

Challenger Wave



Monthly newsletter of the Challenger Society for Marine Science (CSMS)

NEWS

Proceedings of the MASTS Cross-Sectoral Working Group on the Impact of Electromagnetic Fields (EMFs) on Marine Ecosystems

Published in January, [A Cross-Sector Framework for Understanding and Managing the Cumulative Effects of Anthropogenic Electromagnetic Fields \(EMFs\) in the Marine Environment](#). Rapid expansion of offshore renewable energy infrastructure has led to a concomitant increase in anthropogenic electromagnetic fields (EMFs) in marine environments. Although many marine taxa detect and respond to natural geomagnetic and electric cues, the ecological significance of exposure to anthropogenic EMFs remains poorly resolved.

A multi-sector Working Group convened by MASTS (Marine Alliance for Science and Technology for Scotland) identified critical knowledge gaps, barriers to data access, and opportunities for coordinated scientific and governance action. This paper synthesises those discussions and outlines a proposed framework for evidence generation, monitoring, and regulatory reform to support responsible offshore energy development.

Climate change reshapes capelin stocks, new science warns

Iceland's Marine and Freshwater Research Institute has [released a major international special issue on capelin](#), warning that climate and ecosystem change are reshaping the species' distribution, behaviour and role in fisheries management. The collection brings together 16 peer-reviewed scientific papers published in *Reviews in Fish Biology and Fisheries* and was made public on 8 January 2026. The special issue, titled *Capelin in Times of Environmental Change*, covers the four

leading capelin stocks worldwide. These are the Iceland–East Greenland–Jan Mayen stock, the Barents Sea, the Newfoundland–Labrador shelf, and the Pacific stock off Alaska. The studies focus on long-term changes in biomass, distribution, migration patterns, and behaviour that directly matter for fisheries management.



Researchers from the Icelandic institute are lead authors on seven of the papers. The work builds on a dedicated capelin research programme that ran from 2018 to 2022. Several studies document significant shifts in the distribution of capelin around Iceland, East Greenland, and Jan Mayen over the past two decades, alongside pronounced fluctuations in stock size. Others analyse larval distribution, feeding behaviour in new feeding areas, and how vertical movement affects acoustic stock estimates.

The collection also includes a comprehensive review that summarises current knowledge on capelin and outlines the steps needed to apply an ecosystem-based approach to capelin fisheries. Additional papers examine links between capelin abundance and school structure, and how changing ocean conditions shape feeding habitats along the East Greenland coast. Together, the studies underscore that capelin is a highly mobile species whose response to environmental change must be accounted for in future management decisions.

New study quantifies sargassum's multi-million dollar impact to U.S. coastal economies

A newly published study led by researchers at the Woods Hole Oceanographic Institution (WHOI) and the University of Rhode Island (URI) provides the most comprehensive assessment to date of the economic damage caused by recurring sargassum seaweed inundation events across U.S. coastal regions. The research quantifies multi-million, and in some areas potentially billion-dollar, annual losses affecting Puerto Rico, the U.S. Virgin Islands (USVI), and Florida's Atlantic coast. Funded by NOAA's National Centers for Coastal Ocean Science (NCCOS) Competitive Research Program in 2020, the study addresses a critical knowledge gap. "While the ecological and public health impacts of sargassum inundation events (SIEs) have been widely documented," said Tracey Dalton, a professor of Marine Affairs at URI, the lead principal investigator of the URI-WHOI collaborative project on assessing societal impacts of harmful macroalgae blooms in the Caribbean, "their direct and indirect economic costs to governments, coastal communities, and private industries had not previously been quantified."



In 2023, WHOI scientists aboard the NOAA ship Ronald H. Brown took some of the first samples from a massive, ongoing, Sargassum bloom. (Photo by Ellen Park ©Woods Hole Oceanographic Institution)

"Understanding the economic scale of sargassum impacts is essential for informed decision-making," said Di Jin, a senior scientist at the Marine Policy Center at WHOI, and the lead author on the study. "Our findings provide resource managers with evidence-based estimates that can guide investments in forecasting, response, and long-term mitigation strategies." WHOI led the study's economic modeling and analysis, examining impacts

across three sectors central to coastal economies: tourism, recreation, and fisheries. These sectors are particularly vulnerable to sargassum accumulation, which can foul beaches, disrupt fishing operations, damage coastal infrastructure, and deter visitors. The research integrates economic modeling, satellite observations, tourism, and fisheries data, and long-term sargassum monitoring to translate environmental disruption into actionable economic evidence.

"NCCOS' partnership with WHOI underscores the value of applied science in delivering actionable information for coastal managers, from guiding investments in effective Sargassum response and cleanup strategies to helping communities protect livelihoods, tourism, and long-term economic resilience" said NCCOS director Sean Corson. To quantify these impacts, the research team integrated multiple data sources and analytical approaches, including national income and employment statistics for marine and coastal industries, NOAA's Sargassum Inundation Reports and field observations from the Sargassum Watch database to estimate the frequency and duration of inundation events, estimated tourism losses due to hotel cancellations and reduced visitor spending, and estimates on declines in commercial and recreational fishing landings. This multi-sector approach allowed researchers to develop a robust, region-specific picture of the growing financial burden imposed by increasingly frequent and prolonged sargassum seasons.

The study shows that sargassum seasons are beginning earlier and lasting longer across the Caribbean and western Atlantic, increasing the frequency and severity of coastal impacts. Puerto Rico, the U.S. Virgin Islands, and southeast Florida face the highest risk of severe sargassum inundation, with annual economic losses already reaching multi-million-dollar levels in Puerto Rico and the USVI and potentially rising to billion-dollar impacts along Florida's Atlantic coast. Despite these growing challenges, existing sargassum forecasting tools are performing well and can play a critical role in supporting improved planning, preparedness, and response efforts.

"These results highlight the urgency of sustained investment in sargassum monitoring, forecasting, and cleanup infrastructure," Dalton notes.

“Without proactive management, the economic consequences for coastal communities will continue to escalate.” The study [builds on decades of WHOI expertise](#) in large-scale ocean circulation, biogeochemistry, and ecosystem change. Today’s unprecedented sargassum events are not isolated phenomena, but symptoms of broader shifts in the Atlantic Ocean system.

Massive sargassum blooms—now forming what researchers refer to as the “Great Atlantic Sargassum Belt”, stretch thousands of miles from West Africa to the Caribbean, Gulf of Mexico, and U.S. Atlantic coastline. The Great Atlantic Sargassum belt appears to have been initiated by unusual wind and circulation patterns in the winter of 2009-2010, subsequently fueled by high nutrient availability in the tropical Atlantic. “As the Atlantic continues to change, we’re seeing cascading effects that directly connect offshore ocean processes to coastal economic vulnerability,” said Jin. “This study links those large-scale environmental drivers to real-world economic consequences.”

