December 2024

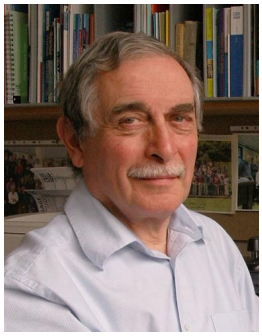
Challenger Wave

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

NEWS

Lifetime achievement award

Professor Peter Liss has been awarded a Lifetime Achievement Award by the Surface Ocean, Lower Atmosphere Study Project (SOLAS). He was presented the award while attending the SOLAS Open Science Conference in Goa, India in November. The award was presented in appreciation of his "founding role, leadership, inspiration, and sustained contributions to the first two decades of SOLAS, and the resulting global expansion of air-sea interaction research".



A tiny island with a big conservation impact

Despite having an on-island population of approximately 40 people, the Pitcairn Islands manage the third largest continuous and highly protected marine area in the world.

Photo: Protect Blue

Recently awarded a platinum-level Blue Park Award, the marine protected area (MPA) preserves a rare, fully intact marine ecosystem within its expansive 842,000 km^2 boundary. It provides sanctuary to over 1,250 marine species from vibrant coral reefs to endangered humpback whales and rare sea birds. With their Marine Science Base, the Pitcairn Islands offer the opportunity for scientists to study a uniquely pristine coral ecosystem. This marine environment serves as a vital scientific reference point in measuring the profound impacts of climate change.

On the 5th of November, representatives from the Government of the Pitcairn Islands and Blue Belt Programme attended the Marine Alliance for Science and Technology for Scotland (MASTS) Annual Science Meeting in Glasgow. In an extended session they proudly shared the extensive work and achievements of their MPA to the global marine science community.

Representatives from the Blue Belt Programme and Government of the Pitcairn Islands. From left to right: Alasdair Hamilton, Prof Murray Roberts, Hannah Wolstenholme, Lewis Brady and Joseph Peters.

Through the MASTS conference, the Pitcairn Island MPA received global recognition for the tireless efforts of its community, scientists and partners that support their MPA. To discover more about the Pitcairn Islands extensive MPA, the ecosystem it is safeguarding and how they're contributing to

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global marine science through their science base, visit their website.

Scientists solve early 20th century cold anomaly puzzle

Expert knowledge of how early sea surface temperature measurements were taken has helped to explain a cold anomaly in early 20th century climate data. The cold period, between 1900 and 1930, has puzzled scientists for decades, as the sea surface temperature measurements were much colder than temperatures measured over land and inconsistent with climate models. Now, thanks to an analysis of the underlying raw temperature measurements by an expert at the UK's National Oceanography Centre (NOC), a new study, led by the Leipzig University and published in *Nature,* has shown we now know the reason.

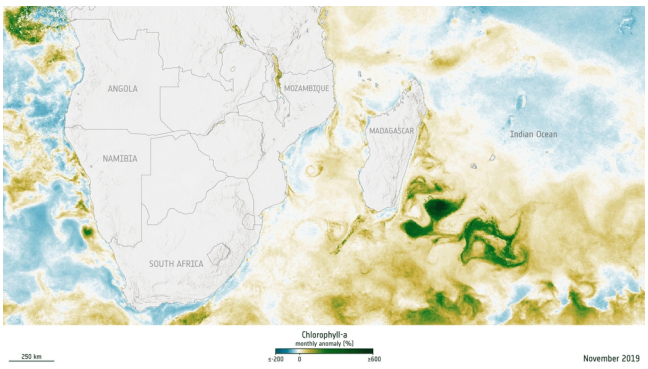
In the early 20th century most measurements were of the temperature of water samples taken in canvas buckets.

The cold anomaly in the data can be traced back to changes in how observers aboard ships of different nations made surface temperature measurements during this period. The results of the study have implications for our understanding of past climate variability and future climate change. NOC's Dr Elizabeth Kent provided in-depth knowledge about how sea surface temperature measurements were made to the study. She said, "Historical measurements of sea surface temperature were usually made with great care, but the methods used mean that measurements made in the past are not as accurate as today. In the early 20th century most measurements were of the temperature of water samples taken in canvas buckets. The samples cooled by evaporation during the time taken to make the measurement and the instructions on how quickly to take the measurement varied between nations and over time. Existing global surface temperature estimates contain adjustments to broadly account for the effects of changing measurement methods on the observations, but this period proved particularly challenging due to rapid changes in numbers of ships from many different nations. A more detailed analysis of the different data sources is needed to improve climate records and projections of future climate."

