



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



UN CLIMATE
CHANGE
CONFERENCE
UK 2021

IN PARTNERSHIP WITH ITALY

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	IMPACT EXCELLENCE	RESEARCH AND IMPACT ENVIRONMENT
99% of the work assessed was considered internationally significant. 79% were rated internationally excellent or world leading.	100% of the case studies were of international significance and 81% were excellent or world leading.	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.

OUR VALUES



EXCELLENCE



EMPOWERMENT



INTEGRITY



INNOVATIVE THINKING



ENVIRONMENTAL RESPONSIBILITY



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.

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.

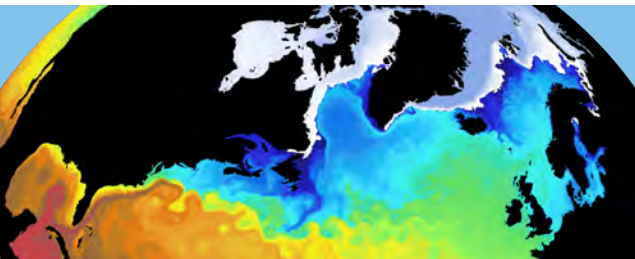
The NOC and our trading subsidiary, NOC Innovations, bring benefits in a number of ways, including through scientific research, marine technology, education, information and advice. Through our work, we aim to do five things:



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



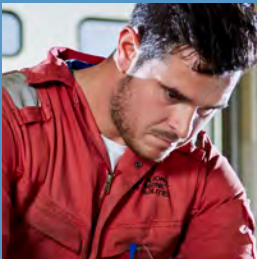
**GOAL 5
GROW AND DIVERSIFY**

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



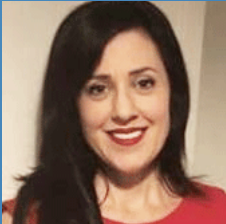
LEIGH STOREY
Associate Director
for National Marine Facilities



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: Beatriz Vinha - Universidade do Salento - iMirabilis2

227

TOTAL RESEARCH
PAPERS PRODUCED

170

GOLD OPEN ACCESS
RESEARCH PAPERS

18

GREEN OPEN ACCESS
RESEARCH PAPERS

83%

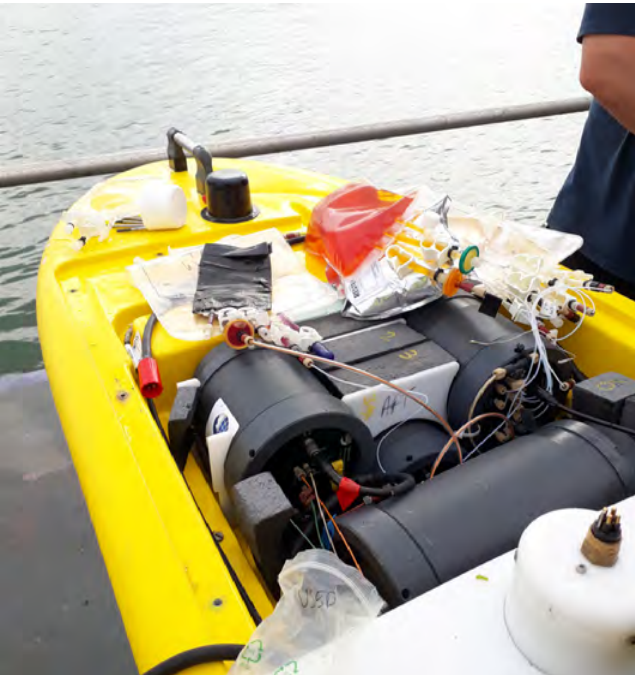
OF ALL OUR RESEARCH
PAPERS ARE OPEN ACCESS

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)