New abyssal ‘fishing’ worm discovered

An intriguing new species of deep-sea worm, *Melinnopsis nathanieli*, has been [described](#) from the dark, cold depths of the NE Atlantic, southwest of Ireland. The species was collected from the Porcupine Abyssal Plain Sustained Observatory (PAP-SO), a long-term scientific study site in the northeast Atlantic at nearly 5000 m depth. The discovery was a collaboration between researchers at the National Oceanography Centre (NOC), the University of Southampton and the University of Portsmouth. Previously described species from [PAP-SO](#) include octopuses, sea anemones, amphipods, sea cucumbers and sea pens. This is the first new polychaete worm (bristle worm) species described from the site for a decade.



Studying *Melinnopsis nathanieli*

Specimens from the historic [Discovery Collections](#) at NOC were examined using a range of techniques, including both morphological and genetic methods which enabled researchers to confirm this as a species new to science. The worm has been given a name with a special meaning, honouring NOC researcher Amanda Serpell-Stevens’ son, Nathaniel, as a surprise for his 21st birthday.

In situ seabed images appear to show *Melinnopsis nathanieli* ‘fishing’ for food. The worm sticks out a long tentacle from its mouth, sweeps it through the water column and across the sediment surface picking up food particles, similar to a flyfisher casting for trout. Its tube, which stands upright in the sediment, can reach at least 30 cm in length and has a close association with anemones and ascidians (sea squirts). The tube acts as a hard substrate for these animals, raising them vertically into the stronger water flow above the sediment surface enabling them to trap more food. Although the species of worm had been observed frequently in seabed photographs and collected in sampling surveys used to assess long-term environmental change at PAP-SO since sampling began there in the 1980s, it has remained a nameless mystery for decades.



Dr Laetitia Gunton and Amanda Serpell-Stevens study the new species of deep-sea worm

Dr Laetitia Gunton, lead author of the study and teaching fellow at the University of Southampton, said: “This study is unique as it is very rare to be able to provide behavioural information in a deep-sea species description. This is the first time I have described a deep-sea species with in-situ images available. The vertical positioning of the worm’s tube in the sediment and mid-water ‘fishing’ technique is fascinating, I would never

have expected the behaviour from studying the physical specimens alone.” Naming this species by writing a formal description and observing its behaviour vastly improves understanding of biodiversity at this important long term monitoring site. This allows scientists to make better comparisons to other deep-sea locations around the world and understand deep-sea species’ unique ecological roles.

Bubble netting knowledge spread by immigrant humpback whales

New research from the University of St Andrews has found that the social spread of group bubble-net feeding amongst humpback whales is crucial to the success of the population’s ongoing recovery. Bubble-net feeding is when a group of whales work together to blow clouds of bubbles that corral their small fish prey schools into higher densities that they can then engulf together. It is a cooperative and highly social behaviour that requires whales to learn how to work in a group.



The study, published on the 21st January 2026 in *Proceedings of the Royal Society B*, shows that the recovery of humpback whales in the northeastern Pacific depends not only on population size, but on the spread of a culturally learned feeding behaviour across the whales’ social networks. The bubble-netting tactic has been seen for decades in the waters of Alaska, however, as the Canadian Pacific population of humpbacks has recovered from whaling, it is now spreading into that population too. Researchers from the Sea Mammal Research Unit (SMRU) at St Andrews found this is likely because immigrant whales have brought the knowledge of the technique with them, thereby introducing it to whales in Canadian waters that either didn’t know or had lost the knowledge of the technique.

The research was conducted in Gitga’at First Nation territory, within the Kitimat Fjord System of northern British Columbia, Canada. It’s an area that has been stewarded by the Gitga’at First Nation for millennia and is known for its ecological and cultural importance. By analysing long-term social network data, the study shows that the spread of this behaviour is tightly linked to whale social structure, with knowledge passing through key individuals and groups. Whilst the evolutionary importance of importing new ideas is well known in human societies, this new study shows that it can also be important for whales. Lead author from the University of St Andrews, Dr Éadin O’Mahony, said: “Bubble-net feeding isn’t just a foraging trick, it’s a form of shared knowledge that strengthens the resilience of the entire population.” She added: “Species recovery isn’t just a numbers game: as the number of whales fluctuates, the distribution of cultural knowledge within the population may determine how well they adapt to change. Cultural loss can be just as damaging as population loss and potentially just as hard to restore. Protecting areas where distinct learned behaviours are concentrated could deliver conservation benefits that ripple far beyond local waters.”



Co-author Dr Luke Rendell, Reader in the School of Biology from the University of St Andrews, said: “This study reinforces our growing understanding that the flow and spread of information in animal societies is a vital part of their ability to thrive.” The study underscores the growing need to integrate animal culture into marine management, particularly as human impacts on ocean ecosystems intensify.



Exploring sublittoral Blue Carbon habit suitability and potential in the Shetland Islands

A report, produced by University of the Highlands and Islands, Shetland (UHI Shetlands), and endorsed as an **Ocean Decade Activity**, presents the first assessment of sublittoral blue carbon habitats within the Shetland Islands 12 nautical mile (nm) limit, evaluating their spatial extent,

ecological characteristics, and potential contribution to carbon sequestration and long-term storage. Blue carbon habitats, including seagrass meadows, kelp forests, brittlestar beds, horse mussel beds and maerl beds, play a crucial role in supporting biodiversity, stabilising sediments, and mitigating climate change through the capture and retention of organic carbon.

The study combined high-resolution spatial data with species distribution modelling (MaxEnt) to predict the extent of blue carbon habitats across Shetland's 12 nm zone. Modelled habitat distributions were developed using presence-only occurrence data and 11 environmental predictors. Validation metrics demonstrated high predictive accuracy (AUC > 0.97, TSS > 0.79), providing high confidence in the outputs. Download the report below, and learn more about [UHI Shetlands' Exploring Shetland's Blue Carbon Habitats project here](#).

The High Seas Treaty came into force in January

The Treaty, formally known as the Agreement on the Conservation and Sustainable Use of Marine Biological Diversity of Areas Beyond National Jurisdiction (BBNJ), gives humanity its first global legal framework to safeguard the High Seas. Winner of The Earthshot Prize 2025, the [High Seas Treaty](#) reflects the power of collective action and demonstrates that protecting our shared ocean is possible. This is not the end of a journey, but the beginning of a new chapter in ocean governance.



