



National  
Oceanography  
Centre

STRATEGIC PRIORITIES 2020 – 2025

# DEFINING OUR FUTURE



# WHAT WE DO

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The National Oceanography Centre (NOC) is a world leader in oceanographic science, research and innovation. We work in global partnerships in some of the remotest, deepest and most hostile parts of the ocean to bring a greater understanding of issues that affect our environment, our landscapes, our health and our prosperity.

Our aim is to advance ocean science and education, and to empower decision makers and the public to make informed choices about issues that affect the world we live in.

There is only one ocean, divided into large basins. It is completely interconnected – moving vast amounts of water, heat, chemicals and microscopic life around the planet, without national or political boundaries. It has powerful influences on all parts of the Earth – the atmosphere above, crust below, ice-covered regions and the land's coastal zones. All these interactions in turn shape the ocean and its life.

The ocean profoundly impacts human society.



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The ocean produces 50% of the oxygen we breathe



Absorbs 93% of excess heat generated by greenhouse warming



Takes 25% of carbon dioxide produced by humans



Carries 95% of the UK's imports and exports, including nearly half of all our food



Brings a quarter of our energy supplies



Delivers 95% of internet traffic and financial transactions through undersea cables



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Our population is growing, and the quickest growth is in coastal regions. The work we undertake at the NOC seeks to advance the knowledge required to address the big challenges facing people and planet:

- Securing and protecting ocean resources and ecosystems
- Protecting people and property from natural disasters and climate change
- Understanding climate change and variability, and its effects on society

This is the context for our five year strategy, which translates these global goals into challenges and opportunities that we will embrace. Our strategy also builds on what is not changing – our enduring mission and passion to advance knowledge of the ocean.

# WHO WE ARE

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The NOC has been in operation for over six decades and has a team of over 600 people leading research, technology and innovation that benefits the whole world. We are one of a few global organisations with the equipment and expertise to explore and operate as far below the surface as 6,500m.



## OUR VISION

As an organisation, our vision is for the NOC by 2025 to be seen as the world's most innovative oceanographic institution. In this way, through advancing science, we will contribute to a broader international vision, e.g. the planned outcomes of the UN Decade of Ocean Science for Sustainable Development 2021-2030 for:

- A clean ocean whereby sources of pollution are identified, quantified and reduced and pollutants removed from the ocean
- A healthy and resilient ocean whereby marine ecosystems are mapped and protected, multiple impacts, including climate change, are measured and reduced, and provision of ocean ecosystem services is maintained
- A predicted ocean whereby society has the capacity to understand current and future ocean conditions, forecast their change and impact on human wellbeing and livelihoods

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- A safe ocean whereby people are protected from ocean hazards and where the safety of operations at sea and on the coast is ensured
- A sustainably harvested and productive ocean ensuring the provision of food supply and livelihoods
- A transparent and accessible ocean whereby all nations, stakeholders and citizens have access to ocean data



## OUR MISSION

Our enduring mission is: making sense of changing seas.

The three supporting pillars of this are:

- 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
- 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

We live by our values in deciding what we do and how we do it. Investigating the ocean is a global endeavour, relying upon and fully embracing our diversity of talent, ideas, perspectives, experiences, backgrounds and skills.

#### Excellence

We value excellence as the foundation on which the NOC is built

#### Empowerment

We value people and teams as the NOC's most important assets

#### Innovative Thinking

We value considering different approaches, finding different ways of doing things and seeking creative solutions

#### Environmental Responsibility

We value the ocean, recognising our reliance on it, and consider our environmental impact in everything we do



#### Integrity

We value independence and integrity and treat each other with respect and trust

#### Working In Partnership

We value the benefits of working together and actively seek to exchange knowledge, skills and resources

# OUR WORK

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The NOC contributes to the global endeavour of advancing scientific knowledge of the ocean. We do this by:

- Undertaking research and sustained observations of the ocean and sharing the results
- Making sure data about the ocean is available and accessible to all
- Being a hub for research equipment, facilities and infrastructures
- Leading and enabling national and international research collaborations
- Providing independent scientific and technological advice on;