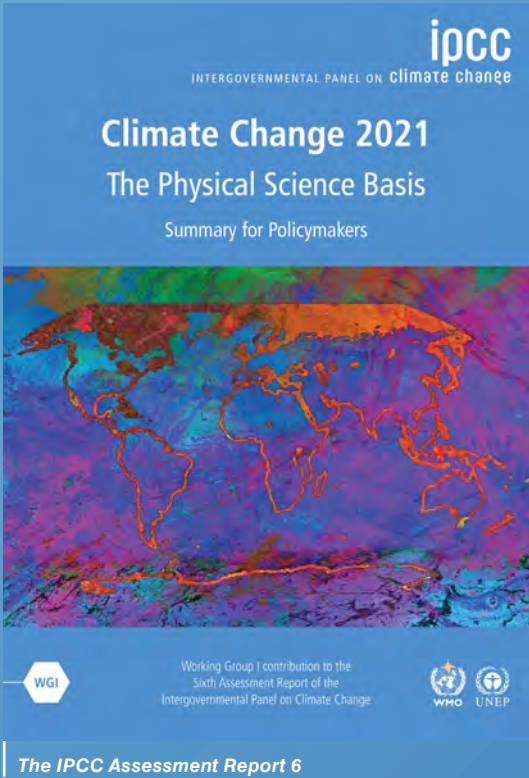
AUTHORS OF CHANGE

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.

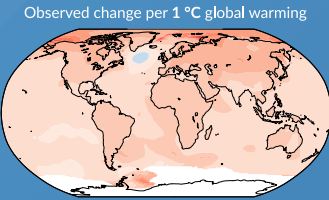
The evidence suggests that the biological carbon pump is an important component of the ocean carbon cycle, but there is really large uncertainty around how it will respond to ongoing climate change and how that will feed back to atmospheric CO₂ levels. The observational and modelling work we’re doing 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

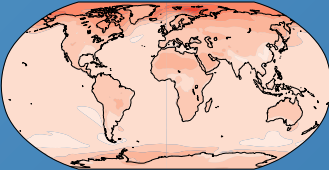


a) Annual mean temperature change (°C) at 1°C global warming

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.



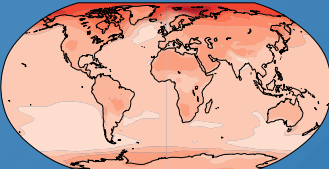
Observed change per 1°C global warming



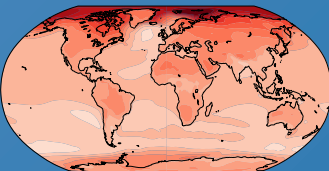
Simulated change at 1°C global warming

b) Annual mean temperature change (°C) relative to 1850-1900

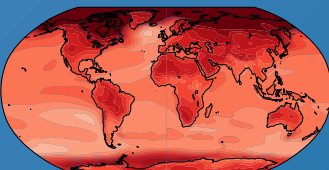
Across warming levels, land areas warm more than oceans, and the Arctic and Antarctica warm more than the tropics.



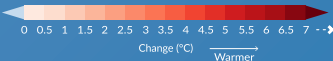
Simulated change at 1.5°C global warming



Simulated change at 2°C global warming



Simulated change at 4°C global warming



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

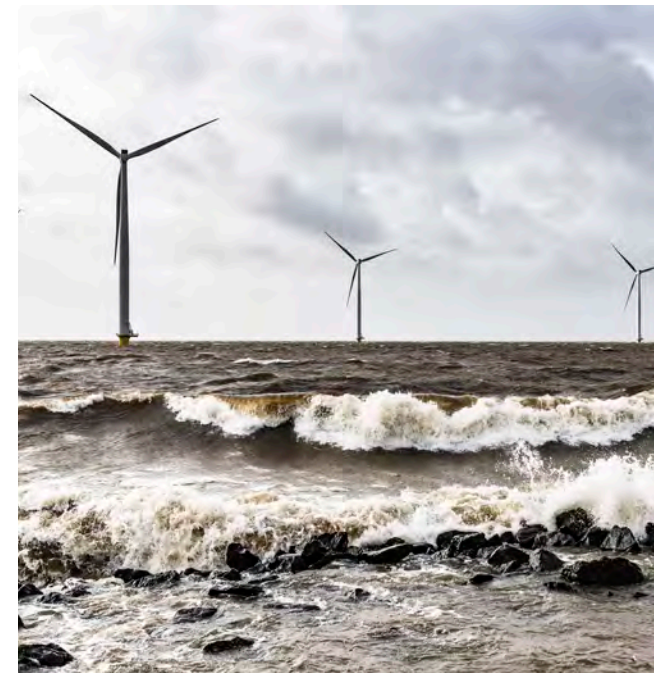
We are incredibly proud our research makes a tangible difference to people nationally and internationally. This year we have helped people with weather forecasting, protecting coasts from hazards, and working out how to care for marine protected areas.

