Strategic Report (continued)

3.1. Objectives and Activities

All of our charitable objects are developed to benefit the public and the world in which we live together.

1. **The advancement of science**, in particular enhancing the scientific knowledge and understanding of oceanographic sciences, and the ocean and its interaction with the earth system, and facilitating the use and application of that knowledge and understanding, particularly by:

    a. Undertaking and causing to be undertaken research including through technology development, experimentation, analysis, long term ocean observation, monitoring, mapping, survey and modelling of a high international standard and disseminating the useful results of research

    b. Providing access to scientific research and technology development facilities and infrastructure including research ships and other measurement platforms and systems to the ocean science community

    c. Obtaining, managing, curating and providing access to digital data, samples and other specimens

    d. Being the UK national focus for ocean science, exercising leadership for and promoting co-operation with the wider UK science community, and providing national and international visibility and expert representation for oceanographic sciences

    e. Innovation or by encouraging and supporting innovation

2. **The advancement of education in oceanographic sciences**, and the ocean and its interaction with the earth system and relationship with people, particularly by:

    a. Contributing to the education (particularly post graduate higher education), training and development of the next generation of scientists, engineers, technologists including the supervision of postgraduate research students

    b. Supporting the building of marine research scientific and technical capacity in other countries around the world

    c. Communicating with and engaging with the public in relation to ocean science and technology through seminars, talks, leaflets, papers and other means

Our beneficiaries

We exist to make a difference, so our beneficiaries are at the forefront of all we do. They include:

- The public all over the world - inspiring, informing and educating
- Marine life and ecosystems - protecting our world so it works in harmony
- Scientists, engineers and researchers - nationally, internationally and in developing countries

3. Trustees' Report - incorporating the Strategic Report (continued)

3.1. Objectives and activities (continued)

- Young people and students - encouraging study, research and careers in oceanography
- Government - informing decision making through robust evidence
- Offshore operators - ensuring those who use the ocean do so in a safe and sustainable way
- NOC teams - making sure our people have a career that inspires and motivates them

3.2. Public Benefit Statement

In setting the vision and mission for the NOC, the Trustees gave due consideration to the guidance on public benefit, as outlined by the Charity Commission of England and Wales and the Scottish Charity Regulator OSCR.

The NOC's key driver for selecting topics for research is always what will take ocean science forward for the furtherance of our charitable purpose (Section 3.1), our touch stone in all endeavours is providing public benefit.

To enable the organisation and individuals to exercise independent discretion in this decision making we have established an Activity Decision Tree. Its general principles are applied when deciding whether activity is routed through the NOC or NOC Innovations Ltd - the trading subsidiary of the NOC. This includes examination of ethical considerations, reputational risks, organisation and scientific independence of the NOC, where the benefit is accrued and risk and mitigations thereof (see Section 3.10).

Where contract research is undertaken by NOC CLG we do so in line with the Commission's guidance on Research by Higher Education Institutions, and ensure it is funded at full cash cost. The NOC retains scientific control of any IP licensed so that it can continue to advance science and technology for the benefit of the public.

The NOC and NOC Innovations Ltd bring benefits in a number of ways, including through scientific research, marine technology, education, information and advice. Through our work, we aim to:

1. Understand climate change
2. Reduce pollution of the ocean
3. Secure and protect ocean resources and ecosystems, which provide food, minerals and clean energy
4. Protect coastal communities from erosion, extreme weather and flooding
5. Educate people all over the world about ocean issues
6. Support overseas nations in growing their ocean science and capability

3. Trustees' Report - incorporating the Strategic Report (continued)

3.3. Strategies for Ensuring Delivery of Objectives

We know our planet and our ocean is constantly changing. Understanding the breadth of environmental challenges, now and in the future, is an ongoing endeavour. It is with this insight that we align our annual objectives to our Five-Year Strategy 'Defining our Future: Strategic Priorities 2020-2025' and then develop proposals for the required funded projects to deliver our objectives, to sustain maintenance of our capability and enable growth through investment and capital funded projects. This long-term outlook ensures we are always pushing forward the realms of science, integration and innovation, and that we deliver on our Charitable Objectives in the days and decades to come.

The first four goals of our Five-Year Strategy relate directly to different aspects of our primary purpose of advancing science for public benefit;

Goal 1
Undertake internationally excellent research and technology development to advance the frontiers of knowledge about the ocean

We deliver for the highest standards of research excellence and pride ourselves on our capabilities to observe, model and tackle challenges. Our current priorities are climate and the carbon cycle; coastal zone and shelf seas; sea floor resources and habitats; platform, sensor, model and data systems development. We work in partnership to do this, as well as inspiring and training the next generation of scientists to ensure there is a future for our community of innovative and leading researchers.

Goal 2
Create public benefit from all of the NOC's capabilities

We lead the UK marine science community and have a major part to play in influencing the international agenda. We are the trusted source for data, information, samples and advice to international partners and the UK Government to ensure policy is developed through evidence and independent advice. We support the delivery of the UN Sustainable Development Goals and the ambitions of the UN Decade of Ocean Science for Sustainable Development 2021-2030.

Goal 3
Successfully translate world-leading and innovative research and technology developments to achieve wider impact

We engage users of the ocean to understand the challenges and help shape new science questions. We work in partnership with businesses and other organisations to generate new products and services that benefit the public and those in marine industries.

3. Trustees' Report - incorporating the Strategic Report (continued)

3.3. Strategies for Ensuring Delivery of Objectives (continued)

Goal 4
Provide world-class underpinning capabilities that enable the UK and global ocean scientific endeavour

We operate two of the most advanced oceanographic research ships in the world as well as Europe's largest pool of marine science equipment and associated expertise available to support excellent scientific discovery. Our ocean observation capabilities mean we can explore and seek to understand previously inaccessible environments such as beneath the ice shelves of Antarctica. We can map, analyse and understand the sea floor and the ocean above through the most advanced artificial intelligence and expertise.

The remaining three goals enable those above.

Goal 5
Responsibly grow and diversify revenue to sustain our mission with a critical mass of scientific and technical capability

Goal 6
Transform the way the NOC is governed and operated

Goal 7
Invest and reinvest in the NOC and its people

3. Trustees' Report - incorporating the Strategic Report (continued)

3.4. Activities undertaken to achieve objectives

A series of interdisciplinary activities sit beneath each of these seven goals and their progress is reported on quarterly with qualitative and quantitative information against agreed Key Performance Indicators. The strategic goals are reviewed annually by the Trustees. An example of some of the achievements during the year are:

ADVANCE Demonstrate academic impact	282 papers published in high impact international scientific journals
SHARE Build awareness of our new brand and charitable status	Executive strategy 'Defining our Future 2020-2025' launched
INNOVATE Grow our Marine Robotics Innovation Centre	3 new memberships
ENABLE Champion a sustainable oceanographic research infrastructure	Secured £250k UKRI funding for scoping new methods of delivering oceanographic data collection via considering Net Zero Carbon
GROW Expand robotics programme nationally and internationally	New partnerships with Dstl, UKRI - Innovate UK, Lloyds Register and the EU
TRANSFORM Commit to higher moral and ethical standards, beyond mere legal compliance	Implemented Sustainability and Social Responsibility Strategy [see Section 3.7], Risk Management Framework, Enterprise Resource Planning system
PEOPLE AND CULTURE Support staff's physical, psychological, social and financial wellbeing	Implemented 'Working Well, Living Well' strategy

3. Trustees' Report - incorporating the Strategic Report (continued)

3.5. Equality, Diversity and Inclusion

We recognise that we cannot successfully achieve true public benefit or achieve our objectives for all without a strong and shared commitment to equality, diversity and inclusion (EDI). At the NOC we value individual differences and the rich diversity that this brings. We want to ensure that no-one is at a disadvantage or feels excluded because of who they are, what they believe in or the experiences that they bring. We have a moral responsibility to recognise and change behaviours within the NOC, our community and the wider world, to support this vision. As such the Executive and Board published this statement on our website:

We are committed to promoting equality, diversity and inclusion across our organisation and in our approach to working with others outside the organisation. As such, we aim to have a diverse workforce with colleagues from all backgrounds. We are committed to equality in the workplace and to unlocking the creative and innovative potential that comes from diversity so all our people feel valued and are able to perform at their best by being able to be themselves at work - so all are included and no one feels left out because of their race (including colour, nationality, ethnic or national origin), age, gender identity, religion and beliefs, disability, sexual orientation, social background, marriage and civil partnership, pregnancy and maternity. We will actively seek to avoid discrimination on the grounds of the above characteristics. The NOC does not, and will not, tolerate racism nor any other forms of prejudice and discrimination, that ultimately undermines the dignity and value either of its colleagues or anyone else.

Our commitments extend beyond our duties and requirements under the Equality Act. They are fundamental to who we are and why we exist. Through a dedicated and inclusive culture, strong human empathy, alongside the strength of our policies, procedures, expectations and ways of working, we continue to create a positive and supportive environment for everyone, allowing them in reaching their full potential and in bringing out their very best self.

NOC is committed to protecting the dignity of all its staff, its visitors and its partners, both in their work and their interactions with others. This includes providing a working and learning environment that is free from discrimination, bullying, harassment and victimisation. It should be noted that discrimination, bullying, harassment and victimisation do not only take place face to face, they may also occur in written communications, by email, or by phone.

We recognise and take seriously our duty of care to staff, understanding that inappropriate behaviour can result in stress and stress-related illness. All staff, and especially those who have responsibility for other members of staff, share this duty of care. We therefore expect all members of our community to treat each other with respect, courtesy and consideration. All staff have the right to expect professional behaviour from others and have a corresponding responsibility to behave professionally towards others.

3. Trustees' Report - incorporating the Strategic Report (continued)

3.5. Equality, Diversity and Inclusion (continued)

Employee involvement and employment of the disabled

Employees have been consulted on issues of concern to them by means of regular consultative committee and staff meetings and have been kept informed on specific matters directly by management. The Group and the Charity carries out exit interviews for all staff leaving the organisation and has adopted a procedure of upward feedback for senior management and the Trustees.

The Group and the Charity has implemented a number of detailed policies in relation to all aspects of personnel matters including:

- Equal opportunities policy
- Volunteers' policy
- Health & safety policy

In accordance with the Group and the Charity's equal opportunities policy, the Group and the Charity has long established fair employment practices in the recruitment, selection, retention and training of disabled staff.

Full details of these policies are available from the Charity's offices.

3.6. An Overview from our Director of Science and Technology

At the NOC we have a shared goal around driving continuous improvement in all we do, innovating delivery and being a learning organisation. Much of our work is about creating new insight, to help us truly understand the impact the ocean has on our lives – there is so much we still do not know and we really want to learn. The ocean is, on average, 4km deep and we have only explored part of it; it is estimated that we have only identified and classified about 10% of the species inhabiting our ocean, and have mapped only about a fifth of the sea floor. Our activity is about exploring the unknown and finding new ways and technologies to help that discovery; whilst ensuring we give open access to data and publish our findings.

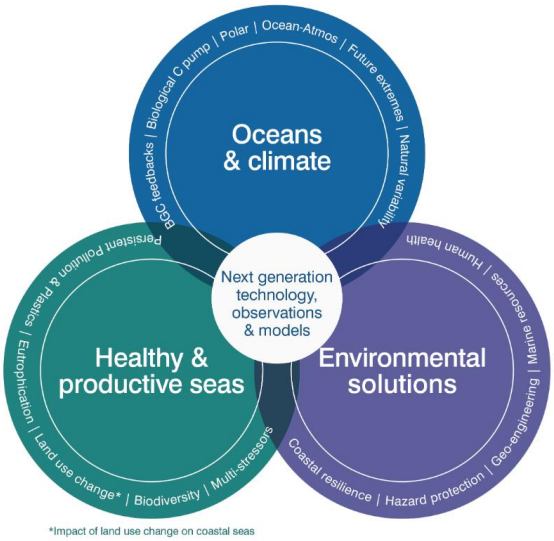
Our research makes a difference nationally and internationally. We can help people with weather forecasting, protecting coasts from hazards, and working out how to care for marine protected areas. The ocean is a shared responsibility so we work in a coordinated way with a range of countries, because none of us can possibly observe and manage the ocean alone. We work in partnership and at scale, from the base of the ocean to the coastline.

Together, we can not only efficiently and effectively observe the ocean but transform the ways in which we understand it. Some of these innovations include exploring more sustainable ways to carry out ocean going observations, new sensors and platforms, as well as ways of using satellites rather than taking samples using ships. Argo floats are a good example of how innovation can revolutionise our work – within 10 years of this technological advance, we had completed more deep profiles of the ocean than we had in over 100 years of ship-based measurements. In partnership, our large-scale global observations help us address really important questions like climate change and loss of biodiversity.

3. Trustees' Report - incorporating the Strategic Report (continued)

3.6. An Overview from our Director of Science and Technology (continued)

Working with the ocean means aiming for a strong sense of balance. We want to use the ocean's wide-ranging resources, but also maintain its health. It is a hugely important economically – vital for renewable energy, medicines, food and trade. But if we do not use it safely, there is a lot to lose, such as marine species, biodiversity, and endangered regions such as coral reefs.



There have been many highlights over the last year. Throughout 'lockdown', our scientists kept working, bringing in new grants and getting exciting papers published. We have focused on what we can do, not what we can't do. We have produced work on climate change; fed into the G7 and the United Nations Decade of Ocean Science planning; and we are planning for some large-scale research programmes. We are looking at how we take our large-scale observations into the coastal environment, so we can help people who live in coastal communities to manage hazards, resources, and look after their area, giving them tools and new technology. This is so important to the NOC – we are living and breathing what we know and talk about, sharing that knowledge and expertise to make a real difference to lots of people.

I am really proud that some of our fantastic early/mid-career researchers have been awarded prestigious fellowships. We feel very lucky to have such exciting young scientists working at the NOC and are committed to supporting people in their professional development. Our job is about enabling scientists; by having the strategic vision to create opportunities for them. My aim is for our scientists and researchers to thrive by doing what they love.