The High Seas begin beyond national borders, making up most of the ocean and nearly half of the Earth's surface. Until now, these waters were governed through a patchwork of rules and organisations, with no single framework to protect biodiversity in a coordinated, fair and

effective way. Now, for the first time, the world has shared rules to:

- Create Marine Protected Areas in international waters.
- Require environmental impact assessments for activities that could harm marine ecosystems.
- Promote sustainable and responsible use of ocean resources.
- Help all countries share skills, knowledge, technology and the benefits of genetic ocean resources.

In practical terms, the Treaty provides the tools needed to protect marine life in the largest part of our ocean, while ensuring its benefits are shared more equitably among nations, so no single country can benefit at the expense of others. The evolution of the Treaty was led by the [High Seas Alliance](#), alongside governments, scientists, Indigenous Peoples, civil society groups, legal experts and youth advocates around the world.



The deep waters of the High Seas are home to an extraordinary variety of life, like this Diamond squid. Credit: Mike Bartick / Ocean Image Bank

In March 2023, the final text was agreed. In September 2025, the 60th country ratified it, triggering the countdown to entry into force. 120 days later, in January, the Treaty officially entered into force and became legally binding international law. The pace of ratification has been remarkable. Reaching 60 ratifications in just two years reflects growing global recognition that the High Seas cannot remain beyond protection.

DY214 cruise berth applications

Applications for early career scientists (ECRs) to apply for berths on the 2026 AtlantiS/Ellett Array expedition is now open at <https://atlantis.ac.uk/engagement/academic-engagement>. DY214 is a physical oceanography

research expedition to complete a CTD/water sample section, recovery and re-deployment of moorings along the Ellett line array, and will provide servicing for the biogeochemical Darwin Mounds mooring. The expected cruise dates (subject to change) are: (a) mobilisation on the 17th August 2026, Southampton (UK); (b) the cruise itself from the 20th August to 9th September, and (c) de-mobilisation in Glasgow (UK) from the 9th September.

We encourage applications from motivated ECRs with and without cruise experience because this a great [opportunity](#) to learn about large-scale physical oceanography observations and to gain ship-based field work experience. Please do not hesitate to contact me, tiago.dotto@noc.ac.uk, if you have any questions.

Challenger Society, TOS and IMECaN DEI Townhall

The Challenger Society, The Oceanography Society (TOS) and Interdisciplinary Marine Early Career Network (IMECaN) are excited to highlight our Ocean Sciences Meeting (OSM26) associated townhall meeting jointly, on 'Broadening the Ocean Science Workforce for a More Equitable, Inclusive, and Engaged Community', including insights from successful actions and the important role of scientific societies. This townhall will bring together Diversity, Equity and Inclusion (DEI) advocates and allies across the international marine science sector to share knowledge, highlight effective DEI interventions and foster community-driven progress.

We welcome all who share our aspirations for an inclusive and equitable ocean science community and/or are curious about DEI and ally-ship. We have four esteemed panellists joining us: Dr Julien Middleton, Prof. Edem Mahu, Dr Jeanette Davis, Prof. Charitha Pattiaratchi. Click [here](#) to find out more about their expertise and DEI activities. There will be opportunities for community discussion and we hope to see you there; Thursday 26th February, 12:45-13:45, at Forth (SEC). More information about the townhall meeting can be found [here](#).

FMRI Townhall Meeting

Shaping the Future of UK Ocean Observing Join this discussion and share your perspectives on:

- FMRI's vision for next generation ocean observing systems

- How an advanced system could transform the UK's ability to track ocean change, from long-term climate impacts to sudden events such as marine heatwaves

We'll also take insights from NERC's BIO-Carbon programme and learn how marine autonomy has been used alongside research ships to transform the way we observe ocean carbon storage. All marine stakeholders are welcome and encouraged to attend; Tuesday 24th February, 12:45 – 13:45, Hall 3, Kelp Forest (SEC). More information can be found [here](#).

NOCA AGM 2026

Registration is now open for the [15th AGM of the NOC Association](#) which will take place on Tuesday 19th and Wednesday 20th May 2026. This free, on-line event is open to all and will be conducted via Zoom, across consecutive mornings, each starting at 10:00 and ending at 12:15, with log on from 09:45, each day.



This year's AGM will include presentations on the role of the [NOC Association](#), updates on [Marine Science UK \(MSUK\)](#), the [Marine Facilities Advisory Board](#), shaping the future of the UK's national marine science capabilities and infrastructure, the [Atlantic Climate and Environment Strategic Science \(AtlantiS\)](#) programme, the [Antarctica InSync](#) Programme, how NERC's funding landscape is changing, and the Horizon Europe programme and UK engagement. For any questions about the NOCA or the AGM, please email [Jackie Pearson](#), Secretary to the NOCA.

VIEWS

Visit the GEORGE EU consortium at the 2026 ICOS Science Conference

GEORGE will be at the [ICOS Science Conference 2026](#), in Lund, Sweden and online, between the 15th and 17th of September this

year. Members of the GEORGE EU consortium are convening a dedicated session, session 5, entitled "Advancing marine CO₂ observations through next-generation sensors, integration and platform innovation". Conveners: Laurent COPPOLA, (Sorbonne University), Socratis Loucaides (NOC), Edouard Leymarie (LOV/CNRS), Ute Schuster (Univ. Exeter), Simo Cusi (EMSO ERIC), Romain Cancouet (EURO-ARGO ERIC), Richard Sanders (NORCE and OTC-ICOS), Janne-Markus Rintala (ICOS ERIC)

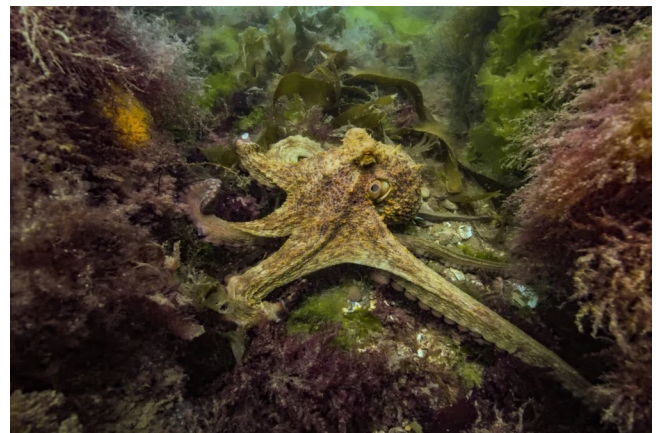
Accurate in-situ quantification of oceanic CO₂ fluxes is crucial for the determination of global CO₂ fluxes with high confidence, due to spatial and temporal variability that numerical models cannot always identify. Yet this remains a major challenge for carbon cycle research. Progress now depends on the development and convergence of innovative technologies (sensors, samplers) that can deliver long-term, high-quality measurements across diverse ocean environments.