– Securing and protecting ocean resources and ecosystems

– Protecting people and property from natural disasters and climate change

– Understanding climate change and variability, and its effects on society

- Working with universities and others to educate and train scientists, engineers and marine professionals
- Engaging the public with the science of the ocean and its implications
- Engaging with industry and other users of research to support and inform their activities

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# OUR BENEFICIARIES

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

**The public all over the world**  
Inspiring, informing and educating

**Marine life and ecosystems**  
Protecting our world so it works in harmony

**Scientists, engineers and researchers**  
Nationally, internationally and in developing countries

**Young people and students**  
Encouraging study, research and careers in oceanography

**Government**  
Informing decision making through robust evidence

**Offshore Operators**  
Ensuring those who use the ocean do so in a safe and sustainable way

**NOC teams**  
Making sure our people have a career that inspires and motivates them

# OUR STRATEGIC GOALS

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We work together as One NOC towards a shared vision and mission. Our main goals relate directly to our primary purpose of advancing science.

## GOAL 1: ADVANCE

Undertake internationally excellent research and technology development to advance the frontiers of knowledge about the ocean

We deliver for the highest standards of research excellence and pride ourselves on our capabilities to observe, model and tackle challenges. Our current priorities are climate and the carbon cycle; coastal zone and shelf seas; sea floor resources and habitats; platform, sensor, model and data systems development. We work in partnership to do this, as well as inspiring and training the next generation of scientists to ensure there is a future for our community of innovative and leading researchers.

## RAPID PROJECT

Our RAPID research programme has transformed our understanding of the large-scale Atlantic circulation. A joint UK/US programme, led by the NOC, has been continuously measuring the flow between Florida and the Canary Islands since 2004, revealing unexpected and large changes in the strength of ocean currents and documenting processes not captured by state-of-the-art climate models. These results have led to RAPID being used as a benchmark in the Intergovernmental Panel on Climate Change (IPCC) reports. The methodological and technical advances have revolutionised how the international oceanographic community measures ocean circulation.

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## THE FUTURE OF THE SEAS AND OCEANS INITIATIVE

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Working with the Department for Business, Energy and Industrial Strategy (BEIS), we are taking a lead role in the development of the G7 Future of the Seas and Oceans Initiative. The Future of the Seas and Oceans Working Group, comprised of marine scientists and government science ministries from across the G7, is advancing ocean priorities and leads collaboration and developments in this area. In particular, the Working Group recognises the importance of ocean observing and monitoring activities and has five Action Areas to progress the G7 commitments, in coordination with the Global Ocean Observing System (GOOS).



### GOAL 2: SHARE

Create public benefit from all of the NOC's capabilities

We lead the UK marine science community in the UK and have a major part to play in influencing the international agenda. We are the trusted source for data, information, samples and advice to international partners and the UK Government to ensure policy is developed through evidence and independent advice. We support the delivery of the UN Sustainable Development Goals and the ambitions of the UN Decade of Ocean Science for Sustainable Development 2021-2030.

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**GOAL 3: INNOVATE**

Successfully translate world-leading and innovative research and technology to achieve wider impact

We engage users of the ocean to understand the challenges and help shape new science questions. We work in partnership with businesses and other organisations to generate new products and services that benefit the public and those in marine industries.

**WORKING WITH OUR  
INDUSTRY PARTNERS**

Through our Marine Robotics Innovation Centre, we work with scientific and industrial developers and users of marine technologies to deliver the next generation of marine autonomous systems. This work is enabling new information gathering capabilities for UK marine science and the wider blue economy. Through our relationships with innovative companies, we have been able to facilitate the advancement of this technology and enable its deployment, at scale, for real-world scientific and other end-user applications. We are contributing to a more persistent presence in the ocean to increase our understanding, lower carbon emissions and cost per data gathered, and taking humans away from the dull, dirty and dangerous elements of operating in the ocean.