Lead author and Junior Professor for Climate Attribution at Leipzig University Dr Sebastian Sippel stresses, "Our latest findings do not change the long-term warming since 1850. However, we can now better understand historical climate change and climate variability. Correcting this cold period will increase confidence in the amount of observed warming, changing what we know about historical climate variability and improve the quality of future climate models."

South African drought dust fuelled record ocean bloom

Increasing drought events in southern Africa could benefit Indian Ocean marine life and atmospheric carbon removal, according to a new study of the Madagascar Bloom, one of the world's largest recorded phytoplankton blooms.



Unusual phytoplankton bloom. Credit:ESA Climate Change Initiative Ocean Colour.

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The study, led by the University of Athens (NKUA) and co-authored by scientists at the UK's National Oceanography Centre (NOC), linked the unprecedented marine algal bloom to an influx of nutrient-containing dust blown over the Indian Ocean from South Africa. This saw phytoplankton levels at three times the level normally expected at the time of year it occurred, spreading from southeast of Madagascar into the wider Indian Ocean for three weeks longer than normal. These marine algae form the basis of the marine food chain and help to remove carbon dioxide from the atmosphere by using it to grow then being eaten or dying and falling as organic matter to the seafloor. NOC co-author Dr Fatma Jebri, says, "Our study shows how African desert dust being blown over and deposited onto the ocean surface was key in triggering this unprecedented oceanic phytoplankton bloom in the Southeast of Madagascar, at a time of the year when blooms are uncommon."

Professor Meric Srokosz, also from NOC, adds, "This is important as it suggests that as deserts release more dust into the air and that dust settles on the ocean's surface, it could help phytoplankton growth, potentially increasing the amount of CO2 the ocean absorbs from the atmosphere." The study used satellite data to study the causes of major phytoplankton blooms, focusing on the unprecedented Madagascar Bloom in late 2019 to early 2020, which was found to be the largest on record going back 24 years.

It's already known that dust from the Sahara Desert often crosses the Atlantic Ocean to the Americas and that when these particles settle on land or in the ocean, they deliver essential nutrients that may boost plant and marine life growth. However, the relationship between desertification, dust emissions and ocean fertilisation has been poorly understood. The new study, published in PNAS Nexus, marks a significant step in unravelling these connections.

The scientists worked through the European Space Agency's (ESA's) Living Planet Fellowships Poseidon and Pyroplankton. Lead author, John Gittings, from the University of Athens, says, "In addition to satellite data from the ESA Climate Change Initiative Ocean Colour project, we utilised information from ESA's Climate Change Initiative Soil Moisture project and ESA's Science for Society Biological Pump and Carbon Exchange Processes project. We also incorporated satellite data from the Copernicus Atmosphere Monitoring Service and the Copernicus Marine Service. "Having access to such rich satellite datasets enabled us to clearly track the extent of this massive bloom and pinpoint the dust events responsible for it."

History of Oceanography SIG

The Challenger Society Special Interest Group on the History of Oceanography will be having a series of zoom webinars in 2025. The talks will be at 5pm UK time on Wednesday evenings (3rd Wed of the month):

15th January 2025: Philip Pearson: Remembered Lives, The Remarkable Seamen of the Challenger Expedition.

19th February 2025: David Bowers, University of Bangor: The Loch Ness Monastery: a Tale of Edwardian Scientists and Monks.

19th March 2025: John Gould, National Oceanography Centre: From Swallow Floats to Argo, 50 years of Technology Development.

16th April 2025: Gwyn Griffiths, National Oceanography Centre: Autonomous Underwater Vehicles in the Polar Regions: The First Fifty Years.

21st May 2025: Jo Williams, National Oceanography Centre: Using Citizen Science to Rescue Historical Tide Gauge Data.

17th September 2025: Gillen D'Arcy Wood, University of Illinois Urbana-Champaign: The Wake of HMS Challenger.

You can join the first one by Philip Pearson by using this link (the link might be different for each

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talk so watch out for updates) and feel free to pass this message to colleagues.

Blue Skies ahead for MASTS

The Marine Alliance for Science and Technology Scotland is leaving Twitter (now X). A statement in their newsletter in October expressed that "after much consideration we have decided to step away from Twitter on 20th January 2025 due to ongoing concerns about its direction and functionality." However, they are not going far; you can join them on BlueSky to get all your MASTS updates, news, as well as exclusive content.

New to BlueSky ?, MASTS have Introduced the Scottish Marine Science Starter Pack: "We have curated a starter pack that enables you to follow people and organisations in Marine Science at the click of a button. The list is growing day by day, helping to connect people in Marine Science on BlueSky." Find the Starter Pack here. Want to be added to the Starter Pack ? Find out more here. MASTS are also in the process of starting a MASTS specific thread to connect all their members and wider community together to share and collaborate. Stay tuned for more updates.