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

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.

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.

LIVERPOOL DOCKS.													
REGISTER of TIDES observed at the Tide Gauge, <i>George's Quay</i> for <i>Feb^r & March 1861</i>													
Date, 27 th		28 th		29 th		30 th		1 st		2 nd		3 rd	
Time.	Height.	Time.	Height.	Time.	Height.	Time.	Height.	Time.	Height.	Time.	Height.	Time.	Height.
0.15	20.3	0.15	18.7	0.15	16.1	0.15	14.2	0.15	12.4	0.15	10.6	0.15	8.8
30	21.1	30	19.6	30	17.0	30	15.4	30	13.8	30	12.2	30	10.6
45	21.3	45	20.3	45	17.8	45	16.2	45	14.6	45	13.0	45	11.4
1.0	21.0	1.0	20.8	1.0	18.2	1.0	16.6	1.0	15.0	1.0	13.4	1.0	11.8
1.15	20.5	1.15	20.7	1.15	18.6	1.15	17.0	1.15	15.4	1.15	13.8	1.15	12.2
30	19.3	30	20.0	30	18.0	30	16.4	30	14.8	30	13.2	30	11.6
45	18.6	45	19.3	45	17.4	45	15.8	45	14.2	45	12.6	45	11.0
2.0	16.11	2.0	18.3	2.0	16.6	2.0	15.0	2.0	13.4	2.0	11.8	2.0	10.2
2.15	15.14	2.15	16.10	2.15	14.3	2.15	12.7	2.15	11.1	2.15	9.5	2.15	7.9
30	13.9	30	15.3	30	13.7	30	12.1	30	10.5	30	8.9	30	7.3
45	11.10	45	13.9	45	11.3	45	9.7	45	8.1	45	6.5	45	4.9
3.0	9.10	3.0	11.9	3.0	9.10	3.0	7.5	3.0	5.9	3.0	4.3	3.0	2.7
15	5.3	15	10.0	15	7.7	15	6.1	15	4.5	15	2.9	15	1.3
30	6.3	30	8.0	30	11.9	30	10.3	30	8.7	30	7.1	30	5.5
45	5.2	45	6.5	45	9.10	45	7.4	45	5.8	45	4.2	45	2.6
4.0	3.7	4.0	4.10	4.0	6.2	4.0	4.6	4.0	3.0	4.0	1.4	4.0	-0.2
15	2.2	15	3.5	15	5.2	15	3.6	15	2.0	15	0.4	15	-1.2
30	0.9	30	2.0	30	4.9	30	3.3	30	1.7	30	0.1	30	-1.5
45	0.6	45	1.7	45	3.9	45	2.3	45	0.7	45	-0.9	45	-2.3
5.0	1.10	5.0	1.5	5.0	2.3	5.0	0.7	5.0	-0.9	5.0	-2.3	5.0	-3.7
15	3.0	15	1.5	15	1.0	15	-0.6	15	-2.0	15	-3.4	15	-4.8
30	4.1	30	2.0	30	0.3	30	-1.3	30	-2.7	30	-4.1	30	-5.5
45	5.2	45	2.4	45	1.9	45	0.3	45	-1.3	45	-2.7	45	-4.1
6.0	6.1	6.0	3.0	6.0	2.10	6.0	0.5	6.0	-1.1	6.0	-2.5	6.0	-3.9
15	7.0	15	3.5	15	3.10	15	1.5	15	-0.1	15	-1.5	15	-2.9
30	7.9	30	4.0	30	4.9	30	3.3	30	1.7	30	0.1	30	-1.5
45	8.6	45	4.5	45	5.9	45	4.3	45	2.7	45	1.1	45	-0.5

An example of a historic tide gauge ledger being digitised line-by-line with the help of dedicated citizen scientists