## THE OCEANIDS PROGRAMME

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Ocean robots are becoming more 'intelligent', able to access live data from satellites and combine that with in-situ sensors to adjust their planned missions. This allows them to maximise the data they are collecting for scientists and extend our understanding of how the ocean system works. The Oceanids programme of research and development is pushing the boundaries of where and how the NOC's fleet of autonomous platforms can operate. When combined with the oceanographic research ships operated by the NOC, this means we can explore any and every part of the world's oceans.



### GOAL 4: ENABLE

Provide world-class underpinning capabilities that enable the UK and global ocean scientific endeavour

We have two of the most advanced oceanographic research ships in the world as well as a large pool of marine science equipment and associated expertise available to support excellent scientific discovery. Our ocean observation capabilities mean we can explore and seek to understand previously inaccessible environments such as beneath the ice shelves of Antarctica. We can map, analyse and understand the sea floor and the ocean above through the most advanced artificial intelligence and expertise.

### SUPPORTING AIMS

To achieve these ambitious goals, we know that we need to ensure we have sustainable income, strong leadership, and inspired people. The NOC is an amazing place to work and we support our people to think, thrive and succeed.

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# WORKING IN PARTNERSHIP

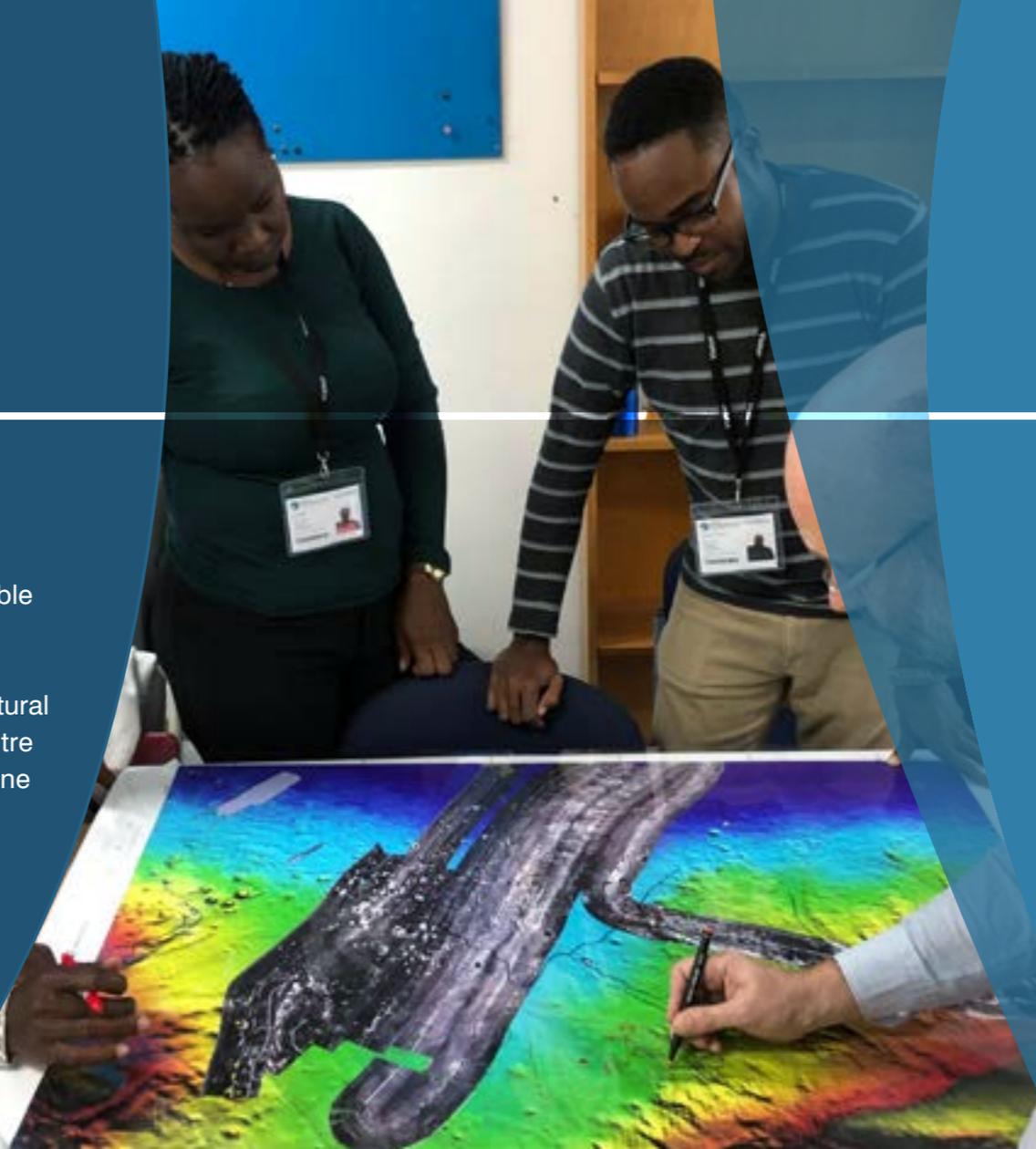
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Our success relies on others – we achieve greater advances by working in partnership and collaboration than we do alone.