Call for EMB Ambassadors and mentors

The European Marine Board are pleased to announce that they have launched a call for two new EMB Ambassadors. They will take up the post in April 2025 and serve a two-year term until spring 2027, after which they will join the EMB Ambassador Alumni programme. Alongside this call for Ambassadors, as proposed at the EMB Autumn Plenary 2021 meeting, and after a successful first year of the mentorship programme in 2022, we are again opening a call for Ambassadors mentors. If you would be willing and interested to be a mentor for one of the EMB Ambassadors, please contact the EMB Secretariat to find out more.

What is the Ambassador programme? EMB Ambassadors, who are early career researchers, work with the EMB Secretariat to help promote marine sciences (both natural and social) and Ocean matters, and EMB activities in particular, to their peers. The Ambassadors gain access to and knowledge about the European marine science-policy landscape, and EMB gains valuable insight and the ability to reach out to new audiences in new ways. You can find out more about the programme here. Ambassadors receive a 2,000 EUR stipend spread over the two years of the programme and an additional budget of up to 3,000 EUR to cover costs linked to events, travel, and communications.

Who can apply? Any PhD student, with more than 2 years of PhD funding left, or post-doc researcher, with at least two years left on current contract. EMB Ambassadors can be stationed inside or outside the EU and can have a background in any aspect related to the marine environment, including natural sciences, social sciences and humanities, interdisciplinary research, and/or science communication. It isn't a requirement to be an EU citizen, however Ambassadors do need to have a demonstrable link with an EMB Member Organization. It should be noted that EMB aims to achieve balance within its current cohort of Ambassadors, therefore it is extremely unlikely that a new Ambassador would be selected who is in the same country and/or at the same institute as a currently serving Ambassador. The full call for applications, and the application form, can be found on the EMB website: https://www.marineboard.eu/vacancies. The deadline for applications is Sunday 2nd February 2025 at midnight CET.

Save the Date, Deep-Sea Ecosystems SIG meeting in Newcastle 15th-16th July 2025

The 2025 meeting of the Deep-Sea Ecosystems Special Interest Group will be in person (remote attendance to be confirmed), hosted by Will Reid at Dove Marine Lab on the outskirts of Newcastle on 15th-16th July next year. More information about the meeting will be circulated in the New Year.

The IMarEST launches Marine Jobs: Find your ideal role

We are delighted to announce the launch of Marine Jobs, the official job portal of the IMarEST for marine, engineering, science, and technology professionals. Marine Jobs aims to bridge the gap between employers and top-tier talent in the marine industry as a critical hub, providing jobseekers with a wide range of opportunities, and giving recruiters access to a qualified, globally engaged audience.

From renewable energy to offshore engineering, Marine Jobs is set to serve as a key resource for recruiting across various sectors within the maritime industry. Whether you are looking to

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advance your career, or seeking to recruit talented team members, Marine Jobs is your ideal destination. Visit the site today to see almost 300 current vacancies and register for personally tailored job alerts by email. Please note that the sign-in option for Marine Jobs is not connected to My IMarEST. Browse jobs without signing in, or create a new account to save jobs and sign up for alerts.

VIEWS

ecoSUB Robotics Makes a Splash at Oceans 2024 in Halifax, Nova Scotia

ecoSUB Robotics, a leader in innovative autonomous marine robotics, proudly participated in Oceans 2024, marking the company's first exhibition outside of the UK. The event, held in Halifax Nova Scotia in September this year, brought together industry experts, researchers, and enthusiasts from around the globe, providing a unique platform for ecoSUB to showcase its cutting-edge autonomous underwater vehicles (AUVs).

"Three months after Oceans 2024, we are still following up on the incredible opportunities generated at the event," said Terry Sloane, managing director of ecoSUB Robotics. "The interest in our technology and the potential partnerships we've initiated are a testament to the importance of such gatherings in fostering collaboration and innovation within the marine sector." During the event, many attendees had the opportunity to see ecoSUB's AUVs up close for the first time, having followed the company's developments from afar for several years. The response was overwhelmingly positive, with visitors expressing enthusiasm about the potential applications of ecoSUB technology in marine research, environmental monitoring, and underwater exploration.

In addition to showcasing its products, ecoSUB Robotics is excited to announce the appointment of a new distributor to cover the Canadian market. Teramara, formerly known as DASCO, has been an established player in Canada for several years and recently underwent a rebranding to better reflect its commitment to innovation and excellence in marine technology. ecoSUB looks forward to working closely with the Teramara team to expand its reach and support in Canada. Such was the success of Oceans 2024, we have pre-booked for Oceans 2025 in Chicago USA. The ecoSUB team is thrilled to embark on this new journey with Teramara and is confident that their combined expertise will drive growth and innovation in the Canadian market.