Next year is not just about the science we do, but how we use some big opportunities to really engage with people and Government to help them realise the importance of the ocean. Next year sees the launch of the UN Decade of Ocean Science and the UK having the G7 presidency. I'm also excited about the global climate conference, COP26, which we will use to emphasise the vital role the ocean plays in our climate, absorbing heat and carbon dioxide. People are concerned about climate change; the loss of biodiversity; plastic pollution. What we do matters.

Professor Angela Hatton
Chief Scientist

3. Trustees' Report - incorporating the Strategic Report (continued)

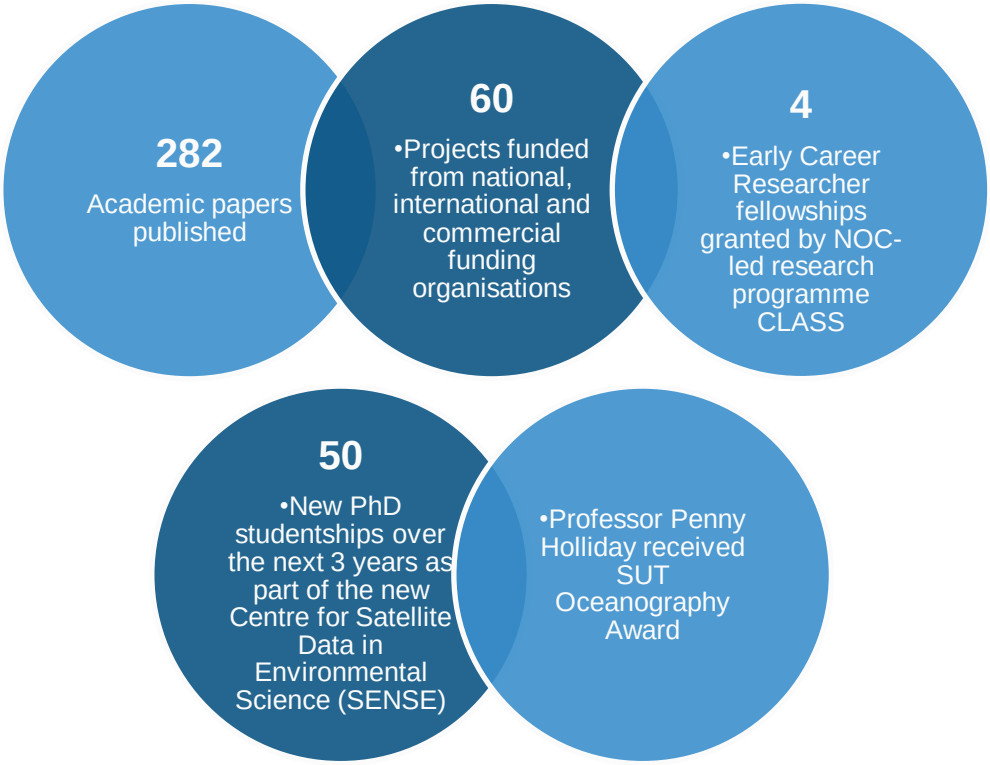
3.7. Key Achievement and Performance

To progress our Five-year Strategy, we have undertaken significant work in each of the seven goals. Much has been highlighted previously by our Chief Executive and Director of Science and Technology but here we outline measurable impacts from 2019-20 and our future plans.

Goal 1: Advance

Undertake internationally excellent research and technology development to advance the frontiers of knowledge about the ocean

The first year of independence for the NOC has been a very successful year for the interdisciplinary science, engineering, technology and support collaborations at the heart of the NOC. These powerful partnerships allow us to deliver world class science that has impact judged by the high number of papers published in high impact international scientific journals, and in terms of converting our scientific knowledge into measurable impact for society, both on a national level and an international level. This year we advanced our understanding of the most pressing issues facing humankind, including micro plastics, climate change and deep-sea mining. In 2019-20:



3. Trustees' Report - incorporating the Strategic Report (continued)

3.7. Key Achievement and Performance (continued)

In focus, projects from 2019-20

Plastic Ocean
Mike Clare a NOC expert in deep sea currents and mass transfer showed that hotspots of high micro plastic pollution exists on the seafloor, transported there by deep sea currents. This could in part explain why we are unable to account for most of the plastic we have put into the ocean. In linked work, Mike and others found that these deep-sea currents were not only a transport mechanism, but the associated mass movement was able to bury plastics in the deep ocean. Work by one of our Early Career Researchers, Dr. Katsia Pabortsava, demonstrated that we had grossly underestimated the amount of plastic waste that was in the ocean. Finding the plastic is one issue, showing the harm that it does is another. Dr. Alice Horton, another Early Career Researcher has determined that even remote ecosystems are vulnerable to plastic pollution and may be even more sensitive than other environments.

Climate Change
We continue to publish widely in the arena of the science related to climate change and its increasing impacts on the oceans and ultimately mankind. Current work has highlighted how the increasing ice melt is impacting ocean circulation, and how the changing climate is affecting coastal communities through storm surges and sea level rise. Linked to this we are actively investigating how we may apply technological approaches to mitigate rising Co2 (carbon dioxide), for instance through carbon capture and storage and farming adaptations, including how we can use advanced modelling methods to study the migration of fluids deep below the ocean floor to increase our ability to monitor storage reservoirs offshore.

Academic Impact
We have had a great year for publications, NOC scientists have had papers published in all the major high impact journals, including Nature, Science and Proceedings of the National Academy of Sciences of the United States of America (PNAS). We continue to publish ground-breaking work in all the specialist journals. Early Career Research grants and PhD fellowships allow us to support and train the next generation of researchers that will continue this world-leading legacy.

Expert Influence
Our staff continue to be called upon to provide expert advice to the Government and international expert bodies. Dr Stephanie Henson is a Lead Author on the Intergovernmental Panel on Climate Change's (IPCC) 6th Assessment report for WGI on the chapter "Carbon and other biogeochemical cycles and feedbacks". She is also a Contributing Author on the WGII report on the chapter "Ocean and coastal ecosystems and their services".

Several NOC scientists contributed to the Marine Climate Change Impacts Partnership (MCCIP) 2020 Report Card and we are the highest-represented organisation (13 named staff, alongside the Centre for Environment, Fisheries and Aquaculture Science (CEFAS), also 13). Examples of NOC-authored evidence contributions include:

Matthew Palmer
http://www.mccip.org.uk/media/2005/02_oxygen_2020.pdf

Kevin Horsburgh
http://www.mccip.org.uk/media/2009/06_sea_level_rise_2020.pdf

3. Trustees' Report - incorporating the Strategic Report (continued)

3.7. Key Achievement and Performance (continued)

International partnerships

Dr Ekaterina Popova led the SOLSTICE project that fed into the negotiations of UNCLOS (UN Convention on the Law of the Sea) on Areas Beyond National Jurisdiction (ABNJ). The SOLSTICE project, funded by the GCRF, has been widely lauded as a great example of natural scientists working together with social scientists and economists to better understand the importance the oceans have on coastal communities in the Western Indian Ocean. The project has produced an innovative MOOC (Massive Open Online Course) exploring these issues in the region which attracted more than 2500 learners from 110 countries. MOOC represents one of the lasting project legacies which will support and enable the education and training of future generations of scientists in the Western Indian Ocean region, as well as around the world.

Through our work in the Commonwealth Marine Economise (CME) programme we have been widely engaging with island states across the globe, increasing knowledge exchange and building capacity, both intellectual through training courses, and physical through the roll out of monitoring equipment to address global challenges such as ocean acidification, sea level rise and coastal eutrophication. We have worked for instance in the British Virgin Islands on developing a marine planning approach to support that nation's Blue Economy.

Deep-sea mining

Scientists still have a lot to learn about the deep-sea environment. The European Commission is engaged in a variety of studies and projects aimed at understanding the benefits, risks and knowledge gaps with this type of mining. We are working with national and international partners to ensure that these developments are informed by scientific evidence and minimise disruption to the seabed. The NOC has been influential in the development of national and international regulations for the safer exploitation of minerals in areas beyond national jurisdiction (governed by the International Seabed Authority – ISA), as well as capacity building in developing economies.

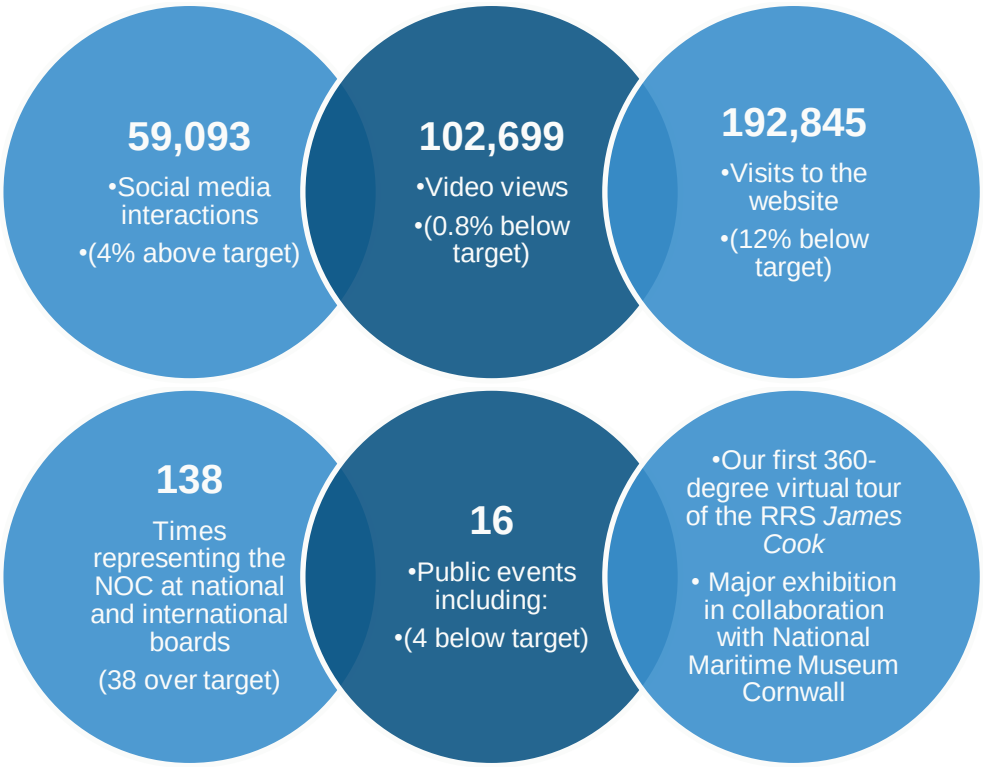
3. Trustees' Report - incorporating the Strategic Report (continued)

3.7. Key Achievement and Performance (continued)

Goal 2: Share

Create public benefit from all our capabilities

We recognise that there is only one ocean and to get the best from it, we have to work together globally through sharing knowledge and encouraging education. With education and ocean literacy as our charitable objective, this goal was particularly critical across all our strategic planning this year. We aimed to not only grow interactions with our public audience but foster new and lasting international partnerships with other oceanographic institutions, as well as other marine and climate organisations in the UK. In 2019-20:



3. Trustees' Report - incorporating the Strategic Report (continued)

3.7. Key Achievement and Performance (continued)

In focus, projects from 2019-20

Brand building
This year we have been looking at how we translate our complex science so people understand its impact on humankind. We have been talking to our own people and our stakeholders about what we stand for at the NOC and how we can best serve our local, national and international communities through the best research, the newest innovations and the soundest advice. At the end of this year we launched our refreshed website to reflect this feedback, as well as the changes in our governance, to bring our knowledge directly to our beneficiaries. Whilst we saw website visits and video views drop below our annual target, as we froze content to focus on this change over, we hope our efforts to make it more accessible (e.g., ALT text on photos, subtitled videos) will exceed targets next year.

Leading the way
Over the year, we provided leadership for the UK community in both advising our Government and devolved administrations and representing the UK in the global arena. We offer scientific expertise and trusted information to a wide range of partners so we can all work together for the good of the ocean and those who rely on it. Early in the year we contributed to a new European Marine Board (EMB) Position Paper which provided an overview of the current European research vessel fleet and its capabilities and recommended ways in which it should evolve to meet future science needs.

Inspiring others
As a charity, we recognise we need to do more outside the science and political communities that have been our home. We have been making every effort to organise more public engagement activities, so people in our communities understand more about the ocean. We also aim to inspire young people to become more involved in ocean issues, as aspiring oceanographers of the future. In the last year, we attended science festival and school events, and increased our digital engagement to broaden our reach to new audiences. When the research ships are overseas, we invite local groups to come and see our amazing facilities. This year we were able to visit Canada and Chile before going into lockdown. However, our targets for engagement across business, government and the public have been negatively impacted by COVID-19 as we adjust to more online engagement.