Showcasing our ocean modelling at the Winchester Science Centre

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

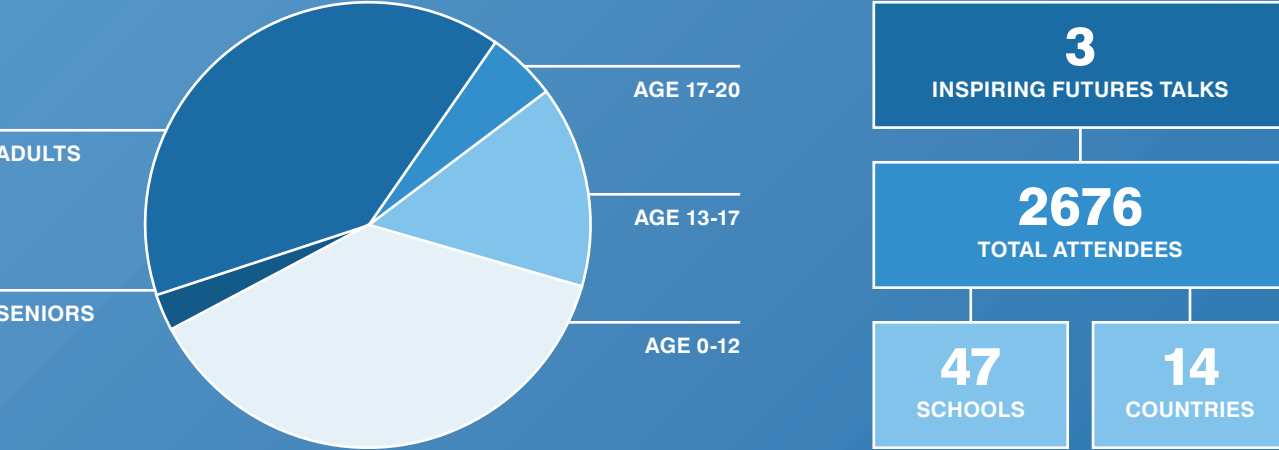


EXPANDING OUR REACH TO 41 COUNTRIES WORLDWIDE



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

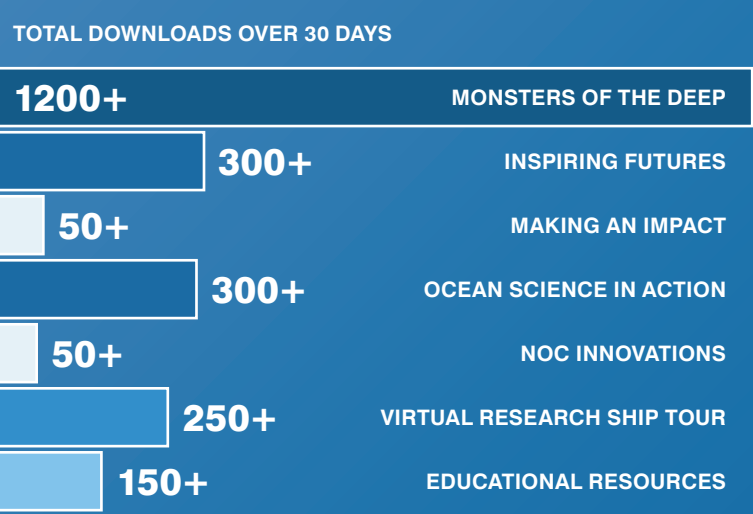
INSPIRING THE NEXT GENERATION



PRESENTING OUR WORK TO A GLOBAL AUDIENCE



A DIVERSE RANGE OF DOWNLOADABLE CONTENT



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
Atlantic'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

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.

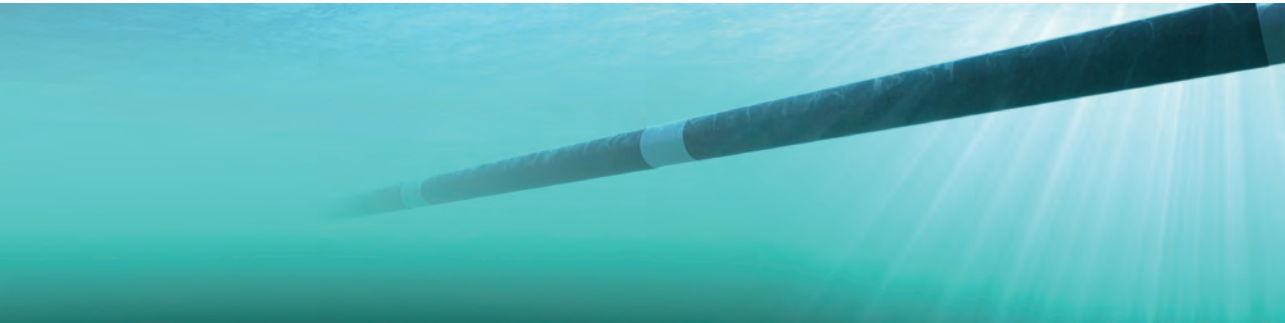
The Carbonate Chemistry Autonomous Sensor System (CarCASS) project developed the first sensor suite of its kind, capable of autonomously measuring seawater carbonate chemistry from the surface to full ocean depth through lab-on-chip sensors for pH, Total alkalinity (TA), and dissolved inorganic carbon (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