This session will bring together projects, research infrastructures and institutes working to improve marine CO₂ observing technologies, from novel autonomous sensors to integrated observing platforms such as gliders, floats, buoys, moorings and surface vehicles. Discussions will address sensor calibration and validation, data interoperability, and the integration of these technologies into operational networks such as European Infrastructures (ICOS, EMSO, Euro-Argo) and international networks (SOCONET). Initiated by the Horizon Europe project GEORGE, which co-develops and demonstrates next-generation sensors and integrated platforms across European Research Infrastructures, this session also welcomes contributions from related initiatives, including those exploring new observational data analysis and quality control methods and tools including Artificial Intelligence.

By fostering exchanges across disciplines and communities, the session aims to define a shared technological vision for the future European and global marine carbon observing system. The abstract submission deadline is 6th March 2026, 15:00 CET; read more at <https://george-project.eu/2026/01/26/george-at-icos-science-conference-2026/>

Octopus bloom off Southwest UK: New report reveals scale, causes and consequences

A new report led by the [Marine Biological Association \(MBA\)](#) in collaboration with [Plymouth Marine Laboratory \(PML\)](#), the [University of Plymouth](#) and an independent consultant has revealed that a dramatic population bloom of the common octopus (*Octopus vulgaris*) off the Southwest coast of the UK is having significant effects on fisheries and marine ecosystems. The study, [Common octopus \(*Octopus vulgaris*\) blooms off the Southwest of the UK: History, trends, causes and consequences](#), was funded by Defra, Plymouth City Council and Devon County Council and draws on data from scientists, fishermen and citizen scientists.



A Common Octopus pictured off the coast of Torbay.
c. Keith Hiscock MBE

The common octopus is native to UK waters but is typically rare, favouring warmer seas further south in Europe and the Mediterranean. Only four major population 'blooms' have been recorded in the past 125 years: in 1899-1900, 1932-33, 1950-51, and now since 2025. The current bloom, which really accelerated from



January last year, appears to be at least as extensive as any previously recorded and is still continuing. Lead author [Dr Bryce Stewart](#), Senior Research Fellow at the MBA and Associate Professor at the University of Plymouth, said: "This is an extraordinary event that tells us a lot about how marine life is responding to a warming ocean, and the survey reveals the mixed effect that this has had on fisheries."

The research team found that unusually warm sea temperatures during bloom years and the

preceding year were a consistent factor in all recorded blooms. Sustained easterly winds may have helped transport young octopus larvae from the Channel Islands and northern France. Ocean current modelling supports this, showing that larvae from Guernsey, which has seen its own octopus bloom since 2024, likely contributed to the UK surge. A survey of 40 fishermen revealed mixed impacts from the octopus surge. While some adapted to catching octopus and benefited economically for a period of time, over half reported negative impacts, particularly those targeting brown crabs, lobsters and scallops, which suffered heavy predation from the octopus. Catch rates for those species dropped by 30% to 50% in 2025. Concerns are therefore growing about long-term damage to crab, lobster and scallop stocks.

“Establishing the full effect of the current bloom on other species such as crabs, lobsters and scallops will require further research and monitoring,” said Dr Stewart. The report concludes that octopus blooms could become a regular feature of UK seas, requiring support for gear adaptation and sustainable fishery development. Dr Stewart concluded: “This is not just a fisheries story; it’s an ecosystem story. We need to understand how these octopus blooms affect everything from shellfish stocks to top predators, and how to adapt in a rapidly changing ocean.”

New Ocean Visions Report: Can Phytoplankton Help Close the Carbon Dioxide Removal Gap?

At the beginning of February, Ocean Visions released a comprehensive plan to answer critical questions regarding whether and how phytoplankton, the microscopic algae at the base of marine food webs, might contribute to the large-scale carbon dioxide removal (CDR) needed to meet global climate goals. [The report](#) evaluates the current state of knowledge on this category of marine carbon dioxide removal (mCDR) approaches that would enhance the ocean’s natural ability to absorb and store carbon. The report identifies what is already known about phytoplankton-based pathways, as well as the key scientific, environmental, and social questions that still must be answered so that decisions about future development or deployment can be made.

“Addressing the greatest threat to the ocean, ongoing climate disruption, requires that society both cut greenhouse gas emissions and remove enormous amounts of carbon dioxide pollution,” said Ocean Visions CEO Brad Ack. “This report highlights the remaining work needed to determine whether and how phytoplankton-based approaches can contribute to climate stabilization.” The ocean is the largest carbon reservoir on Earth and has already absorbed about 25 percent of all carbon dioxide (CO₂) emitted from human activities. Phytoplankton, microscopic marine plants, absorb CO₂ as they grow and, through natural biological processes, a portion of that carbon sinks into the deep ocean where it can be stored for hundreds to thousands of years.

[The report](#) concluded that:

- There is strong evidence that phytoplankton-based pathways have the potential to meaningfully contribute to CDR goals
- Continued research and testing is necessary to determine whether phytoplankton-based pathways should be pursued at scale
- Decisions should be guided by scientific evidence, ethical considerations, and public engagement

Informed by an international advisory board, the report was produced through a year-long investigation of all known phytoplankton-based approaches and focused on those with potential to reach climate-relevant scale. The work incorporated extensive literature review, multiple rounds of expert interviews and workshops, and a public comment period. Numerous comments received at the draft stage were incorporated into the final report. That feedback and a summary of resulting changes can be found [here](#).

Across all phytoplankton-based pathways, the report identifies priority research needs, including:

- Improving quantification of net CDR via phytoplankton-based pathways by identifying the largest sources of uncertainty in these estimates and setting clear targets to reduce this uncertainty
- Improving ocean biogeochemical models to better understand long-term storage and large-scale impacts

- Strengthening understanding of the biological carbon pump, including how climate change is already altering it
- Advancing carefully designed field trials that maximize learning while addressing environmental and social concerns

The report calls for consideration of a dedicated research, development, and demonstration program on phytoplankton-based pathways, applying a stage-gate framework marked by clear decision points to advance, refine, pause, or stop efforts. Such a program could help coordinate research efforts, uphold transparency and ethical standards, and mobilize global collaboration.

SALTS

Thousands of oysters deployed in Belfast Lough to help revive endangered species

In a first for Northern Ireland, local nature conservation charity Ulster Wildlife has deployed 2,000 adult European oysters (*Ostrea edulis*) and more than 30,000 juvenile oysters, called spat, grown on scallop and mussel shells. This marks the charity's next step in plans to restore oyster reefs, vital habitats that support the recovery of this threatened species and deliver wider benefits for people and the marine environment. European oysters disappeared from Belfast Lough more than a century ago, due to overfishing, pollution and habitat loss. A small surviving number were discovered in 2020, inspiring Ulster Wildlife to establish a network of protected nurseries, in Bangor, Glenarm, Belfast Harbour and Carrickfergus, to help bring the native species back from the brink.