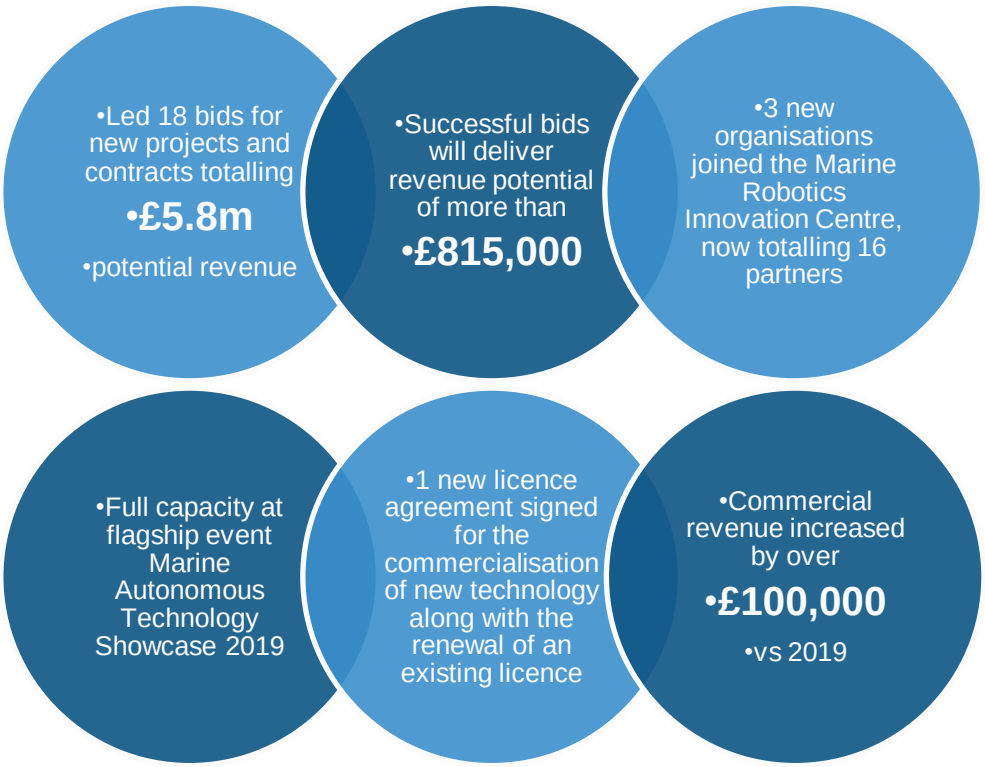
3. Trustees' Report - incorporating the Strategic Report (continued)

3.7. Key Achievement and Performance (continued)

Goal 3: Innovate

Successfully translate world-leading and innovation research and technology developments to achieve wider impact

It has been a successful year for our business development as we continue to diversify our income streams in line with our new corporate governance. We have adapted very well to different working practices to ensure that our teams remain safe during the pandemic and can continue to further our engagement with the marine industry. Whilst we have not physically hosted all our planned events, we have embraced new virtual platforms and have remained close to our industry partners through our growing Marine Robotics Innovation Centre. In 2019-20:



In focus, projects from 2019-20

Software Platforms

2020 was a significant year for the development in our existing ocean and tidal modelling suite of software platforms. We grew our software scope by incorporating global data, which enabled us to cover a truly global picture to users and took major steps in the development of offering cloud-based software portals and API services to further complement our existing platforms. This has given us a sound platform to grow our customer base which now stands at 270 users from a diverse range of sectors.

3. Trustees' Report - incorporating the Strategic Report (continued)

3.7. Key Achievement and Performance (continued)

Marine Robotics Innovation Centre
Membership of our Marine Robotics Innovation Centre continued to grow this year with three new organisations joining. The breadth of experience and capabilities of our members demonstrates the increasing value of this centre in driving innovation in marine engineering and technology in the UK and beyond.

Events and Industry Groups
Despite the impact of COVID-19 on physical events over the last nine months we have adapted well and moved as many events as possible to virtual platforms. At the end of 2019 we held our annual Marine Autonomous Technology Show which was a great success. We had record numbers of registered delegates with over 300 in attendance, 36 exhibitors and 45 abstracts submitted. Furthermore, our membership on marine industry and related industry committees continues to grow with NOC business development representation on six committees and professional forums.

Goal 4: Enable

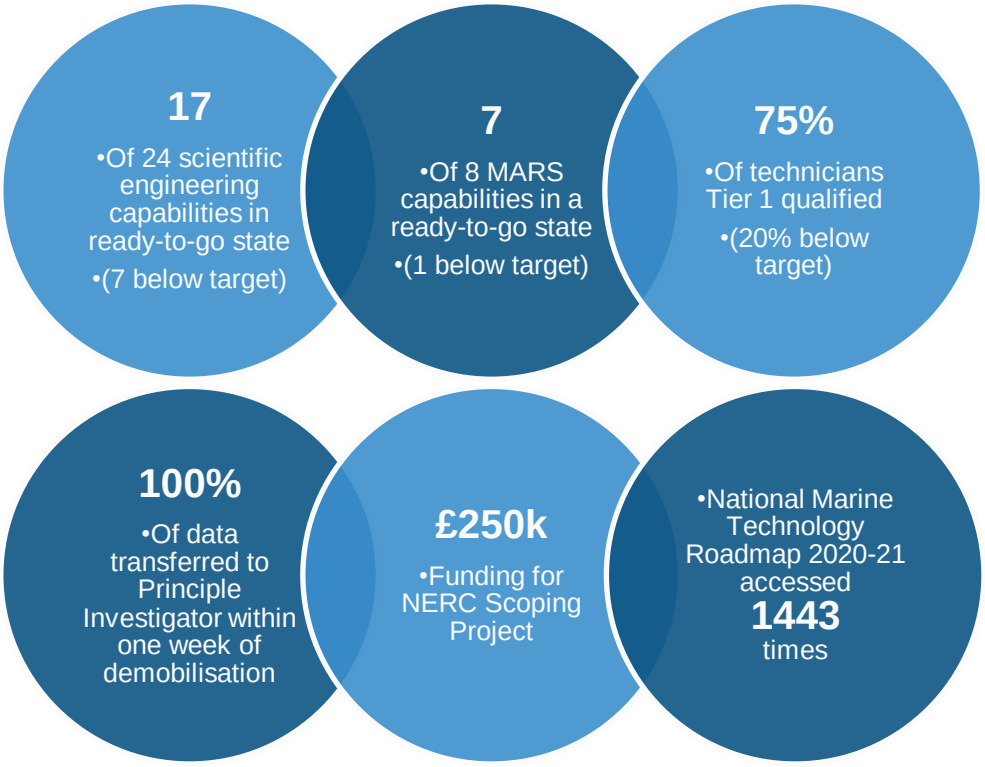
Provide world-class underpinning capabilities that enable the UK and global ocean scientific endeavour

On behalf of the UK's science community we manage and operate two world class research ships and the National Marine Equipment Pool (NMEP). We're also home to the British Oceanographic Sediment Core Research Facility (BOSCORF) and the British Oceanographic Data Centre (BODC). This year these facilities have been hard struck by COVID-19, but our staff have shown exceptional commitment in the face of closed workshops, offices and berthed ships. Expeditions were suspended while we developed and ensured Covid-safe working conditions. This impacted on the maintenance of NMEP equipment and training of staff which is reflected in the 2019-20 outcomes below. The majority of engineering capabilities assessed as not 'ready-to-go' are associated with marine geophysics and there are actions in hand to address this in 2020-21.

3. Trustees' Report - incorporating the Strategic Report (continued)

3.7. Key Achievement and Performance (continued)

In 2019-20:



In focus, NMEP success from 2019-20

RRS *James Cook*

The *James Cook* completed a commissioned-research expedition for the Canadian Department of Fisheries and Oceans in November before passaging south to Florida and picking up a transect along the 24N line of latitude.

This expedition (part of the long-term RAPID project led by the NOC) set out to measure one of the world's largest systems of ocean currents, the Atlantic Meridional Overturning Circulation (AMOC). Whilst the initial project began in 2004 it continues to evolve with each expedition by using and supporting innovative technology to understand the natural variation of the ocean and climate system and its impact on weather.

Since the lifting of the first lockdown and the resumption of activities, the *James Cook* completed her annual refit and conducted a research expedition off the coast of West Africa as planned.

3. Trustees' Report - incorporating the Strategic Report (continued)

3.7. Key Achievement and Performance (continued)

RRS *Discovery*

The 'CUSTARD' expedition set sail on RRS *Discovery* over Christmas 2019 to study the seasonal growth of tiny marine plants called phytoplankton and their impact upon the storage of carbon in the ocean. This research project was led by NOC scientist Dr Adrian Martin and is part of a programme of research exploring the role of the Southern Ocean in the earth system.

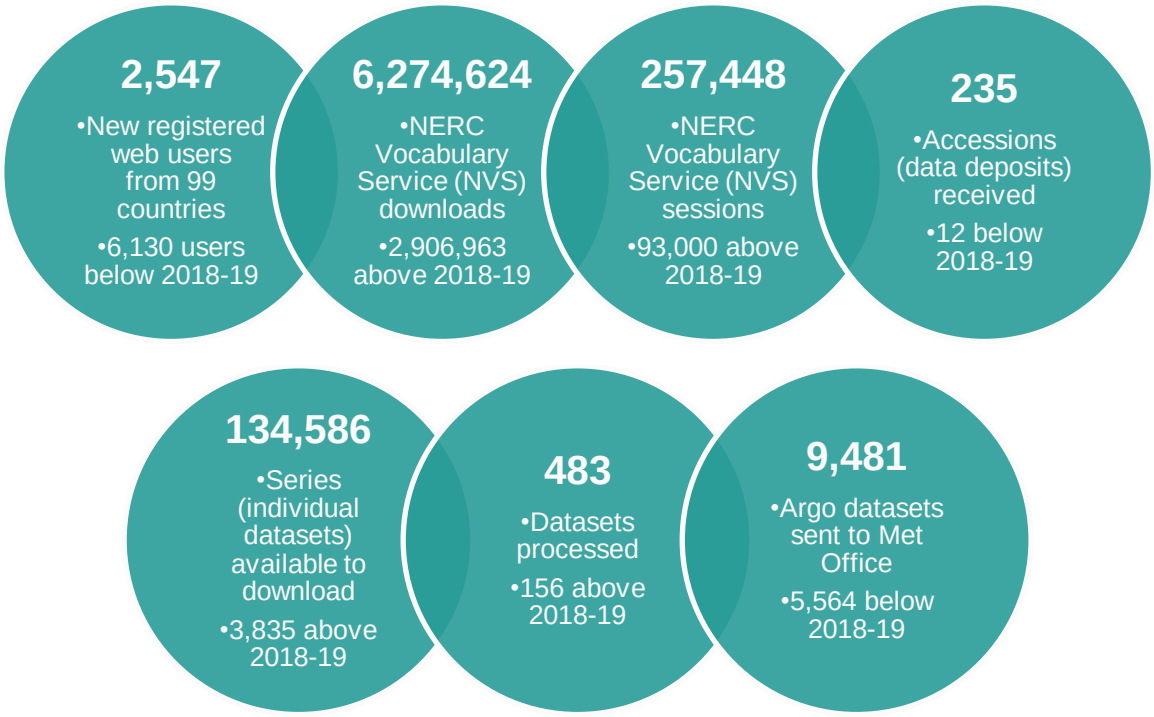
In February the 'ORCHESTRA' expedition completed 104 casts measuring conductivity, temperature and depth along three sides of the Scotia Sea and into the Weddell Sea, as well as the first hydrographic survey in the western arm of Cumberland Bay, South Georgia. This is part of a 5-year research programme led by the British Antarctic Survey with NOC scientists playing key roles in the measurement and modelling elements.

Upon resumption of the programme the *Discovery* completed her annual refit before resuming scientific research expeditions.

National Marine Equipment Pool

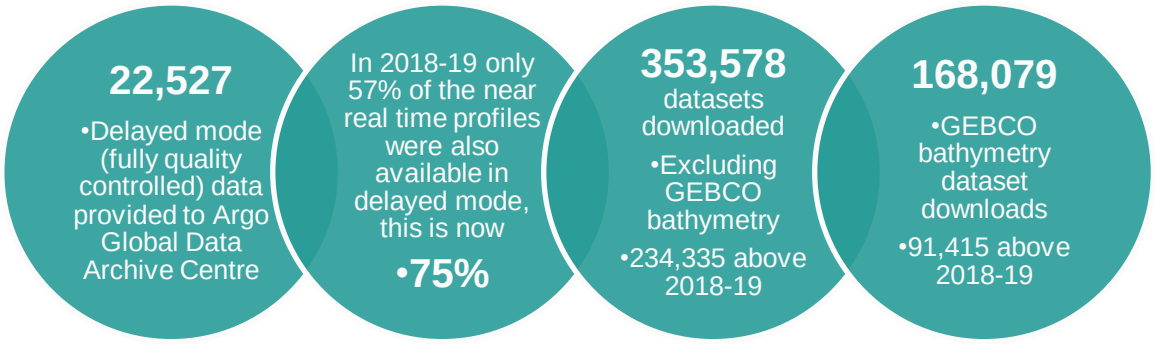
While the ships are the most obvious part of the NMEP it also provides a full suite of equipment, maintained and operated by 50 ocean-going technicians, to enable global oceanographic research. This resource is available to the whole UK marine research community as well as international partners. Targets to have 95% of the NMEP in a ready-to-go state and getting 95% of technicians trained to Tier 1 were unachievable due to the COVID-19 conditions which postponed much of the NMEP programme. However, shore-launched, glider missions did continue throughout COVID-19 thanks to our partnership with the Scottish Association of Marine Science.

BODC success from 2019-20



3. Trustees' Report - incorporating the Strategic Report (continued)

3.7. Key Achievement and Performance (continued)



NERC Vocabulary Service

The NVS is a flagship product managed and developed by BODC, which was adopted by the Argo programme this year to provide controlled vocabularies for processing and describing their data. We are proud the quality of our product made it the number one choice for this international collaboration and is a major step forward in providing interoperability for the Argo data.

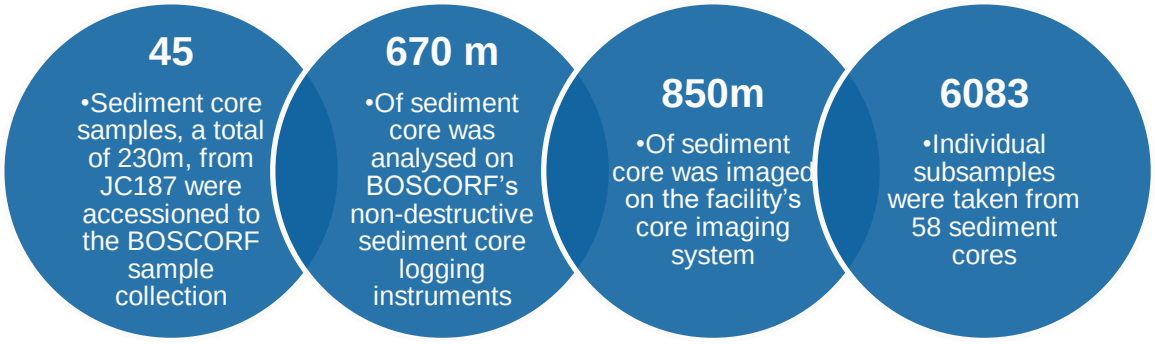
Data dissemination

In September 2020, BODC released the first sample datasets through their new operational 'ERDDAP' service, providing web access to these data for the first time. This service allows direct download of data catalogued on the Marine Environmental Data and Information Network (MEDIN) portal, as well as online visualisation and sub setting of required parameters. This will now become a standard route for dissemination of new samples data ingested at BODC, an innovating way forward for easy data sharing.