The NOC is equipped with the latest cutting edge technology

system for the first time. CarCASS's technology can improve our understanding of the ocean's rapidly changing CO₂ 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 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

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



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 DECADRE 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



THIRTY
VIDEO LECTURES



FIVE STAR
USER RATING



INTERNATIONAL EARLY CAREER
SCIENTIST MENTORING TEAM



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.

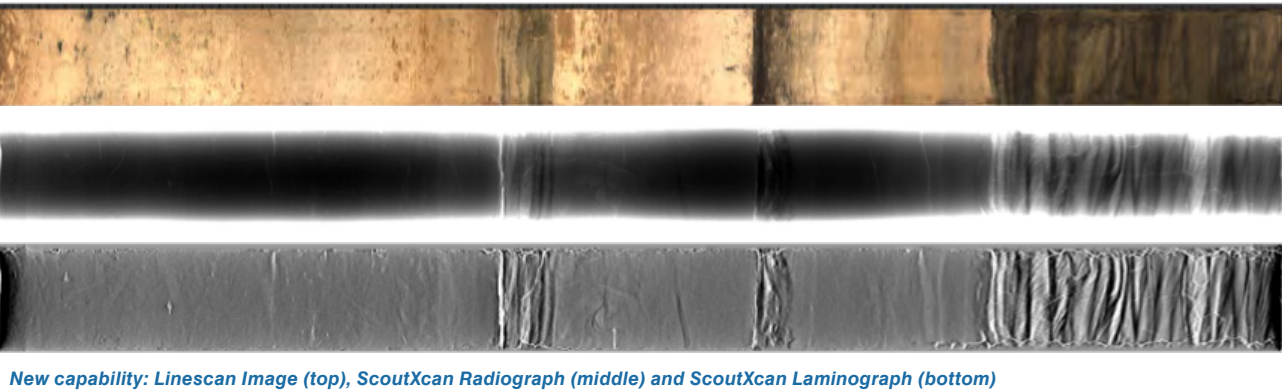
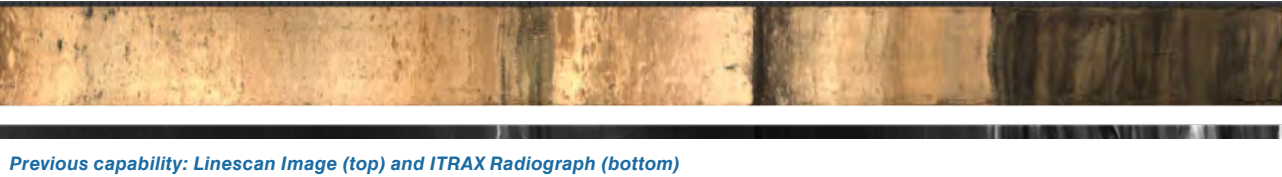
CORE UPGRADES

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.