Supported by Ulster Wildlife members, Belfast Harbour and DAERA, via the Carrier Bag Levy, this innovative pilot project will scale up the restoration of wild populations. As the oysters grow into adults, they will form a vital reef habitat supporting the health of our seas. European oysters, and other shellfish, help improve water quality, as each adult oyster can filter up to 200 litres of water a day, roughly the equivalent of a bath, removing nutrients and, in time, helping to provide coastal defences and vital habitat for juvenile fish.

Dr Nick Baker-Horne, Marine Conservation Manager with Ulster Wildlife, said: "This is a huge step forward in helping to restore this small but mighty ocean superhero. Over the past four years, our nurseries have thrived, and we have learned so much about these fantastic ecosystem engineers. Deploying them onto the seabed is the next step to restore our lost oyster reefs and, alongside our nurseries, we hope the population will grow, and create thriving habitats for all sorts of marine life. I'm excited to watch the oysters develop and use what we learn to guide even bigger deployment projects in Belfast Lough in the future." The oysters, delivered from The Oyster Restoration Company (TORC) from Scotland, were cleaned, screened and measured before being deployed onto the seabed by a team of staff and volunteers from the local nature conservation charity. Regular checks will be conducted to assess their survival and growth.

Simon Gibson, Marine, Environment & Biodiversity Officer at [Belfast Harbour](#), added: "The seabed deployment is an exciting expansion of the current drive to restore European oysters within Belfast Lough. This project, a first for NI, will support Belfast Harbour's sustainability ambitions by promoting improved water quality and bolstering marine biodiversity. We are proud to play our part in this pioneering project." [Find out more about our work to bring back the European oyster.](#)

World-first landers delve into Dark Oxygen mystery

Two world-first landers that can withstand 1,200 times the pressure on earth's surface will help answer one of the ocean's deepest mysteries, where does Dark Oxygen come from? Professor Andrew Sweetman of SAMS made waves in 2024 when his team discovered metallic nodules in the deep sea appeared to be producing

oxygen. These nodules, which contain highly sought-after metals, could clarify how animal life is distributed thousands of metres beneath the waves, where sunlight cannot penetrate, calling into question the prevailing scientific understanding that oxygen production is solely linked to sunlight, through processes such as photosynthesis.

But exactly how this oxygen is produced in the darkness of the deep ocean is still unclear. The Nippon Foundation has funded a three-year research project that convenes Professor Sweetman alongside geobiologist and Mars Rover veteran Professor Jeffrey Marlow from Boston University, and renowned chemist Professor Franz M Geiger, of Northwestern University, to answer this question. To find the answer the team of leading experts, known as The Nippon Foundation Dark Oxygen Research Initiative (DORI), has designed two highly specialised landers that resemble equipment more often associated with space exploration. Named Alisa and Kaia after Professor Sweetman's daughters, they will determine if the nodules spontaneously interact with salt water to create electricity, whether there's a biochemical process at work, or another, as yet unknown factor is at play. Prof. Sweetman said: "These landers are unique; they are the only instruments in the UK that can go to the deepest parts of the ocean, and they have to be able to withstand extraordinary pressures to answer one of the most fundamental questions we have about life in the deep ocean, how does it find oxygen to survive?"

The Nippon Foundation's funding includes construction of the world-first landers. The landers will be submerged in the Clarion Clipperton Zone (CCZ) in the central Pacific Ocean in the spring, with initial results expected later this year. IOC UNESCO has endorsed the project as a UN Ocean Decade activity. Mitsuyuki Unno, Executive Director of The Nippon Foundation said: "In collaboration with the three leading researchers, we have embarked on this research to uncover the mystery of Dark Oxygen and deliver concrete scientific findings that will benefit all nations. The Foundation's aim is to empower policy decisions and actions that responsibly balance deep-sea preservation with sustainable use on a global scale."



Prof. Andrew Sweetman of SAMS, who leads the DORI project, works on one of the new landers that will help the research team to understand Dark Oxygen production

The research team will submerge the landers, along with a device known as an Aquatic Eddy Covariance (AEC) lander, which will measure the 'flux' of oxygen in the area to determine any patterns in oxygen production, and whether or not other environmental factors could be at play. Alisa and Kaia will collect water samples, take precise measurements from the nodules, introduce chemical tracers, and discover whether protons linked to water oxidation are present, a key differentiator between electrolysis and other potential oxygen-generating mechanisms.

Prof. Sweetman added: "This truly is a global research initiative, and one which has global implications. We know there are several areas of the ocean where Dark Oxygen may have been identified. It is very exciting because whatever the research shows could help us answer some of the biggest mysteries about life on earth." For more information about Dark Oxygen, visit dark-oxygen.net.

CALENDAR

22nd-27th February 2026: Ocean Sciences Meeting 2026

Glasgow, Scotland

The OSM is the flagship conference for the ocean sciences and the larger ocean connected community. Every two years, the Ocean Sciences Meeting unifies the oceans community to share findings, connect scientists from around the world, and advance the impact of science. The Ocean Sciences Meeting 2026 is co-sponsored by the American Geophysical Union

(AGU), the Association for the Sciences of Limnology and Oceanography (ASLO), and The Oceanography Society (TOS). This time we look forward to seeing you in Glasgow, Scotland in February 2026. Visit the [Ocean Science Meeting website](#) for up to date information.

Session OT004: Autonomous observing technologies and methods for sustained ocean carbon observations and climate mitigation research. Topic Area: Ocean Technology and Observatories.

Oceanic carbon data and information are needed for accurate assessment of the ocean's carbon uptake rate and capacity. These insights are vital for shaping national and international climate policies and guiding mitigation strategies. Our ability to observe and model the oceanic carbon cycle depends strongly on the availability of sustained high-quality observations enabled by fit-for-purpose observing tools and methods. Such observations are also critical for evaluating current and future marine Carbon Dioxide Removal (mCDR) applications building the backbone of global Measurement, Monitoring, Reporting and Verification (MMRV) schemes.

Advancements in material science, ocean technology and evaluation of new sensing techniques are paramount in enabling ocean measurements on wide spatio-temporal scales necessary to: a) understand past, present and future changes in the global carbon cycle, and b) evaluate the feasibility, durability and efficiency of mCDR methods currently being investigated. We invite submissions from academic and government researchers, nonprofits and the ocean technology industry developing and evaluating novel tools and methodologies for direct observations of the seawater's carbonate system. The session aims to showcase the current state-of-the-art in ocean carbon observing and highlight new observing strategies using autonomous sensors and platforms. Technology performance evaluations in laboratory studies and field deployments are especially welcome.

Session PI010: Unraveling physical–biological interactions at meso- and submesoscales, <https://agu.confex.com/agu/osm26/prelim.cgi/Session/253850>.