GEBCO impact

As users are no longer required to register to download the General Bathymetric Chart of the Oceans (GEBCO) data we saw a drop in our web users. However, GEBCO is also one of our major highlights of the year. The 10-fold increase in the access of data subsets from GEBCO products is largely due to the introduction of the hugely successful download application developed at BODC. Launched in November 2019 it allows subsets of data to be selected in a variety of formats.

BOSCORF success in 2019-20



3. Trustees' Report - incorporating the Strategic Report (continued)

3.7. Key Achievement and Performance (continued)

Training and project support
Two formal training courses on sediment core processing and logging techniques were delivered to 14 unique facility users during this reporting year. In addition, informal training and project support was delivered to a further 60 facility users.

Outreach and further engagement
BOSCORF has participated in a number of outreach and public engagement activities including the delivery of undergraduate-level training days at the University of Hull and King's College London, the Girls into Geoscience virtual event, numerous talks at universities, and regular tours of the facility to NOC visitors.

New equipment
A new XRF (X-ray fluorescence) system provides instant geochemical compositions, including rare-earth elements (REEs), of hand specimens and sediment cores at sea and in the laboratory. This is a new science community asset to be utilised by NOC's National Marine Facilities (NMF) and BOSCORF's diverse user base within the environmental sciences.

3. Trustees' Report - incorporating the Strategic Report (continued)

3.7. Key Achievement and Performance (continued)

Goal 5: Grow and Diversify

Responsibly grow and diversify revenue to sustain our mission with a critical mass of scientific and technical capability

We recognise that as a new independent organisation, we need to consider new ways of funding our critical work. One of the benefits in doing this is that we can develop new partnerships, which benefit the ocean and ensure the NOC is sustainable too.

In focus, projects from 2019-20

Ships and robots
The ships we operate supported research expeditions for organisations like fisheries bodies (CEFAS and Fisheries and Oceans Canada (DFO)), as well as the British Antarctic Survey and the EU STEMM-CCS programme. Our robotics programme attracted a wide range of partners including Dstl, Innovate UK, Lloyds Register and the EU.

Trading Subsidiary
Our NOC Innovations Ltd trading subsidiary has been affected by the challenges of COVID-19, especially in the events function, which normally brings in a small level of revenue. However, this has been counter-balanced by welcoming new members to our Innovation Centre, a shared space where like-minded businesses can share ideas, skills and expertise, carrying out innovative collaboration projects.

Offshore Energy
An area where we aimed to expand our work is in the offshore energy sector, in both wind power and sub sea oil and gas infrastructure. One such area is the use of our Auto-sub Long Range where we engaged with one oil company in utilising the technology for pipeline surveys, as it offers a significantly reduced cost over traditional method, is safer, and is largely carbon neutral. We will be pursuing this opportunity in 2021.

3. Trustees' Report - incorporating the Strategic Report (continued)

3.7. Key Achievement and Performance (continued)

Goal 6: Governance

Transform the way that NOC is governed and operated

We have made great steps on our journey to transform the way in which we are operated and governed. Over the past year we have successfully transitioned from an organisation led by government to become an independent charity.

In focus, projects from 2019-20

Trustees

Our Board of Trustees have been inducted to the NOC and have supported the organisation in setting and affirming our direction through our new strategy. We have successfully implemented new governance, audit and assurance frameworks, that ensure that not only are we are legally compliant but that we work in sustainable and transparent ways.

Support

The NOC has embarked on a transformation programme of the Corporate Business Support division, aimed at improving the service provision but also improving its adaptability to meet the ongoing future needs of the organisation. This transformation programme has resulted in a number of new corporate initiatives and strategies, with a number to follow next year, all aimed at improving our efficiency and effectiveness. We have successfully established new service functions for the NOC such as procurement and payroll support.

Policy

During our first 12 months operating we have put considerable effort into creating a new policy framework to support improved operations but also enable clear roles and responsibilities. We continue to keep this under review and are always keen to take feedback as to how we improve our approaches and ensure that we continue to learn from the feedback we receive.

3. Trustees' Report - incorporating the Strategic Report (continued)

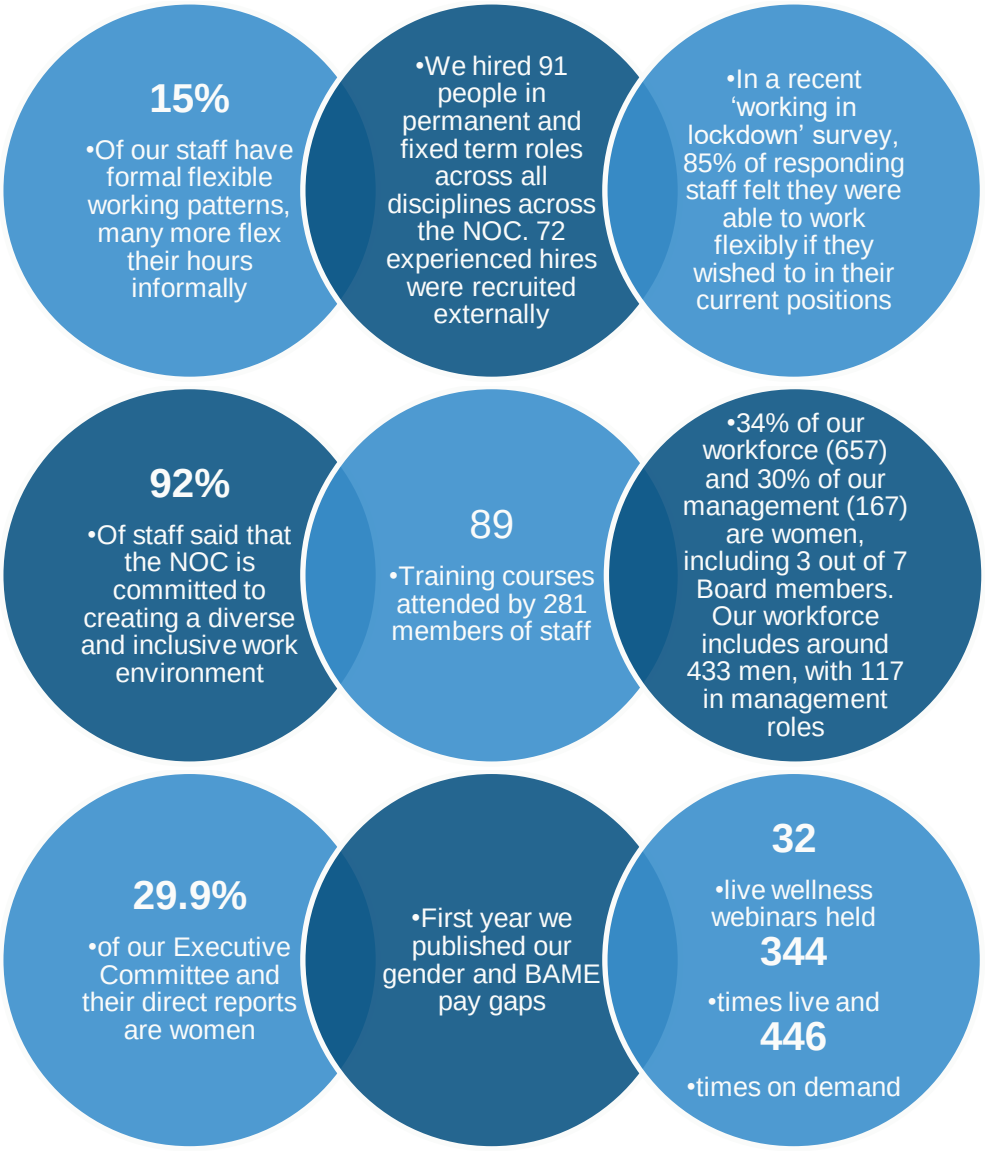
3.7. Key Achievement and Performance (continued)

Goal 7: People and culture

Invest and reinvest in the NOC and our people

Our 657 colleagues embody the passion and values at the heart of everything we do. Working internationally from two UK offices and two Royal Research Ships, they represent a wide variety of backgrounds and interdisciplinary professions — including, but not limited to, scientists, mariners, engineers, software developers, and professional support staff. We believe a diverse and talented workforce, who feel inspired by our mission and values, is key to long term corporate success and personal prosperity. To ensure this we invest and reinvest in their development, progression and wellbeing.

In 2019-20:



3. Trustees' Report - incorporating the Strategic Report (continued)

3.7. Key Achievement and Performance (continued)

Sustainability and Social Investment

During our first year operating as a charity we have developed a Sustainability and Social Responsibility strategy; this builds upon the great work we had previously undertaken as a government organisation. Charities bear an extra responsibility to be sensitive to social, cultural and environmental aspects of their operations, with an emphasis on higher moral and ethical standards, beyond mere legal compliance. By continuing to commit to sustainability and social responsibility we are making a considered and deliberate inclusion of employee, stakeholder and public interest into corporate decision making that exceeds the statutory obligations to comply with legislation.

Our new sustainability strategy identifies five critical imperatives aimed at:

- Our people
- Our community
- Our environment
- Our business operations
- Our research ethics

Our sustainability commitments will enable responsible decision-making processes and give us confidence that we are putting social responsibility into practice and integrating it throughout the organisation. A key aspect of this is understanding and recognising the importance of stakeholder relationships, and being aware of the social responsibility across our entire sphere of influence.

Our People

Focusing on our employee relationship as well as their health and wellbeing

Our People & Culture Strategy 2020-25 commits us to high standards of employee engagement, making employee wellbeing a priority and ensuring the that our people work in an environment that respects and appropriately rewards them.

Outputs

During 2019-20 we have:

- Supported our staff through the creation of a new wellbeing strategy and provided online wellbeing resources, webinars and toolkits to support staff during the COVID-19 crisis. Developed a management and developing leadership programme that will be rolled out across the NOC during 2020-21.

3. Trustees' Report - incorporating the Strategic Report (continued)

3.7. Key Achievement and Performance (continued)

Our Community

Developing excellent relationships with our stakeholders, partners and community

We commit to high standards of social responsibility through relationships with our external and internal partners and stakeholders. Our communication strategy will act as an anchor to ensure we play an active part in our community.

Outputs

During 2019-20 we have:

- Reviewed and updated our stakeholder engagement committee to ensure they have the correct avenues to input to our organisation.
- Hosted 16 community events hoping to inspire and educate future scientists, engineers and mariners.

Our Business Operations

Being a well governed organisation with effective business operations

We commit to having fair operating practices that are well governed and encourage, where possible, social responsibility throughout all our value chains.

Outputs

During 2019-20 we have:

- Developed and implemented a new governance framework that has included redrafting new NOC Policies, a new delegation framework and new committee structure, enabling improved internal controls, effective decision making and good practice for operations with clear roles and responsibilities.
- Introduction of a new ethical decision-making framework that will provide transparency and consistency across our business.

Our research Ethics

Building trust and confidence in our academic integrity

As an organisation we are committed to ensuring our stakeholders will have trust and confidence in all our results, the methods used and the processes by which these results were obtained. We will commit to ensuring that there is trust and confidence in the academic integrity of those who undertake our research

3. Trustees' Report - incorporating the Strategic Report (continued)

3.7. Key Achievement and Performance (continued)

Outputs
During 2019-20 we have:

- Developed new research integrity and safeguarding policies for the NOC to promote and support scientific quality and assurance

Our Environment

Excellent environmental awareness and best practice throughout all our activities

We are committed to the prevention of pollution and the protection of the environment. We will demonstrate continuous improvement of our environmental management and performance through regular setting and reviewing of objectives and targets.

Outputs
During 2019-20 we have:

- Successfully retained our ISO 14001 accreditation for Environmental Management.
- Committed to operating our vessels to a Ship Energy Efficiency Management Plan, in line with IMO guidelines.
- Reduced resource use - Greenhouse Gas emissions, waste production and transport (mileage) were all reduced during Quarter 3 and Quarter 4. Read more about these figures in Section 3.9 (SECR).
- Provided Institute of Environmental Management & Assessment (IEMA) Environmental training twice a year for all staff to ensure they are aware of and competent to control the environmental impact of their activities.
- Implemented a travel plan that informs and encourages staff, students and visitors to consider their travel options for both commuting and business travel.
- Promoted the benefits of wildlife conservation and enhancement of biodiversity onsite through the creation of a wildlife meadow, and in partnership with The Woodland Trust provided staff with tree saplings during National Tree Week.
- Installed water fountains on RRS *Discovery* and RRS *James Cook* which will replace over 16,000 1.5ltr plastic bottles in their first 14 months of operation

3. Trustees' Report - incorporating the Strategic Report (continued)

3.8. Section 172 Statement

NOC Board of Trustees have acted in the way they consider to be in good faith, would be most likely to promote the success of the company for the benefit of its members as a whole, and in doing so have regard to the matters set out in s172(1)(a-f) of the Act, in the decisions taken during the year.

The Board of Trustees are briefed on their legal duties as part of their induction and are able to seek further advice from the Company Secretary, Head of Legal or access external independent advice if required.

STRATEGY AND CONSIDERATION OF THE CONSEQUENCE OF LONG-TERM DECISIONS

Our main mission as the NOC is to make sense of changing seas, on which future human prosperity and wellbeing depend. Throughout the year, decisions and considerations at board meetings have been linked to how NOC meet their strategic objectives and how NOC can build and develop further to the environment around and in turn, contribute further to achieving public benefit. NOC launched our five-year strategy 'Defining our Future' which aims to preserve the very best of what we do and grow our work. Decisions are underpinned via a Business plan to ensure consideration is given to future strategic direction, and a full budget signed off by the board to ensure budgetary controls and funding targets. Budgets are built from funded projects and forecasts across the 5 years are formulated based on historic information on success rates at wining research funding, as well as being informed by the pipeline, alongside market research on future areas of growth. A focus of this year's board has been developing forward planning, mapping of strategic partnerships and consideration of impact on NOC's beneficiaries, as well as development of performance indicators to further understand if the decisions and activity undertaken are achieving NOC's intended purpose, and the long term intentions to promote the success of NOC and benefit the community, environment and people.