The NOC is one of the few large oceanographic institutions in the world capable of supporting a truly global and multi-basin approach to ocean science.

We lead the UK capability on behalf of UK Research & Innovation and the Natural Environment Research Council (UKRI-NERC). This means we are at the centre of the marine scientific community, based in universities and specialist marine research institutions. We engage in the science community in many ways.

We work with communities in academia; government and industry. As well as leading the way, we also act as a bridge and a facilitator to enable great research beyond our own organisation. Some of our collaborative activities include:



Peer Institutions

We influence international research and ocean observing agendas. Through the Partnership for Observation of the Global Ocean, we work with all major ocean research institutes worldwide, and we are on the European Marine Board, a leading European think tank on science for policy.

Government

We have close working relationships with a number of UK Government Departments, allowing a flow of timely information and knowledge that supports evidence-based decision making and facilitating the work of the UK's Marine Science Coordination Committee.

Academic Institutions

We provide leadership and co-ordination of numerous multi-institution scientific research programmes within the UK and involving European partners.

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**Industry**

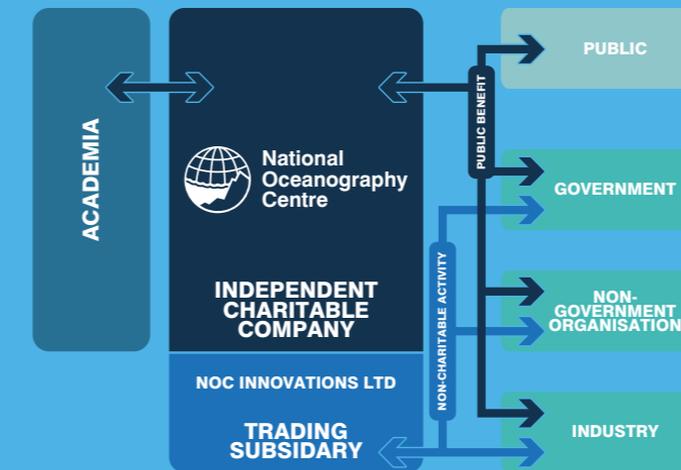
The NOC's Marine Robotics Innovation Centre works with small and large companies to develop autonomous ocean measurement technologies with multiple stakeholders. Together we demonstrate the capabilities of the technologies and develop innovative practices for the benefit of science and beyond.

**International Bodies**

We are active on the international stage at many forums, and as partners across UK Government and European programmes. We provide technical expertise to enable UK constructive engagement in the Intergovernmental Oceanographic Commission of UNESCO (IOC-UNESCO), where global scale programmes are developed such as the Global Ocean Observing System and the UN Decade of Ocean Science for Sustainable Development 2021-2030.



**STRATEGIC POSITIONING OF THE NOC AS AN ORGANISATION**



# GET IN TOUCH

Over the next five years, we will work towards our vision with you and with all our other partners.

Together we will strive to ensure the ocean and all who depend upon it have a sustainable future. If you'd like to work with us on our mission, get in touch.

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