Mesoscale and submesoscale structures, such as cyclonic and anticyclonic eddies, filaments, and fronts, play a fundamental role in shaping marine ecosystems. These dynamic features have been demonstrated to impact the distribution of nutrients and enhance biological activity across trophic levels. They influence key processes including phytoplankton blooms, larval dispersal, and the biological carbon pump. Despite the growing recognition of their importance, the complexity and scale of these interactions are still not well understood, limiting our ability to quantify their regional and global impacts.

Technological advancements, such as higher-resolution ocean models and new generations of satellites like PACE and SWOT, are creating unprecedented opportunities to study these fine-scale processes, while also posing new challenges for data interpretation and integration. This session invites contributions investigating the interplay between physical processes and biological responses at meso- and submesoscales. We aim to bring together observationalists, modellers, and theorists working at the interface of physics and biology to deepen our understanding of how ocean dynamics at these scales influence marine life.

Session AI006: Philippa Rickard (Heriot Watt University) is delighted to be co-chairing Session AI006, [The Influence of Marine Biota on Air-Sea Exchange Processes](#) alongside Dr Theresa Barthelmeß and Prof Dr Anja Engel (GEOMAR Helmholtz-Zentrum für Ozeanforschung Kiel), and Dr Ryan Pereira (The Lyell Centre for Earth and Marine Sciences).

Session CC006: Kate Fraser (SAMS) is co-chairing a session called "[Climate Change in the Deep Sea: Impacts, Interventions, and Cumulative Stressors](#)" in preparation for the IPCC AR7 process.

Session HC001: Jack Laverick (University of Strathclyde) is cohosting a session on "[Advances in Marine Conservation for Local-to-Global Sustainability](#)". This session will complement a new "Advances in marine conservation for local-to-global sustainability" special issue in the journal *Aquatic Conservation: Marine and Freshwater Ecosystems*.

Session HC003: Bahareh Kamranzad (University of Strathclyde) is chairing a session on [Arctic Maritime Safety, Climate Impacts, and Human–Environment Interactions](#). As Arctic sea ice rapidly retreats and ocean conditions evolve, maritime activities in the region are increasing, leading to complex environmental, operational, and societal challenges. This interdisciplinary session aims to explore the impacts of Arctic climate change on oceanic conditions, navigational safety, and human interactions.

Session CM006: Heather Hyewon Kim, Alicia Karspeck, Cristina Schultz and David Keller are hosting “[Modeling approaches for marine Carbon Dioxide Removal \(mCDR\)](#)”. There is growing interest in marine carbon dioxide removal (CDR) approaches, including ocean alkalinity enhancement, direct ocean capture, nutrient fertilization, biomass sinking, macroalgae cultivation, and artificial upwelling, as a portfolio of approaches aiming to remove 10–20 gigatons of atmospheric CO₂ annually by mid- to late-century. Modeling these approaches offers insights that enable assessment of carbon sequestration efficacy, permanence, and ecological impacts across broad spatial and temporal scales under various scenarios. These tools are critical for aligning mCDR deployments with climate goals and environmental safeguards.

Session OB015: Sarah Cryer (Heriot Watt University) is co-chairing a session on [Marine life and Carbon cycling in a changing ocean: Integrating observations, AI, and models \(OB015\)](#) which relates to the joint BIO-Carbon – MASTS international data workshop on the role of marine biology in helping the ocean store carbon.

Session OB029: Alex Poulton (Heriot Watt University) is chairing a session on [The Open Ocean Carbonate Pump: From Alkalinity to Ecology \(and Back Again\) \(OB029\)](#). This session will explore different aspects related to pelagic carbonate biogeochemistry that underpins the magnitude and functioning of the carbonate pump.

10th–11th March 2026: Bridging the Skills Gap: Computer Vision Training for Marine Ecologists
Cambridge, UK

This 2-day in-person workshop at the British Antarctic Survey will introduce the core computer vision concepts, tools and workflows needed to turn raw marine imagery into ecological insight. Participants will leave with reproducible, reusable workflows they can apply directly to their own datasets. Free to attend (with limited travel/accommodation support) and open to UK based researchers, with priority for PhD students and ECRs in benthic ecology. No prior programming or machine-learning experience required. More information link: <https://sams-tom.github.io/marine-workshop-site/>.

10th-12th March 2026: Oceanology International
London, UK

[Registration](#) is now open for Oceanology International. Bringing together more than 8,000 professionals and 500 exhibitors, this is the leading platform for the ocean technology and marine science community.



See cutting-edge innovations, grow your network, and learn from industry leader like Gardline, Saab, Oceaneering, Teledyne Marine, Kongsberg, and more; all in one place. [Register](#) today and stay ahead in this dynamic industry.

13th-17th April 2026: Environmental Interactions of Marine Renewables conference
Oban, Scotland, UK

The Scottish Association for Marine Science (SAMS) is organising the next Environmental Interactions of Marine Renewables (EIMR2026) conference. This event will bring together marine renewable energy experts from across the globe. It will represent all disciplines that form the landscape of marine energy research, a foundation that continues to stimulate new and exciting discoveries. Registration is currently open. Details of the conference are available [online](#).

3rd-8th May 2026: European Geophysical Union General Assembly 2026
Vienna, Austria and Online

The EGU General Assembly brings together geoscientists from all over the world to one meeting covering all disciplines of the Earth, planetary, and space sciences. The EGU aims to provide a forum where scientists, especially early career researchers, can present their work and discuss their ideas with experts in all fields of geoscience. The [registration](#) for the EGU General Assembly 2026 is now open.

ITS1.19/AS4.8 Advancing Environmental sciences with Innovation and Research Infrastructures. Co-Convened by the [GEORGE](#) and the [ENVRINNOV](#) EU projects; read the full description: <https://www.egu26.eu/session/57671> This dedicated session at EGU 2026 will focus on innovation across environmental domains atmospheric, marine, terrestrial, and solid earth sciences. It will cover topics on the role of emerging technologies and service-oriented approaches in shaping the future of environmental monitoring. The session is aimed at all industry professionals, researchers, and students interested in innovation in environmental sciences, including Research Infrastructures (RIs), private companies offering scientific instrumentation or services, industrial end-users and policymakers.

OS4.8 The Copernicus Marine Service and the European Digital Twin of the Ocean. The Copernicus Marine Service provides regular and systematic reference information on the physical (including sea-ice and wind waves) and biogeochemical states of the global ocean and European regional seas. This capacity encompasses the description of the current ocean state, the prediction of the ocean state a few days ahead, and the provision of consistent data records for recent decades. In the coming years, Copernicus Marine will implement next-generation ocean monitoring and forecasting systems and prepare new services for the coastal ocean and marine biology. Copernicus Marine will also progressively embrace the new capabilities of digital services in synergy with the European Digital Twin of the Ocean (DTO) developments.