HIGH STANDARDS AND BUSINESS CONDUCT

NOC's intention is to promote our reputation, through the delivery of our strategy, that reflects responsible behaviour and maintains high standards of business conduct. NOC has Ethics and Research Integrity policies which are annually reviewed by the Board and NOC's Audit and Risk Committee regularly consider Whistleblowing, Fraud and Bribery policies and issues. Through wide discussion across all levels of the NOC, we have reached consensus on our own shared NOC values which all members of the organisation are asked to uphold. These are guiding not just what we do, but how we do it and how we make decisions and recognise the need to act fairly between all members of the organisation. NOC are also committed to following the Seven Principles of Public Life.

GOVERNANCE AND RISK MANAGEMENT

Due to the size of the organisation, the Trustees fulfil their duties partly through a full governance and delegation framework that delegates day to day decision making to the Executive team at NOC. This year, the Board have developed and endorsed a new governance, delegation and risk management framework for NOC.

3. Trustees' Report - incorporating the Strategic Report (continued)

3.8. Section 172 Statement (continued)

OUR PEOPLE

As a Values-driven charity the directors give great care and regard to developing and maintaining good employee engagement and recognise our people are fundamental to the delivery of the NOC Strategy. There are many procedures and practices which actively seek to involve staff in decision making and empower them to own delivery of our strategic goals wherever they may work across the organisation. This 'one NOC' approach supports all staff to freely partake in 'townhall' meetings, focus groups, committees, working groups and union representation. Through consideration of internal stakeholders in these forums, the directors have overseen an Equality, Diversity and Inclusion statement and contributed to a successful Investors in People midterm review. The Trustees also held a Question and Answer session for employees and have promoted and received feedback from employee engagement surveys.

RELATIONSHIPS WITH STAKEHOLDERS AND BENEFICIARIES

We actively engage with the academic, industry and government sectors, fostering old and new relationships so we can bring our work to wider audiences and succeed in our objectives. We are the hub of many marine networks. This provides us a position of authority and influence which the directors and NOC representatives navigate using our Values, Strategy and social investment policies). We are reciprocally informed, shaped and powered by collaborating through these stakeholder engagement opportunities when it brings benefits to the public and increases ocean literacy. The NOC Association of Marine National Capability Beneficiaries (NOCA) is a body established and constituted by NOC and is the primary vehicle for NOC's engagement with the beneficiaries of NOC-led marine science National Capability (NC) and is a means for obtaining assurance regarding the performance of NC delivery and effectiveness of engagement with beneficiaries. NOC also have other user engagement mechanisms, such as the Marine Facilities Advisory Board (MFAB) and the Cruise Programme Review Group (CPRG), and it is through these mechanisms NOC are able to obtain formal feedback from beneficiaries around some of the major areas of work we undertake. NOC also has two observers from these organisations that attend their Board meetings and sees the value of having observers to promote a two-way flow of information between the observer's organisation and the NOC and to represent the views of the scientific community and funders to be considered within decision making. This year the Board of Trustees have considered how to promote and develop relationships with strategic partners and been involved with development of an Engagement Strategy for NOC.

COMMUNITY AND THE ENVIRONMENT

NOC culture is built upon its values and protecting the environment and having positive community impact. This year the Trustees have endorsed a Sustainability and Social Responsibility approach and strategy. Sustainability & Social Responsibility 2020-2025 will enable responsible decision-making processes and give us confidence that we are putting social responsibility into practice and integrating it throughout the organisation. The strategy demonstrates our commitment to continuous improvement of our environmental management and performance through regular setting and reviewing of objectives and targets to meet the Environment ISO standard and encourages openness and transparency of any imprint on the environment that we may leave. By making a strategic commitment to SSR, we will ensure that we are working to the highest standards that not only benefit our community but our organisation. Our communication strategy will act as anchor to ensure we hear the voice of our community.

3. Trustees' Report - incorporating the Strategic Report (continued)

3.9. Streamlined Energy and Carbon Reporting (SECR)

Environmental Responsibility is one of the NOC's six core Values, and 'Excellent environmental awareness and best practice' is built into our Sustainability and Social Responsibility strategy. To ensure our energy and carbon impact aligned with our beliefs and ambition we undertook the following initiatives to bring down our Greenhouse Gas emissions, waste production and transport (mileage) throughout 2019-20: The total CO2e, based on figures in Table 2, was 4,888.56 tonnes, at an intensity ratio of 0.09 (tCO2e/m2) and 90.47 (kgCO2e/m2).

NOC's annual quantity of emissions in tonnes of carbon dioxide equivalent from activities for which the company is responsible involving the combustion of gas was 1,030 tonnes CO2e and for the consumption of fuel for transport was 2,332.57 tonnes CO2e. In addition, the annual quantity of emissions in tCO2e from the purchase of electricity by the company for its own use was 1,1477 tonnes CO2e.

Annual quantity of emissions in tCO2e from the purchase of electricity by the company for its own use was 1,1477 tonnes CO2e.

The annual quantity of energy consumed from activities for which the company is responsible, for the combustion of gas was 5,603,000 kWh and for the consumption of fuel for the purposes of transport in vehicle fuel was 108,290.6 kWh and ship fuel was 8,244,911kWh.

The annual quantity of energy consumed resulting from the purchase of electricity by the company for its own use, including for the purposes of transport in kwh was 5,328,000 kWh.

The following methodologies were used to calculate the information disclosed for both emissions and energy data;

Energy data has been collected through our metering system (Stark), and converted into CO2e using UK Government GHG Conversion Factors for company reporting. Ship fuel data is reported by ship Captains and converted to CO2e using Carbon conversion factors for Marine Gas Oil. Transport data was compiled by collecting mileage data from or car hire provider and our staff claims for fuel expenses. This was converted to CO2e using the assumptions of: medium sized car, unknown fuel type, Fuel cost 117p/l, 5.25 l/100km, and the UK Government GHG Conversion Factors for company reporting.

Greenhouse Gas Emissions
We improved our solar array in Southampton by servicing 544 existing panels and adding 244 new panels. This means self-generated solar energy is expected to provide around 3.9% of our total annual energy consumption (previously 2.5% in 2019) from September 2020.

A full replacement of the solar thermal installation in Southampton, which supplies the hot water to the workshop shower facilities, was also undertaken, as it had come to the end of its economic life.

We are on a 100% green tariff, reducing the Carbon impact of our purchased electricity.

Energy use was slightly decreased during Quarter 3 and Quarter 4 due to partial shutdown of the Southampton site, and closure of the Liverpool building.

3. Trustees' Report - incorporating the Strategic Report (continued)

3.9. Streamlined Energy and Carbon Reporting (SECR) (continued)

Waste

Waste production was slightly decreased during Quarter 3 and Quarter 4 due to partial shutdown of the Southampton site, and closure of the Liverpool building.

Transport

The use of hire cars and our owned fleet reduced during Quarter 3 and Quarter 4 owing to restrictions on travel, halting travel between the two sites, as well as to conferences and meetings. Mileage data is unavailable for this report. As such, reasonable assumptions have been made on the mileage data based on information from the BEIS fuel cost data.

**Our new 5-year energy and waste reduction targets will come in to place from 2021 and in light of COVID-19, the baseline will be 2019, not 2020.*

3. Trustees' Report - incorporating the Strategic Report (continued)

3.9. Streamlined Energy and Carbon Reporting (SECR) (continued)

Table 1: Scope/ emission/ energy use

	Southampton	Liverpool	Total
Energy Consumption used to calculate emissions: /mWh	4,953.00	375.00	5,328.00
Emissions from purchased electricity (Scope 2, location-based) tCO2e	1,373.00	104.00	1,477.00
Gas Consumption used to calculate emissions: /mWh	5,603.00	-	5,603.00
Emissions from combustion of gas tCO2e (scope 1)	1,030.00	-	1,030.00
Heat purchased for own use (CHP/District heating) mWh	-	119.50	119.50
Emissions from heat, steam and cooling purchased for own use (Scope 2) CHP/District heating tCO2e	-	22.60	22.60
Fuel used for transport purposes (L) Ships	-	-	816,500.00
Emissions from Combustion of fuel for transport purposes (scope 1) Ships tCO2e	-	-	2,266.11
Fuel used for transport purposes (L), Fleet vehicles	-	-	14,500.00
Gas used for transport purposes (tonnes), fleet vehicles	-	-	0.90
Emissions from Combustion of fuel for transport purposes (scope 1) Fleet Vehicles. tCO2e	-	-	39.56
Fuel used for business transport (L) Rental Cars	-	-	7,880.51
Emissions from business travel in rental cars (Scope 3) tCO2e	-	-	26.37
Fuel used for business transport (L) Employee owned vehicles	-	-	159.41
Emissions from employee-owned vehicles (Scope 3) tCO2e	-	-	0.53
Floor space (m2)	51,234.80	2,800.00	54,034.80
Intensity ratio (tcO2e/m2)	-	-	0.09
Intensity ration (kgCO2e/m2)	-	-	90.47

3. Trustees' Report - incorporating the Strategic Report (continued)

3.9. Streamlined Energy and Carbon Reporting (SECR) (continued)

Table 2: Additional Reporting

	Southampton	Liverpool	Total
Incinerated waste (tonnes)	26.98	-	26.90
Incinerated emissions (tCO2e)	0.58	-	0.58
Landfill (tonnes)	7.08	0.42	7.50
Landfill emissions (tCO2e)	3.24	0.19	3.43
Food Waste (tonnes)	2.37	-	2.37
Anaerobic digestion emissions (tCO2e)	0.02	-	0.02
Recycled (tonnes)	42.30	1.21	43.51
Recycled emissions (tCO2e)	0.90	0.03	0.93
Emissions from disposal of waste generated in operations for which the company does not own or control (Scope 3) / tCO2e	4.74	0.22	4.96

3. Trustees' Report - incorporating the Strategic Report (continued)

3.10. Financial Review

Results for the year

NOC was incorporated on 2 July 2018. There was no activity in the first year of account to 30 September 2019 and dormant company accounts were prepared. On 1 November 2019 NOC commenced its activities with a one-off capital grant of £23,646k which was received to fund the transfer of moveable assets from UKRI-NERC to NOC.

The results for the year ended 30 September 2020 are contained in this report. The net income for the year to 30 September 2020 amounted to £23,353k (2019: £nil), of which £17,541k relates to the residual depreciated capital grant for the initial transfer of assets. This income has been moved to a restricted reserve from which future year's depreciation of these assets will be met.

Principal Funding Sources

Income was derived principally from UKRI-NERC funding for research, the operation of research infrastructure, data management and services and facilities of £43.3m, UKRI funding to enable the transition of assets of £24.6m, £4.9m EU research funding, £2.4m Industrial Strategy Challenge funding and £2m donation to working capital.

Reserves policy

As part of UKRI, the NOC had not previously been able to build and hold a reserve. It has relied upon direct funding to enable change and application for extra funding for investment in new capability and when unexpected events occur, as well as prudent in year budgeting. However, now the NOC is an independent charity we have developed a NOC Reserves Policy.

The NOC will use the TRAC (Transparent Approach to Costing) FEC (Full Economic Cost) as the framework for pricing all contracts and projects and so ensuring it monitors its sustainability.
Under TRAC there is the Margin for Sustainability and Investment (MSI) that is built into the FEC recovery that will contribute to reserves and the overall investment pot. It is in the interests of the charity and the beneficiaries of the NOC to continue to invest in new capability and further the aims of the charity in terms of its advance of science. However, it is also necessary to hold an appropriate amount in the reserve against operational risk likely to materialise over any 12-month year.

It is intended that a £2,000k unrestricted sustainability reserve is held for working capital and this is grown to £6m over the next 5 years to cover the operational risk.

3. Trustees' Report - incorporating the Strategic Report (continued)

3.10. Financial Review

Risk management

Assessing and managing risk is a fundamental part of our day-to-day activities which can be inherently risky by their nature. The Executive play a critical role in identifying and managing risk throughout the organisation, acting as the escalation route for programme, project and operational risks, monitoring these risks via a risk register. The NOC has developed a new Risk Management Framework during 2019-20 that will become a critical tool to manage threats and opportunities to our strategic objectives. We are currently rolling out the introduction of this new Enterprise Risk Management approach that strives to ensure that risk is considered at all levels and in all areas. In addition, we are currently focusing our resources to ensure that we consider risk in all aspects of our decision making. We aim to improve our state of preparedness and reactivity; increase resilience to change and facilitate a reduction in business threats and uncertainty, while maximising opportunities and facilitating informed decision making in new areas.

The Board of Trustees and Audit and Risk Committee set the risk appetite of the organisation and provide essential and valued external challenge and advice, through robust assessment of the company's emerging and principal risks at each Board meeting. Notably, the Board of Trustees have provided considerable feedback to support the establishment of new risk and governance frameworks.

The principal risks and uncertainties faced by the NOC have related mainly to the COVID-19 pandemic. Our business continuity response and recovery has worked effectively to address and manage this challenging environment and to keep our people safe and continue our vital work. Like many organisations, the NOC has experience increased cyber security threats, with regular phishing attacks through the year. We have focused resources in reviewing our approaches, considering scenarios and engaging with staff to help mitigate the risks where we can. There has been a risk around uncertainty over the funding landscape and potential reduction or loss of funding, with mitigations being put in place to prepare for if this were to occur.

The impact of Brexit has been a principal risk considered within NOC's risk register throughout the year, largely due to the potential impact on being able to source goods to complete projects in required timelines. Various mitigations have been put in place to manage this risk and this fast-changing and evolving area.