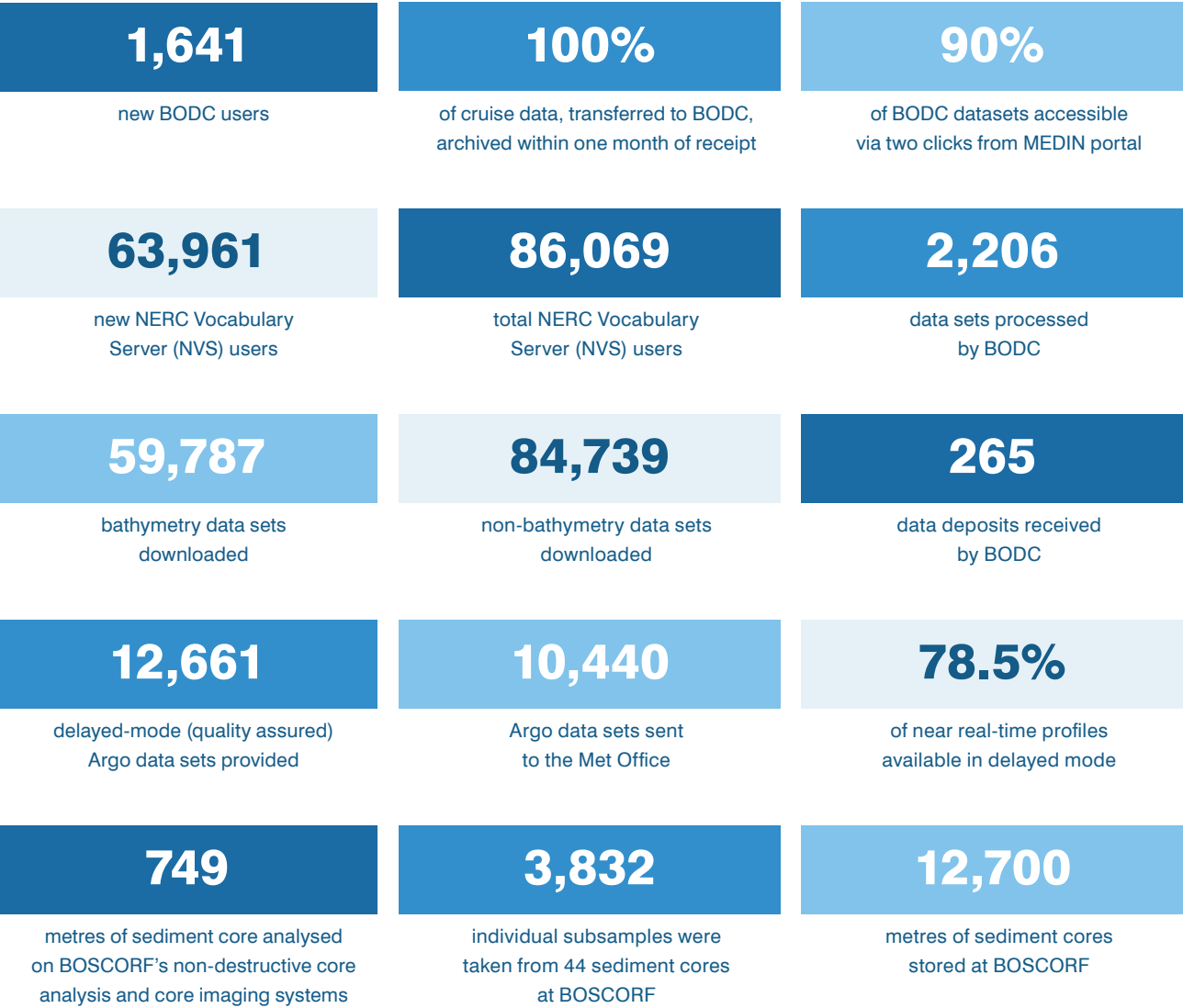
The ScoutXcan is a multi-angle 2D X-ray radiography and pseudo-3D laminography system developed by Geotek.

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.