The European DTO will connect and interoperate, on a common digital platform, a large variety of ocean and coastal numerical tools, allowing for global, regional-to-coastal model configurations and the co-development of new simulations and what-if-scenarios for

enhanced on-demand ocean forecasting and ocean climate prediction.

The session focuses on the main Copernicus Marine Service research and development activities on ocean modelling; data assimilation; processing of observations, impact and design of in situ and satellite observing systems; verification, validation, and uncertainty estimates; monitoring and long-term assessment of the ocean physical and biogeochemical states. The session also includes research activities dedicated to the next generation of ocean monitoring and forecasting systems (improved Arctic monitoring, ensemble forecasting, regional ocean climate projections, use of artificial intelligence) and new services for the coastal ocean and for marine biology.

The session will also encompass research activities on the development of the European DTO, including the next generation of ocean models combining artificial intelligence and high-performance computing, dedicated infrastructures and platforms as well as protocols and software and the definition of what-if-scenarios. Presentations are expected from research teams involved in the Copernicus Marine Service, in the European DTO, in the development of in situ and satellite observing systems and of downstream applications and in relevant Horizon Europe projects. Contributions from the international OceanPredict community and from the relevant UN Decade programmes and projects are expected..

19th-20th May 2026: NOC Association Annual General Meeting 2026

Online

The 15th AGM of the NOC Association will be held on Tuesday 19th and Wednesday 20th May 2026. This free, online event will take place on Zoom, across two consecutive mornings, each starting at 10:00 and ending at 12:30. The registration page and details of the agenda will be available shortly and all are warmly welcome to participate. For any enquiries, either about the AGM or the NOC Association, please contact Jackie Pearson, Secretary to NOCA: jfpea@noc.ac.uk

25th-29th May 2026: Liège Colloquium

Liège, Belgium

Dear colleagues, for the 57th International Liège Colloquium "Submesoscale Processes in the

Ocean" please visit <https://www.ocean-colloquium.uliege.be>. The colloquium will be in hybrid mode, but we would really like to see you here in person. Link to terms of reference: <https://www.ocean-colloquium.uliege.be/overview>

Confirmed Keynote Speakers:

Alice Della Penna (University of Auckland)
 Channing Prend (University of Edinburgh)
 Amala Mahadevan (Woods Hole Oceanographic Institution)
 Jacob Wenegrat (University of Maryland)
 Ananda Pascual (IMEDEA, CSIC)
 Abigail Bodner (Massachusetts Institute of Technology)
 Patrick Marchesiello (LEGOS, IRD, France)

We will also host a hands-on training session on the study of submesoscale processes using satellite data, organized by EUMETSAT. We are looking forward to seeing you in Liège.

19th - 24th July 2026: International Coral Reef Symposium 2026

Auckland, New Zealand

ICRS is the largest conference for coral reef science, run by the International Coral Reef Society every four years, this time hosted by Victoria University of Wellington, New Zealand. Please visit the [conference website](#) for further information. The following sessions may be of particular interest for UK marine scientists engaged in coral reef research:

Session 10: From knowledge to action: Tools and stories to tackle water pollution

Session 19: Modelling coral reef ecosystems across scales

Session 21: Plastic pollution in coral reefs: from emerging evidence to future solutions

Session 52: Exploring the sustainability and resilience of coral reef fisheries

Session 60: Pelagic reefs: how oceanic inputs shape the structure and function of coral reefs

Session 67: A window on future oceans: forecasting multi-scale impacts of the

Anthropocene on coral communities using extreme systems as natural laboratories

Session 99: Cross-habitat linkages and coral reef integrity in connected coastal seascapes

Session 116: Biodiversity and transformation in Indian Ocean coral reefs

Session 117: Understanding mesophotic coral ecosystems: The way forward

Session 128: Exploring the new, blue frontier: Coral reef science of the South Pacific

8th-10th September 2026: Challenger Society for Marine Science Conference

Bangor, UK

42 years on from the first modern Challenger conference which was also held in Bangor; then organised by John Simpson, Paul Linden, Steve Thorpe and Roy Chester, and run by amongst others a very junior Ed Hill and Bill Turrell.

We are delighted to announce our keynote speakers for the conference. Gerard McCarthy of Maynooth University, Ireland will talk about "The Atlantic on the edge: where is the AMOC going and where did it come from?". Kate Hendry from BAS will ask "Do you want ice with that? Biogeochemical changes in polar coastal seas" whilst Emma McKinley of Cardiff University will be talking about her work on the Human Ocean. Also, there maybe other news of interest in the latest edition of the Bridge: <https://www.bangor.ac.uk/sos/newsletter>.

Further information to follow. We can also accommodate Special Interest Group (SIG) meetings around the conference (on the 7th and 11th September) please contact Tom Rippeth for further information, t.p.rippeth@bangor.ac.uk. If you are interested in sponsoring events at the conference please contact Terry Sloan, terry@planet-ocean.co.uk.

15th–17th September 2026: ICOS Science Conference 2026

Lund, Sweden

GEORGE will be at the [ICOS Science Conference 2026](#), in Lund, Sweden and online. Members of the GEORGE EU consortium are convening a dedicated session, session 5, entitled "Advancing marine CO₂ observations through next-generation sensors, integration and platform innovation". Conveners: Laurent COPPOLA, (Sorbonne University), Socratis Loucaides (NOC), Edouard Leymarie (LOV/CNRS), Ute Schuster (Univ. Exeter), Simo Cusi (EMSO ERIC), Romain Cancouet (EURO-ARGO ERIC), Richard Sanders (NORCE and OTC-ICOS), Janne-Markus Rintala (ICOS ERIC)

Accurate in-situ quantification of oceanic CO₂ fluxes is crucial for the determination of global CO₂ fluxes with high confidence, due to spatial and temporal variability that numerical models cannot always identify. Yet this remains a major challenge for carbon cycle research. Progress now depends on the development and

convergence of innovative technologies (sensors, samplers) that can deliver long-term, high-quality measurements across diverse ocean environments.