In our first year of operating, we also recognise that we faced risks that related to transformation activity consequent upon our establishment as a charitable organisation independent of UKRI. NOC developed a number of financial management policies and established appropriate financial controls to mitigate these risks.

Investment Policy

The investment policy ensures that unrestricted reserves earmarked for investment opportunities are agreed, prioritised and approved in line with the NOC strategy and business plan. As well as ensuring the delivery of the associated benefits and enhanced capability, whether this is financial or qualitative or both.

3. Trustees' Report - incorporating the Strategic Report (continued)

3.10. Financial Review (continued)

Investment Policy (Continued)

. The finance system and reporting must be robust enough to ensure funds are appropriately recognised as revenue as project expenditure is incurred, and are fully identifiable within the NOC unrestricted reserve, as it is built up over time. TRAC requires that NOC does not hold too much in the sustainability reserve and encourages continual investment using the amount over the sustainability margin. It is in the interests of the charity and the beneficiaries of NOC to continue to invest in new capability and further the aims of the charity in terms of its advance of science object.

A business case will be put in place for each investment so that the Board can give consideration to investment for the purposes of making a return as well as investing in the strategic aims of NOC. Investments will be kept under regular review.

The Board decided that the first investments as per the above policy would not be made until after the first year of trading.

Trading Subsidiary

The NOC has a trading subsidiary, National Oceanography Centre Innovations Ltd (NOCI), which is a private company limited by shares. NOCI was incorporated on 9 October 2019 and is a wholly-owned subsidiary of the NOC. In the year to 30 September 2020 the subsidiary reported a loss for the financial year of £28.7k.

There is an Operating Agreement in place between the charity and the trading subsidiary to ensure there is a structured and governed relationship. This includes detailed clauses which ensure the protection of licensed IP for the charity.

The trading subsidiary undertakes four significant areas of activity; product sales (marine data products), Events (Commercial activity only), Intellectual Property licensing (agreements) and Marine Robotic Innovation Centre – membership and renewal.

The Chair of NOC Innovations Ltd reports to the NOC Board of Trustees. The Board of Trustees review the progress of the subsidiary, ensuring that the strategic objectives of the subsidiary are not in conflict with its own and that the financial return is satisfactory. Two members of the NOC Board of Trustees are members of the trading subsidiary board.

Fundraising Policy

During the year the NOC has not undertaken any active fundraising. The fundraising policy is being developed with a plan to being fundraising during FY21.

Plans for future periods

Our Five-Year Strategy, and its seven interdisciplinary strategic goals, will enable us to maintain commitment and delivery of our Charitable Objectives. Detailed in the Trustee's Report (incorporating the Strategic Report) are the activities we'll be focusing on between 2020-25, as part of our Five-Year Strategy, and our funding framework will diversify to support this.

3. Trustees' Report - incorporating the Strategic Report (continued)

3.10. Financial Review (continued)

Going Concern and the impact of Covid-19

The key assumption in assessing going concern is that NOC's key funders (UKRI and EU) will continue to pay as per their schedules, particularly in light of the COVID-19 pandemic. UKRI have continued to fund NOC and reduced their delivery expectations during the COVID-19 pandemic enabling full capability to be maintained throughout. Some COVID funding has been received to enable NOC to continue to deliver where delivery activity was impacted.

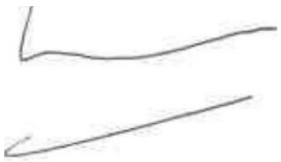
NOC has put together a 5-year business plan which brings together the National Capability funding from NERC-UKRI with signed research projects and those in the pipeline. For the year 21/22 the full current cost base of NOC has been trimmed back to achieve some savings and so is covered by funded projects with some resource available to deliver new projects that are in the pipeline or in early stages of bid development at present; some recruitment is likely to be needed in the coming year when current fixed term appointments end. NOC is deploying detailed resource planning to inform recruitment. As the forecast goes out to 22/23 and beyond there is more capacity to take on new funded projects, at this time the plan starts to forecast increased income from fundraising and NOC Innovations activity. Once this takes more shape the recruitment will be planned around the skills needed to deliver new areas of activity. Taking into consideration, signed Awards for National Capability infrastructure and science facilities and services spanning the next 3-5 years, current indications of recommissioning for National Capability Science, previous success rates in research grant rounds with sustained bid submission and forecast of future income based on marketing analysis the indications are that NOC can continue to cover its cost base over the coming 5-year period.

In conclusion there are no material uncertainties to cast doubt on the NOC's ability to continue as a going concern.

Auditor

The auditor, BDO LLP, has indicated their willingness to continue in office. The designated Trustees will propose a motion reappointing the auditor at a meeting of the Trustees.

Approved by order of the members of the board of Trustees and signed on their behalf by:



John Hirst CBE
Chairman and Trustee

25 March 2021

4. Statement of Trustees' Responsibility

The Trustees (who are also the directors of the Charity for the purposes of company law) are responsible for preparing the Trustees' Report including the Strategic Report and the financial statements in accordance with applicable law and United Kingdom Accounting Standards (United Kingdom Generally Accepted Accounting Practice).

Company law requires the Trustees to prepare financial statements for each financial period. Under company law the Trustees must not approve the financial statements unless they are satisfied that they give a true and fair view of the state of affairs of the Group and the Charity and of the incoming resources and application of resources, including the income and expenditure of the Group for that period. In preparing these financial statements, the Trustees are required to:

- select suitable accounting policies and then apply them consistently;
- make judgements and accounting estimates that are reasonable and prudent;
- state whether applicable UK Accounting Standards have been followed, subject to any material departures disclosed and explained in the financial statements;
- prepare the financial statements on the going concern basis unless it is inappropriate to presume that the Group will continue in business.

The Trustees are responsible for keeping adequate accounting records that are sufficient to show and explain the Charity's transactions and disclose with reasonable accuracy at any time the financial position of the Charity and enable them to ensure that the financial statements comply with the Companies Act 2006. They are also responsible for safeguarding the assets of the Group and the Charity and hence for taking reasonable steps for the prevention and detection of fraud and other irregularities.

Financial statements are published on the Charity's website in accordance with legislation in the United Kingdom governing preparation and dissemination of financial statements, which may vary from legislation in other jurisdictions. The maintenance and integrity of the charity's website is the responsibility of the trustees. The trustees' responsibility also extends to the ongoing integrity of the financial statements contained therein.

5. Independent Auditor's Report to the Members and Trustees of National Oceanography Centre

Opinion

We have audited the financial statements of National Oceanography Centre ("the Parent Charitable Company") and its subsidiaries ("the Group") for the year ended 30 September 2020 which comprise the consolidated statement of financial activities, the consolidated balance sheet, the charity balance sheet, the consolidated statement of cash flows and notes to the financial statements, including a summary of significant accounting policies. The financial reporting framework that has been applied in their preparation is applicable law and United Kingdom Accounting Standards, including Financial Reporting Standard 102 The Financial Reporting Standard applicable in the UK and Republic of Ireland (United Kingdom Generally Accepted Accounting Practice).

In our opinion, the financial statements:

- give a true and fair view of the state of the Group's and of the Parent Charitable Company's affairs as at 30 September 2020 and of the Group's incoming resources and application of resources for the year then ended;
- have been properly prepared in accordance with United Kingdom Generally Accepted Accounting Practice; and
- have been prepared in accordance with the requirements of the Companies Act 2006, the Charities and Trustee Investment (Scotland) Act 2005 and regulations 6 and 8 of the Charities Accounts (Scotland) Regulations 2006, as amended in 2010.

Basis for opinion

We conducted our audit in accordance with International Standards on Auditing (UK) (ISAs (UK)) and applicable law. Our responsibilities under those standards are further described in the Auditor's responsibilities for the audit of the financial statements section of our report. We are independent of the Group and the Parent Charitable Company in accordance with the ethical requirements relevant to our audit of the financial statements in the UK, including the FRC's Ethical Standard, and we have fulfilled our other ethical responsibilities in accordance with these requirements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Conclusions related to going concern

We have nothing to report in respect of the following matters in relation to which the ISAs (UK) require us to report to you where:

- the Trustees' use of the going concern basis of accounting in the preparation of the financial statements is not appropriate; or
- the Trustees have not disclosed in the financial statements any identified material uncertainties that may cast significant doubt about the Group or the Parent Charitable Company's ability to continue to adopt the going concern basis of accounting for a period of at least twelve months from the date when the financial statements are authorised for issue.

5. Independent Auditor's Report to the Members and Trustees of National Oceanography Centre (continued)

Other matter
The corresponding figures are unaudited.

Other information

The other information comprises the information included in the Annual Report and Financial Statements, other than the financial statements and our auditor's report thereon. The other information comprises: the reference and administrative details, the foreword by the chair of trustees and report of the chief executive, the trustee's report and the statement of trustee's responsibilities. The Trustees are responsible for the other information.

Our opinion on the financial statements does not cover the other information and, except to the extent otherwise explicitly stated in our report, we do not express any form of assurance conclusion thereon.

In connection with our audit of the financial statements, our responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the financial statements or our knowledge obtained in the audit or otherwise appears to be materially misstated. If we identify such material inconsistencies or apparent material misstatements, we are required to determine whether there is a material misstatement in the financial statements or a material misstatement of the other information. If, based on the work we have performed, we conclude that there is a material misstatement of this other information, we are required to report that fact.

We have nothing to report in this regard.

Opinions on other matters prescribed by the Companies Act 2006

In our opinion, based on the work undertaken in the course of the audit:

- the information given in the Trustees' Report, which includes the Directors' Report and the Strategic report prepared for the purposes of Company Law, for the financial year for which the financial statements are prepared is consistent with the financial statements; and

- the Strategic report and the Directors' Report, which are included in the Trustees' Report, have been prepared in accordance with applicable legal requirements.

Matters on which we are required to report by exception

In the light of the knowledge and understanding of the Group and the Parent Charitable Company and its environment obtained in the course of the audit, we have not identified material misstatement in the Strategic report or the Trustee's report.

We have nothing to report in respect of the following matters in relation to which the Companies Act 2006 and the Charities and Trustee Investment (Scotland) Act 2005 requires us to report to you if, in our opinion;

- proper and adequate accounting records have not been kept by the Parent Charitable Company, or returns adequate for our audit have not been received from branches not visited by us; or

5. Independent Auditor's Report to the Members and Trustees of National Oceanography Centre (continued)

- the Parent Charitable Company financial statements are not in agreement with the accounting records and returns; or
- certain disclosures of Directors' remuneration specified by law are not made; or
- we have not received all the information and explanations we require for our audit.

Responsibilities of Trustees

As explained more fully in the statement of trustee's responsibilities, the Trustees (who are also the directors of the parent charitable company for the purposes of company law) are responsible for the preparation of the financial statements and for being satisfied that they give a true and fair view, and for such internal control as the Trustees determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, the Trustees are responsible for assessing the Group's and the Parent Charitable Company's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless the Trustees either intend to liquidate the Group or the Parent Charitable Company or to cease operations, or have no realistic alternative but to do so.

Auditor's responsibilities for the audit of the financial statements

We have been appointed as auditor under section 44(1)(c) of the Charities and Trustee Investment (Scotland) Act 2005 and under the Companies Act 2006 and report in accordance with the Acts and relevant regulations made or having effect thereunder.

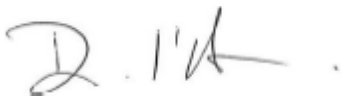
Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with ISAs (UK) will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

A further description of our responsibilities for the audit of the financial statements is located at the Financial Reporting Council's ("FRC's") website at: https://www.frc.org.uk/auditorsresponsibilities. This description forms part of our auditor's report.

5. Independent Auditor's Report to the Members and Trustees of National Oceanography Centre (continued)

Use of our report

This report is made solely to the Charitable Company's members, as a body, in accordance with Chapter 3 of Part 16 of the Companies Act 2006, and to the Charitable Company's trustees, as a body, in accordance with the Charities and Trustee Investment (Scotland) Act 2005. Our audit work has been undertaken so that we might state to the Charitable Company's members and trustees those matters we are required to state to them in an auditor's report and for no other purpose. To the fullest extent permitted by law, we do not accept or assume responsibility to anyone other than the Charitable Company, the Charitable Company's members as a body and the Charitable Company's trustees as a body, for our audit work, for this report, or for the opinions we have formed.



David I'Anson (Senior Statutory Auditor)
For and on behalf of BDO LLP, statutory auditor
Southampton

9 April 2021

BDO LLP is a limited liability partnership registered in England and Wales (with registered number OC305127).

Consolidated Statement of Financial Activities for the year ended 30 September 2020

incorporating an income & expenditure account

	Note	Unrestricted funds £'000	Restricted funds £'000	Restricted fixed asset funds £'000	Total £'000
Income from:					
Donations, grants and legacies	4	33,701	19,220	-	**52,921**
Grant of assets from UKRI	4	21	-	24,646	**24,667**
Income from trading subsidiary	13	365	-	-	**365**
Other trading activities	5	2,913	46	-	**2,959**
Investments	6	19	-	-	**19**
Other income		4	3	-	**7**
Total incoming resources		**37,023**	**19,269**	**24,646**	**80,938**
Expenditure on:					
Raising funds:					
Expenditure from trading subsidiary	13	394	-	-	**394**
Charitable activities	7	31,242	18,844	7,105	**57,191**
Total expenditure		**31,636**	**18,844**	**7,105**	**57,585**
Net income		**5,387**	**425**	**17,541**	**23,353**
Net movement in funds	18	**5,387**	**425**	**17,541**	**23,353**
Reconciliation of funds:					
Fund balances at beginning of year	18	-	-	-	**-**
Total fund balances at 30 September 2020	18	**5,387**	**425**	**17,541**	**23,353**

All amounts are derived from continuing activities.
The consolidated statement of financial activities includes all gains and losses recognised in the year.

The Group was not active in the previous accounting period, there was no income and no expenditure so no comparative Statement has been presented.

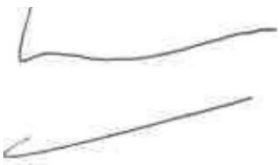
The notes on pages 63-72 form part of these financial activities.