ENABLING OCEAN SCIENCE

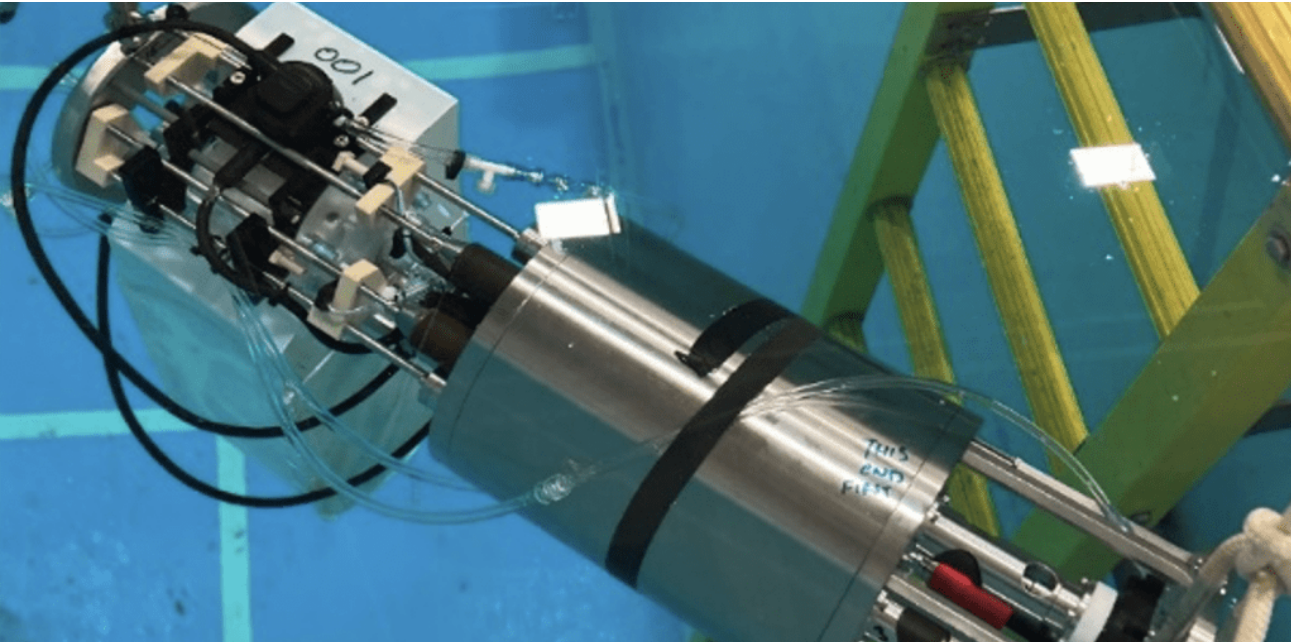


ACCESS TO ALL

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)

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 CO₂ 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 CO₂. 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)

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.

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.

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



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 26°N 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	Daniel Hook
Professor Sir Ian Boyd	Sarah Kenny OBE
David Gee	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



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
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Ocean Village
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

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 CO₂e, based on figures in Table 1, was 11,988.62 tonnes, at an intensity ratio of 0.19 (tCO₂e/m2) and 221.87 (kgCO₂e/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 CO₂e and for the consumption of fuel for transport was 8,342.30 tonnes CO₂e. In addition, the annual quantity of emissions in tCO₂e from the purchase of electricity by the company for its own use was 1,083.48 tonnes CO₂e.

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 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



The NOC is on a 100% green energy tariff, reducing the carbon impact of our purchased electricity

type, Fuel cost 136p/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 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 CO₂e 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 CO₂e in 2020-21 compared to 994 tonnes CO₂e in 2019-20.

TABLE 1	Reporting Year 2019-20			Reporting Year 2020-21		
	Southampton	Liverpool	Total	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 ₂ e)	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 ₂ e)	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 ₂ e)	-	-	816.50	-	-	2,136.50
Fuel used for transport purposes- Ships (m³)	-	-	-			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 ₂ e)	-	-	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 ₂ e)	-	-	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 ₂ e	-	-	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 ₂ e)	-	-	0.53	-	-	3.89
Total CO ₂ e based on above figures (tonnes)	-	-	4,888.56			11,988.62
Floor space (m²)	51,234.80	2,800.00	54,034.80	51,234.80	2,800.00	54,034.80
Intensity ratio (tCO ₂ e/m²)	-	-	0.09	-	-	0.19
Intensity ration (kgCO ₂ e/m²)	-	-	90.47	-	-	221.87

TABLE 2	Reporting Year 2019-20			Reporting Year 2020-21		
	Southampton	Liverpool	Total	Southampton	Liverpool	Total
Incinerated waste (tonnes)	26.98	-	26.98	23.48	0.47	23.95
Incinerated waste emissions (tCO ₂ e)	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 ₂ e)	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 ₂ e)	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 ₂ e)	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 ₂ e	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 ₂ e)	32.08		9.60	
Short-Haul air emissions (tCO ₂ e)	105.04		12.182	
Long-Haul air emissions (tCO ₂ e)	490.02		15.895	
International air emissions (tCO ₂ e)	353.78		4.286	
Domestic rail emissions (tCO ₂ e)	12.97		1.58	
International rail emissions (tCO ₂ e)	0.1		0.005	
Total CO ₂ e 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

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 £'000	2020 £'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
		-----	-----

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
BOSCORG	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.

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