This session will bring together projects, research infrastructures and institutes working to improve marine CO₂ observing technologies, from novel autonomous sensors to integrated observing platforms such as gliders, floats, buoys, moorings and surface vehicles. Discussions will address sensor calibration and validation, data interoperability, and the integration of these technologies into operational networks such as European Infrastructures (ICOS, EMSO, Euro-Argo) and international networks (SOCONET). Initiated by the Horizon Europe project GEORGE, which co-develops and demonstrates next-generation sensors and integrated platforms across European Research Infrastructures, this session also welcomes contributions from related initiatives, including those exploring new observational data analysis and quality control methods and tools including Artificial Intelligence. By fostering exchanges across disciplines and communities, the session aims to define a shared technological vision for the future European and global marine carbon observing system. The abstract submission deadline is 6th March 2026, 15:00 CET; read more at <https://george-project.eu/2026/01/26/george-at-icos-science-conference-2026/>

15th–18th September 2026: ICES Annual Science Conference 2026

Brest, France

Submit your abstract to present your research, there are 18 theme sessions and 7 network sessions covering topics like:

- Advancing integrated and ecosystem-based fisheries management
- Climate change impacts on marine systems
- Fisheries science and sustainability
- Human pressures, impacts, and mitigation
- Innovation, technology, and data for marine science

Explore all the sessions [here](#), Submission deadline 25 February 2026; learn more and submit your abstract [here](#).

8th–10th October 2026: Arctic Circle Assembly

Reykjavik, Iceland

The call for Session Proposals is now open. Governments, universities, companies, research institutions, organizations, associations, and others are invited to submit Session proposals for the 2026 Arctic Circle Assembly. Deadline for submitting proposals is 23:59 May 1, 2026, Alaska Standard Time (AKST). Open call for the 2026 Frederik Paulsen Arctic Academic Action [award](#).

28th-30th October 2026: Global eDNA Conference

Seattle, USA

Hosted in partnership with the Marine Technology Society's [MTS eDNA Committee](#) and the [University of Washington's eDNA Collaborative](#), the conference will convene a global community of eDNA enthusiasts from across economic sectors to build connections, learn from one another, and further advance eDNA science. [The conference](#) will feature three days of concurrent sessions, focusing on a diverse array of eDNA-related topics (e.g., conservation applications, quantitative analysis, community engagement, policy-relevant communication, technological development, and many others), as well as a set of plenary speakers and plenty of unstructured time to make connections on your own.

17th-20th November 2026: World Conference on Marine Biodiversity 2026

Bruges, Belgium

Submit your research for a session on ocean acidification at the [World Conference on Marine Biodiversity 2026](#). This call welcomes diverse contributions from laboratory, field, to modelling and conceptual studies. During the session, the Decade Programme [Ocean Acidification Research for Sustainability \(OARS\)](#) will highlight innovative solutions to strengthen cross-regional collaboration and advance collective understanding of ocean acidification. Abstract Deadline: 17 March 2026, 23:59 UTC. [Find more information here](#).

7th-9th April 2027: 2027 Ocean Decade Conference

Rio de Janeiro, Brazil

Co-organized by the Intergovernmental Oceanographic Commission (IOC) of UNESCO, Brazil's Ministry of Science, Technology and Innovation (MCTI), and the City of Rio de Janeiro, the 2027 edition will build on the

outcomes of the [2024 Ocean Decade Conference](#) in Barcelona, Spain, and carry forward the ambitions and milestones of the

Ocean Decade; UN Decade of Ocean Science for Sustainable Development 2021-2030 ('Ocean Decade').

The CSMS email address is challenger.society@gmail.com. Contributions for next month's edition of Challenger Wave should be sent to: john@myocean.co.uk by the 27th February.

JOBS and OPPORTUNITIES

**University of East Anglia
School of Environmental Sciences**

**Lecturer in Physical Oceanography
Ref: ATR1734**

An exciting opportunity has arisen for a Lecturer to join the School of Environmental Sciences. The successful candidate will have research interests in shelf sea oceanography, including the physics of shelf seas and the shelf break, as well as estuarine and/or coastal oceans. You will join the Centre for Ocean and Atmospheric Sciences (COAS) within the School of Environmental Sciences.

You will be expected to develop international-calibre research programmes complementary to existing strengths in ocean science at UEA and be open to our growing research activities in coastal science. Research that exploits the ocean glider fleet owned and operated by UEA is encouraged. You will be expected to supervise and mentor postdoctoral and PhD researchers, contribute to undergraduate and/or postgraduate teaching in environmental sciences and/or data science, and carry out associated administrative duties.

This full-time post is available from 1st September 2026 on an indefinite basis. The deadline for applications is the end of March. For further details see <https://vacancies.uea.ac.uk/vacancies/2034/lecturer-in-physical-oceanography-atr1734.html>

[PISCO] PhD Position in Modeling the Contribution of Alpha-Cyanobacteria to Ocean Biogeochemical Cycles (CyaNEMO)

We are looking for a motivated candidate for a PhD project co-supervised between the University of Nantes (Damien Eveillard, COMBI Team, LS2N) and the Biological Station of Roscoff (Laurence Garczarek, ECOMAP Team, UMR7144). The PhD topic is: **Modeling the Contribution of Alpha-Cyanobacteria to Biogeochemical Cycles in the Oceans (CyaNEMO)**

Half of the PhD funding and associated operational costs are already secured through the ANR TaxCy project, and additional funding applications are currently underway.

Summary This PhD project aims to integrate the metabolic diversity of alpha-cyanobacteria, the most abundant photosynthetic organisms in marine environments, into the Nemo-PISCES climate model to improve the representation of oceanic biotic processes. The project involves reconstructing genome-scale metabolic models for cyanobacteria (CyanoGEMs), defining and validating metabolic niches using experimental data, and integrating them into biogeochemical simulations. By combining genomic data and ecogenomic approaches, this work will contribute to a novel numerical modeling framework based on constraint programming to better understand the ecological role of alpha-cyanobacteria and refine climate predictions.



Laurence Garczarek

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UMR7144: <http://www.sb-roscoff.fr/fr/umr-adaptation-et-diversite-en-milieu-marin>

There are jobs in the MASTS newsletter

New vacancies:

[Visit our Vacancy Webpage to find all the positions listed below.](#)

- ✓ Postdoctoral Research Fellow Role within the BRICONS Project – apply asap
- ✓ Administrator/Receptionist – SAMS UHI – apply by 23/2/26
- ✓ Dean of Research and Innovation – UHI – apply by 24/2/26
- ✓ Research Assistant - HW - apply by 27/2/26
- ✓ Postdoctoral Researcher in (ocean) biogeochemical modelling – Utrecht University – apply by 1/3/26
- ✓ Land Management Biodiversity Advisor - JNCC - apply by 1/3/26
- ✓ Postdoctoral Research Fellow (MOSAIC Project) – QUB – apply by 9/3/26
- ✓ SCAMP Project Officer – SFP – apply by 13/3/26
- ✓ Postdoctoral Researcher in sediment-water exchange – NIOZ – apply by 15/3/26
- ✓ Internship opportunity - [IFCA Paid Summer Placement 2026](#)

[New PhD studentships](#)

[PhD: Data-driven modelling of phytoplankton blooms and ocean carbon uptake](#)