Consolidated Balance Sheet

at 30 September 2020

Company number: 11444362	Note	2020 £'000	2020 £'000	2019 £'000	2019 £'000
Fixed assets					
Intangible assets	11		**1,114**		-
Tangible assets	12		**16,448**		-
			17,562		-
Current assets					
Stocks	14	**38**		-	
Debtors	15	**4,407**		-	
Cash at bank and in hand	20	**26,651**		-	
		31,096		-	
Creditors: amounts falling due within one year	16	**(25,305)**		-	
Net current assets			**5,791**		-
Net assets	19		**23,353**		-
Funds					
Unrestricted	18		**5,387**		-
Restricted	18		**425**		-
Restricted fixed asset	18		**17,541**		-
Total funds	18		**23,353**		-

The financial statements were approved and authorised for issue by the Trustees on and signed on their behalf by:



John Hirst CBE
Chairman

25 March 2021

The notes on pages 63-72 form part of these financial statements.

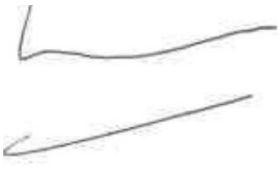
Charity Balance Sheet

at 30 September 2020

Company number: 11444362	Note	2020 £'000	2020 £'000	2019 £'000	2019 £'000
Fixed assets					
Intangible assets	11		**1,114**		-
Tangible assets	12		**16,448**		-
Investments	13		**-**		-
			17,562		-
Current assets					
Stocks	14	**38**		-	
Debtors	15	**4,539**		-	
Cash at bank and in hand	20	**26,467**		-	
		31,044		-	
Creditors: amounts falling due within one year	16	**(25,225)**		-	
Net current assets			**5,819**		-
Net assets	19		**23,381**		-
Funds					
Unrestricted	18		**5,415**		-
Restricted	18		**425**		-
Restricted fixed asset	18		**17,541**		-
Total funds	18		**23,381**		-

As permitted by S408 of the Companies Act 2009, the Charity has not presented its own income and expenditure account and related notes. The Company's surplus for the year was £23,381k (2019 - £Nil).

The financial statements were approved and authorised for issue by the Trustees on and signed on their behalf by:



John Hirst CBE
Chairman

25 March 2021

The notes on pages 63 to 72 form part of these financial statements.

Consolidated Statement of Cash Flows

	Note	2020 £'000	2019 £'000
Cashflows from operating activities			
Surplus for the year:		23,353	-
Grant of fixed assets from UKRI		(24,667)	
Depreciation	12	6,610	-
Amortisation	11	495	-
Investment income	6	(19)	-
Increase in stocks	14	(38)	-
Increase in debtors	15	(4,407)	-
Increase in creditors	16	25,305	-
Net cash provided by operating activities		**26,632**	**-**
Cashflows from investing activities			
Investment income	6	19	-
Net cash provided by investing activities		**19**	**-**
Increase in cash and cash equivalents in the year		**26,651**	**-**
Cash and cash equivalents at the beginning of the year	20	-	-
Cash and cash equivalents at the end of the year	20	**26,651**	**-**

The notes on pages 63-72 form part of these financial statements

1. General information

The National Oceanography Centre is a private limited company by guarantee without share capital (Company No. 11444362). The Company was incorporated in England and Wales under the Companies Act 2006 on the 2nd July 2018 but did not begin its operations until November 2019. This is therefore the first period of account where the Company has been active. The Company's principal activity is included in the trustees' report and the address of the registered office is included on page 1. The Company is registered as a charity in England and Wales (1185265) and Scotland (SC049896).

The Company has 5 members, who are also directors. The liability of each member on the event of the Company winding up is limited to a maximum of £1.

2. Accounting policies

Basis of preparation of financial statements

The financial statements have been prepared on a going concern basis under the historical cost convention. The financial statements have been prepared in accordance with the Charities SORP, 2nd Edition (FRS 102) - Accounting and Reporting by Charities: Statement of Recommended Practice applicable to charities preparing their accounts in accordance with the Financial Reporting Standard applicable in the UK and Republic of Ireland (FRS 102) (effective 1 January 2019), the Financial Reporting Standard applicable in the UK and Republic of Ireland (FRS 102) and the Companies Act 2006.

National Oceanography Centre meets the definition of a public benefit entity under FRS 102. Assets and liabilities are initially recognised at historical cost or transaction value unless otherwise stated in the relevant accounting policy.

The financial statements are prepared in sterling, which is the functional currency of the Group. Monetary amounts in these financial statements are rounded to the nearest £.

The preparation of financial statements in compliance with FRS 102 requires the use of certain critical accounting estimates. It also requires management to exercise judgement in applying the Group's accounting policies (see note 3).

The following principal accounting policies have been applied consistently:

2. Accounting policies (continued)

Basis of consolidation

The Consolidated Statement of Financial Activities (SOFA) and Consolidated Balance Sheet consolidate the financial statements of the Company and its subsidiary undertaking. The results of the subsidiary are consolidated on a line by line basis.

The Parent Charitable Company has taken advantage of the exemption allowed under section 408 of the Companies Act 2006 and has not presented its own Statement of Financial Activities in these financial statements.

Exemptions for qualifying entities under FRS 102

The Parent Charitable Company has taken advantage of the following disclosure exemptions available in FRS 102:

- from preparing a statement of cash flows;
- from financial instruments disclosures; and
- from the aggregate remuneration of the key management personnel as their remuneration is included in the totals for the group as a whole.

Going concern

The Trustees have reviewed whether it is appropriate for the financial statements to be prepared on a going concern basis.

The key assumption in assessing going concern is that NOC's key funders (UKRI and EU) will continue to pay as per their schedules, particularly in light of the COVID-19 pandemic. UKRI have continued to fund NOC and reduced their delivery expectations during the COVID-19 pandemic enabling full capability to be maintained throughout. Some COVID funding has been received to enable NOC to continue to deliver where delivery activity was impacted.

NOC has put together a 5-year business plan which brings together the National Capability funding from NERC-UKRI with signed research projects and those in the pipeline. For the year 21/22 the full current cost base of NOC has been trimmed back to achieve some savings and so is covered by funded projects with some resource available to deliver new projects that are in the pipeline or in early stages of bid development at present; some recruitment is likely to be needed in the coming year when current fixed term appointments end. NOC is deploying detailed resource planning to inform recruitment. As the forecast goes out to 22/23 and beyond there is more capacity to take on new funded projects, at this time the plan starts to forecast increased income from fundraising and NOC Innovations activity. Once this takes more shape the recruitment will be planned around the skills needed to deliver new areas of activity. Taking into consideration, signed Awards for National Capability infrastructure and science facilities and services spanning the next 3-5 years, current indications of recommissioning for National Capability Science, previous success rates in research grant rounds with sustained bid submission and forecast of future income based on marketing analysis the indications are that NOC can continue to cover its cost base over the coming 5-year period.

2. Accounting policies (continued)

Income

All income is recognised once the Group has entitlement to the income, it is probable that the income will be received, and the amount of income receivable can be measured reliably.

Grants are included in the Consolidated Statement of Financial Activities on a receivable basis. The balance of income received for specific purposes but not expended during the year is shown in the relevant funds on the Balance Sheet. Where income is received in advance of entitlement of receipt, its recognition is deferred and included in creditors as deferred income. Where entitlement occurs before income is received, the income is accrued. Donations and grants for particular purposes are included in income as restricted funds.

Where grants relate to donated fixed assets, they are measured at fair value, unless it is impractical to measure this reliably, in which case the cost of the item to the donor is used. The gain is recognised as income from donations and a corresponding amount is included in the appropriate fixed asset class and depreciated over the useful economic life, in accordance with the Group's accounting policies.

Investment income relates to interest on funds held on deposit and is included when receivable and the amount can be measured reliably by the Group; this is normally upon notification of the interest paid or payable by the institution with whom the funds are deposited.

Incoming resources from charitable trading activity are accounted for when earned.

All other income is recognised on an accruals basis once the Group is legally entitled to receipt.

Expenditure

Expenditure is recognised once there is a legal or constructive obligation to transfer economic benefit to a third party, it is probable that a transfer of economic benefits will be required in settlement and the amount of the obligation can be measured reliably.

Expenditure is classified by activity. The costs of each activity are made up of the total of direct costs and shared costs, including support costs involved in undertaking each activity.

Direct costs attributable to a single activity are allocated directly to that activity. Shared costs which contribute to more than one activity and support costs which are not attributable to a single activity are apportioned between those activities on a basis consistent with the use of resources. Central staff costs are allocated on the basis of time spent, and depreciation charges allocated on the portion of the asset's use.

Expenditure on raising funds includes all expenditure incurred by the Group to raise funds for its charitable purposes and includes costs of all fundraising activities events and non-charitable trading.

2. Accounting policies (continued)

Expenditure (continued)

Expenditure on charitable activities is incurred on directly undertaking the activities which further the Group's objectives, as well as any associated support costs.

Governance costs include those incurred in the governance of the Charity and its assets and are primarily associated with constitutional and statutory requirements.

All expenditure is inclusive of irrecoverable VAT.

Foreign currencies

Monetary assets and liabilities denominated in foreign currencies are translated into sterling at rates of exchange ruling at the reporting date.

Transactions in foreign currencies are translated into sterling at the rate ruling on the date of the transaction.

Exchange gains and losses are recognised in the Consolidated Statement of Financial Activities.

Intangible assets and amortisation

Intangible assets are capitalised and recognised when future economic benefits are probable and the cost or value of the asset can be measured reliably.

Intangible assets are initially recognised at cost. After recognition, under the cost model, intangible assets are measured at cost less any accumulated amortisation and any accumulated impairment losses.

At each reporting date the Charity assesses whether there is any indication of impairment. If such indication exists, the recoverable amount of the asset is determined to be the higher of its fair value less costs to sell and its value in use. An impairment loss is recognised where the carrying amount exceeds the recoverable amount.

Amortisation is provided on intangible assets at rates calculated to write off the cost of each asset on a straight-line basis over its expected useful life.

The estimated useful lives are as follows:

Computer software - 5 years straight line

2. Accounting policies (continued)

Tangible fixed assets and depreciation

Tangible fixed assets are capitalised and recognised when future economic benefits are probable and the cost or value of the asset can be measured reliably.

Tangible fixed assets are initially recognised at cost. After recognition, under the cost model, tangible fixed assets are measured at cost less accumulated depreciation and any accumulated impairment losses. All costs incurred to bring a tangible fixed asset into its intended working condition should be included in the measurement of cost.

Assets in the course of construction are included at costs incurred to date. Depreciation on these assets is not charged until they are brought into use.

At each reporting date the Charity assesses whether there is any indication of impairment. If such indication exists, the recoverable amount of the asset is determined to be the higher of its fair value less costs to sell and its value in use. An impairment loss is recognised where the carrying amount exceeds the recoverable amount.

Depreciation is charged on a straight-line basis over their estimated useful lives.

Depreciation is provided on the following bases:

Scientific equipment	-	5 years
Marine pool	-	5 years
Fixtures and fittings	-	5 years
Computer equipment	-	5 years
Plant and machinery	-	5 years

The assets' residual values, useful lives and depreciation methods are reviewed, and adjusted prospectively if appropriate, or if there is an indication of a significant change since the last reporting date.

Gains and losses on disposals are determined by comparing the proceeds with the carrying amount and are recognised in the Consolidated Statement of Financial Activities.

Investments

Investments in subsidiaries are valued at cost less provision for impairment.

Stocks

Stocks are valued at the lower of cost and net realisable value after making due allowance for obsolete and slow-moving stocks. Cost includes all direct costs and an appropriate proportion of fixed and variable overheads.

2. Accounting policies (continued)

Debtors

Trade and other debtors are recognised at the settlement amount after any trade discount offered. Prepayments are valued at the amount prepaid net of any trade discounts due.

Cash at bank and in hand

Cash at bank and in hand includes cash and short-term highly liquid investments with a short maturity of three months or less from the date of acquisition or opening of the deposit or similar account.

Liabilities and provisions

Liabilities are recognised when there is an obligation at the Balance Sheet date as a result of a past event, it is probable that a transfer of economic benefit will be required in settlement, and the amount of the settlement can be estimated reliably.

Liabilities are recognised at the amount that the Group anticipates it will pay to settle the debt or the amount it has received as advanced payments for the goods or services it must provide.

Financial instruments

The Group only has financial assets and financial liabilities of a kind that qualify as basic financial instruments. Basic financial instruments are initially recognised at transaction value and subsequently measured at their settlement value with the exception of bank loans which are subsequently measured at amortised cost using the effective interest method.

Operating leases

Rentals paid under operating leases are charged to the Consolidated Statement of Financial Activities on a straight-line basis over the lease term.

Pensions

The Group operates a defined contribution pension scheme and the pension charge represents the amounts payable by the Group to the fund in respect of the year.

The Group is also participating in a multi-employer plan with The National Environmental Research Council which is a defined benefit scheme funded from annual grant-in-aid on a pay as you go basis. It is not possible for the Group to obtain sufficient information to enable it to account for the plan as a defined benefit plan, it therefore accounts for the plan as a defined contribution plan.

2. Accounting policies (continued)

Fund accounting

General funds are unrestricted funds which are available for use at the discretion of the Trustees in furtherance of the general objectives of the Group and which have not been designated for other purposes.

Designated funds comprise unrestricted funds that have been set aside by the Trustees for particular purposes. The aim and use of each designated fund is set out in the notes to the financial statements.

Restricted funds are funds which are to be used in accordance with specific restrictions imposed by donors or which have been raised by the Group for particular purposes. The costs of raising and administering such funds are charged against the specific fund. The aim and use of each restricted fund is set out in the notes to the financial statements.

Restricted fixed asset funds represent the moveable assets of the National Oceanography Centre, being the plant, equipment (including IT equipment), libraries, stocks, inventory and consumables of the operation. Without them the National Oceanography Centre could not operate. They are shown separately to other unrestricted funds due to the size and importance of these assets to the National Oceanography Centre.

Investment income, gains and losses are allocated to the appropriate fund.

Gift aid donations made to the charity

Donations made by the subsidiary to the Parent Charity are recognised as income in the charity either when paid or at the date when the subsidiary has a legal liability to make the donation payment if earlier.

Research vessels

The NOC operates and manages two research vessels owned by UKRI under a bareboat charter at peppercorn rates. The terms of the bareboat charter do not meet the definition of a lease and, due to the unique nature of the vessels, it is not possible to reasonably quantify the value ascribed to the ownership and operation of them.

3. Critical accounting estimates and areas of judgement

Estimates and judgements are continually evaluated and are based on historical experience and other factors, including expectations of future events that are believed to be reasonable under the circumstances.

Critical accounting estimates and assumptions

The Group makes estimates and assumptions concerning the future. The resulting accounting estimates and assumptions will, by definition, seldom equal the related actual results. The estimates and assumptions that have a significant risk of causing a material adjustment to the carrying amounts of assets and liabilities within the next financial year are discussed below.

Critical areas of judgement

Depreciation is a key estimate in the accounts which requires management judgement over the useful life of the assets and the residual values. The policy has been set out in the notes above.

Notes to the financial statements

4 Income from donations, grants and legacies

	Unrestricted funds 2020 £'000	Restricted funds 2020 £'000	Restricted fixed asset funds 2020 £'000	Total funds 2020 £'000
Donations:				
Other donations	2,000	-	-	**2,000**
	2,000	**-**	**-**	**2,000**
Grant of fixed assets from UKRI	21	-	24,646	**24,667**
	21	**-**	**24,646**	**24,667**
Income from grants:				
UKRI NERC grant	30,636	14,289	-	**44,925**
UKRI other grants	1,036	4,931	-	**5,967**
Other grants	29	-	-	**29**
	31,701	**19,220**	**-**	**50,921**
	33,722	**19,220**	**24,646**	**77,588**

Income from donations, grants and legacies was £Nil in the previous financial period.

5 Income from other trading activities

	Unrestricted funds 2020 £'000	Restricted funds 2020 £'000	Restricted fixed asset funds 2020 £'000	Total funds 2020 £'000
Rental	767	-	-	**767**
Disbursements	1,639	-	-	**1,639**
Maintenance and repairs income	478	1	-	**479**
Bond sales	-	40	-	**40**
Ship charter income	3	-	-	**3**
Other trading income	26	5	-	**31**
	2,913	**46**	**-**	**2,959**

Income from trading activities was £Nil in the previous financial period.

Notes to the financial statements (continued)

6 Investment income

	Unrestricted funds 2020 £'000	Total funds 2020 £'000
Bank interest	**19**	**19**

Investment income was £Nil in the previous financial period.

7 Expenditure on charitable activities

	Staff Costs £'000	Vessel costs £'000	Research costs £'000	Estate costs £'000	Depreciation £'000	Other costs £'000	Total £'000
Activities undertaken directly							
Scientific research	22,312	5,728	1,421	68	5,623	6,056	**41,208**
Support costs							
- Operations and finance staff	8,099	-	-	-	-	-	**8,099**
- Management, operations and facilities costs	-	-	-	3,176	-	2,971	**6,147**
- Depreciation	-	-	-	-	1,482	-	**1,482**
- Governance costs	-	-	-	-	-	255	**255**
	30,411	**5,728**	**1,421**	**3,244**	**7,105**	**9,282**	**57,191**

	Total £'000
Analysis of governance costs	
Audit fees:	
- Audit of financial statements	**52**
- Other fees paid to auditors	**7**
Trustee remuneration and expenses	**2**
Legal and professional fees	**181**
Finance costs	**13**
	255

Total expenditure on charitable activities for the year was £57,191k. Of that expenditure £31,242k was unrestricted, £18,844k was restricted and £7,105k was restricted fixed asset funds. Expenditure was £Nil in the previous financial period.

Notes to the financial statements (continued)

8 Net income

	2020 £'000	2019 £'000
Net income is stated after charging:		
Depreciation of tangible fixed assets	6,610	-
Amortisation of intangible fixed assets	495	-
Auditors remuneration:		
- Audit fees	52	-
- Non-audit fees	7	-
Loss on foreign exchange	29	-

9 Staff costs

Group and charity	2020 £'000	2019 £'000
Wages and salaries	22,920	-
National insurance contributions	2,257	-
Pension costs	5,234	-
	30,411	-

During the year there were redundancy costs of £134k (2019 - £Nil) which were paid to 11 members of staff. Of these 10 were statutory redundancy pay and 1 severance pay.

The number of employees for the year was as follows:

	2020 Number	2019 Number
Science and research staff	253	-
Operations and finance staff	200	-
Engineers and technicians	110	-
Mariners	90	-
	653	-

The number of employees whose employee benefits (excluding employer pension costs) exceeded £60,000 was:

	2020 Number	2019 Number
£60,001 - £70,000	10	-
£70,001 - £80,000	2	-
£90,001 - £100,000	2	-
£100,001 - £110,000	1	-

Notes to the financial statements (continued)

9 Staff costs (continued)

	2020 £'000	2019 £'000
Key management personnel salaries (inc. pensions) *(Key management personnel are the Senior Management Team, as set out on page 1 of this report)*	**374**	-

10 Trustees' remuneration and expenses

During the year, one Trustee (David John Gee) received £6.3k in relation to remuneration or other benefits. £Nil in the previous accounting period. The remuneration was agreed and provided under a provision in the governing document of the Charity. Remuneration was provided due to the Trustee's role as the Chair of the Audit and Risk Committee, which requires a range of specialist knowledge and experience and has a wide remit in terms of the role that the Trustee is required to provide. No other benefits were provided.

During the year ended 30 September 2020, one Trustee was reimbursed for expenses of £0.5k (2019 - £Nil) in relation to travel and subsistence.

During the year indemnity insurance of £23k (2019 - £Nil) was purchased in respect of all the Trustees and Officers of the Charity.

11 Intangible assets

Group and charity	**Computer Software and Total £'000**
Cost	
Additions	1,609
At 30 September 2020	**1,609**
Amortisation	
Charge for the year	495
At 30 September 2020	**495**
Net book value	
At 30 September 2020	**1,114**

Notes to the financial statements (continued)

12 Tangible fixed assets

Group and charity

	Scientific equipment £'000	Marine pool £'000	Fixtures and fittings £'000	Computer equipment £'000	Plant and machinery £'000	Total £'000
Cost or valuation						
Additions	14,465	5,329	122	1,169	1,973	23,058
At 30 September 2020	**14,465**	**5,329**	**122**	**1,169**	**1,973**	**23,058**
Depreciation						
Charge for the year	3,962	1,661	23	446	518	6,610
At 30 September 2020	**3,962**	**1,661**	**23**	**446**	**518**	**6,610**
Net book value						
At 30 September 2020	**10,503**	**3,668**	**99**	**723**	**1,455**	**16,448**

On 1 November 2019 and moveable assets - being the plant, equipment (including IT equipment), libraries, stocks, inventory and consumables of the operation, were transferred to the charity by way of a capital grant from UKRI totalling £24,646k.

Notes to the financial statements (continued)

13 Fixed asset investments

The addition in the year related to 100% of the share capital on incorporation of National Oceanography Centre Innovations Limited on the 9th October 2019 at the cost of £1.

Principal subsidiaries

The following was a subsidiary undertaking of the Charity:

Name	Company number	Registered office or principal place of business	Principal activity	Class of shares	Holding
National Oceanography Centre Innovations Limited	12250763	National Oceanography Centre European Way Southampton United Kingdom SO14 3ZH	Development of products and services based on the output of ocean science research and engineering	Ordinary	100%

As at 30 September 2020 trading subsidiary accounts were as follows:

	£'000
Income	365
Expenditure	(394)
Net liabilities	(29)

14 Stocks

Group and charity	2020 £'000	2019 £'000
Goods for resale	**38**	**-**

The difference between purchase price or production cost of stocks and their replacement cost is not material.

During the year there was no impairment to the value of stock (2019 - £Nil).

Notes to the financial statements (continued)

15 Debtors

	Group 2020 £'000	Group 2019 £'000	Charity 2020 £'000	Charity 2019 £'000
Trade debtors	3,513	-	3,438	-
Group debtors	-	-	207	-
Prepayments	855	-	855	-
Other debtors	39	-	39	-
	4,407	-	4,539	-

During the year there was no impairment to the value of debtors in relation to bad debt provisions (2019 - £Nil).

16 Creditors: amounts falling due within one year

	Group 2020 £'000	Group 2019 £'000	Charity 2020 £'000	Charity 2019 £'000
Trade creditors	1,741	-	1,741	-
Due to Marine and EU partners	4,801	-	4,801	-
Pension accrual	195	-	195	-
Social security and other taxes	15	-	15	-
Accruals	4,140	-	4,140	-
Deferred income (see note 17)	14,413	-	14,333	-
	25,305	-	25,225	-

17 Deferred income

	Group 2020 £'000	Group 2019 £'000	Charity 2020 £'000	Charity 2019 £'000
Amounts deferred in year	14,413	-	14,333	-
Carried forward	14,413	-	14,333	-

Deferred income relates to grant income, including research grants, which are received in advance of specific conditions being met. The income is shown as deferred until those conditions are fully satisfied.

Notes to the financial statements (continued)

18 Funds

Group	Income £'000	Expenditure £'000	Transfers £'000	Balance at 30 September 2020 £'000
Unrestricted funds				
Designated:				
Long Term Maintenance	**1,334**	**(2,376)**	**-**	**(1,042)**
General unrestricted:				
Unrestricted funds	**35,689**	**(29,260)**	**-**	**6,429**
Total unrestricted funds	**37,023**	**(31,636)**	**-**	**5,387**
Restricted funds				
Restricted funds	**19,269**	**(18,844)**	**-**	**425**
Restricted fixed asset funds	**24,646**	**(7,105)**	**-**	**17,541**
Total restricted funds	**43,915**	**(25,949)**	**-**	**17,966**
Total funds	**80,938**	**(57,585)**	**-**	**23,353**

Charity	Income £'000	Expenditure £'000	Transfers £'000	Balance at 30 September 2020 £'000
Unrestricted funds				
Designated:				
Long Term Maintenance	**1,334**	**(2,367)**	**-**	**(1,042)**
General unrestricted:				
Unrestricted funds	**35,324**	**(28,867)**	**-**	**6,457**
Total unrestricted funds	**36,658**	**(31,243)**	**-**	**5,415**
Restricted funds				
Restricted funds	**19,269**	**(18,844)**	**-**	**425**
Restricted fixed asset funds	**24,646**	**(7,105)**	**-**	**17,541**
Total restricted funds	**43,915**	**(25,949)**	**-**	**17,966**
Total funds	**80,573**	**(57,191)**	**-**	**23,381**

Notes to the financial statements (continued)

18 Funds (continued)

General funds are unrestricted funds which are available for use at the discretion of the Trustees in furtherance of the general objectives of the Group and which have not been designated for other purposes.

Designated funds comprise unrestricted funds that have been set aside by the Trustees for particular purposes. The aim and use of each designated fund is set out in the notes to the financial statements.

Restricted funds are funds which are to be used in accordance with specific restrictions imposed by donors or which have been raised by the Group for particular purposes. The costs of raising and administering such funds are charged against the specific fund. The aim and use of each restricted fund is set out in the notes to the financial statements.

Restricted funds comprise of NMF ship operating income, charter income balance andNMEP capital replacement..

Restricted fixed asset funds are funds for the sole use of acquiring the moveable assets of NOC on the 1 November 2019 and the expenditure is the subsequent depreciation of these assets.

19 Net assets

Group	Fixed assets 2020 £'000	Current assets 2020 £'000	Current Liabilities 2020 £'000	Total 2020 £'000
General unrestricted	21	29,337	(22,929)	**6,429**
Designated	-	1,334	(2,376)	**(1,042)**
Restricted	-	425	-	**425**
Restricted fixed asset	17,541	-	-	**17,541**
	17,562	**31,096**	**(25,305)**	**23,353**

Charity	Fixed assets 2020 £'000	Current assets 2020 £'000	Current Liabilities 2020 £'000	Total 2020 £'000
General unrestricted	21	29,285	(22,849)	**6,457**
Designated	-	1,334	(2,376)	**(1,042)**
Restricted	-	425	-	**425**
Restricted fixed asset	17,541	-	-	**17,541**
	17,562	**31,044**	**(25,225)**	**23,381**

Notes to the financial statements (continued)

20 Cash and cash equivalents

	Group 2020 £'000	Group 2019 £'000	Charity 2020 £'000	Charity 2019 £'000
Cash at bank	**26,651**	-	**26,467**	-

21 Analysis of net debt

	At start of the year	Cash flows	At 30 September 2020
Group			
Bank and cash balances	**-**	**26,651**	**26,651**
Charity			
Bank and cash balances	**-**	**26,467**	**26,467**

22 Pension commitments

UKRI-NERC employees are entitled to be members of the Research Council's Pension Scheme which is a defined benefit scheme funded from annual grant-in-aid and pay-as-you-go basis. The pension scheme is contributory and is administered by the Research Council's Joint Superannuation Service. The scheme is a multi-employer scheme, for which a separate Research Council's Pension Scheme account is published. NERC are unable to identify their share of the underlying assets and liabilities and those relating to NOC.

Employees who joined after 1 November 2019 are entitled to be members of the National Oceanography Centre Group Pension Scheme. This is a defined contribution pension scheme administered by Legal and General. Contributions for the year were employer's 10% and employees a minimum of 5%.

The pension costs charge for the year represents contributions payable to the schemes and amounted to £5,234k (2019: £Nil).

23 Related party transactions

The Charity recharged employment costs of £245k (2019: £Nil) to National Oceanography Centre Innovations Limited, its subsidiary and also incurred costs of £148k (2019: £Nil) on behalf of its subsidiary.

At the year end the Charity was owed £207k (2019: £Nil) by National Oceanography Centre Innovations Limited.

Transactions with Trustees are detailed in note 12.