General Oceans Acquires RS Aqua

Growing underwater technology group, General Oceans, has acquired ocean technology specialists RS Aqua as of Monday 18th November 2024 in a move that will strengthen the positions of both companies. General Oceans, like RS Aqua, are innovators within the ocean technology sector and have successfully completed a number of recent acquisitions in the underwater technology market including Tritech International Ltd in 2022 and Klein Marine Systems in 2023. General Oceans reported revenues of GBP 62 million in 2023, an increase of 28 per cent compared to 2022, and now consists of six operating companies including RS Aqua. General Oceans employs more than 300 people based in Europe, UK, US and Australia.

Atle Lohrmann, President of General Oceans, said “RS Aqua are an important acquisition for General Oceans and we couldn’t be happier they are joining the group. We believe RS Aqua will play a significant role in strengthening the position of General Oceans within the UK market, and vice versa. There are significant opportunities for collaboration and partnerships for RS Aqua within the group: something that is fundamental to General Oceans.”

RS Aqua have over 40 years experience of supplying ocean technology sensors and systems across a variety of sectors and are a leader in their field. Based in Portsmouth, UK, RS Aqua are in a strong position within the UK

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underwater technology market making them an excellent addition to General Oceans. Martin Stemp, Managing Director of RS Aqua said "I'm delighted that RS Aqua has joined the General Oceans group. We share a passion and commitment to ocean technology innovation and I'm excited for this next crucial stage of RS Aqua's growth."

RS Aqua will continue to operate as an autonomous business within General Oceans and it is their shared commitment to growth, technology and innovation, combined with shared values to drive future exploration, that brings both businesses together and paves the way for an exciting future.

Highly cited Royal Society issue

The following Royal Society *Philosophical Trans A* issue has been highly cited and downloaded, "Heat and carbon uptake in the Southern Ocean: the state of the art and future priorities", organised and edited by Andrew J. S. Meijers, Corinne Le Quéré CBE FRS, Pedro M. S. Monteiro, Jean-Baptiste Sallée, and the articles can be accessed directly at www.bit.ly/TransA2249. Purchase the print issue at the reduced price of £40 by contacting sales@royalsociety.org.

SALTS

70% of ocean microplastics are the type found in clothes, textiles and fishing gear; and Europe is a hotspot

Three of the world's top five hotspots for marine microplastic pollution are in Europe, according to new data collected by sailors and teams competing in The Ocean Race. During the global sailing competition last year, water samples were collected from the Atlantic Ocean, southern Indian and Pacific Oceans, the Southern Ocean, and in seas around Europe(1), and provided to the National Oceanography Centre (NOC) for analysis.

Every sample gathered during the 60,000km long Race contained microplastics, with high concentrations found in some of the most remote parts of the planet, several thousand kilometres from land. Cutting edge sampling and analysis methods meant that scientists were able to examine microplastics as tiny as 0.03 millimetres, 10 times smaller than traditional methods allow. This detailed view led to the discovery of a high number of microplastics: on average, 4,789 per cubic metre of water.

The greatest concentration (26,334) was found close to South Africa, followed by the edge of the English Channel close to Brest, France (17,184), then another point close to South Africa (14,976) followed by the Balearic Sea (14,970) and in the North Sea offshore Denmark (14,457). Microplastics captured ranged from 0.03 millimetres to 4.6 millimetres in size.

Katsiaryna Pabortsava from NOC and Victoria Fulfer from the University of Rhode Island analysing microplastic samples. Photo: Cherie Bridges, The Ocean Race

As well as providing valuable insights on the spread of plastic pollution in the ocean, samples were analysed to determine the type of plastic product that they originated from. Scientists from the NOC (UK) and University of Rhode Island (USA) discovered that, on average, 71% of the microplastics in the samples were microfibres. Dr Katsia Pabortsava, Biogeochemist at NOC said: "Collaborating with The Ocean Race gave us a unique opportunity to measure and characterise microplastic pollution on a global scale, including in some very remote locations like Southern Ocean where microplastics were not quantified before. We found plastics in all the samples and identified new hotspots of plastic pollution in the ocean. Some of these hotspots, for example, in waters around Europe, Brazil and South Africa, were not surprising because of high human activity there".

However, not all results were as expected. Katsia continued: "The high concentrations of microplastics that we measured in the samples from the Southern Ocean were really striking and

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we are yet to uncover the reasons why they are accumulating there and if they make it further South into Antarctica. In the next few months, we will be looking at the samples collected in the Antarctic region to shed the light on the spread of microplastic pollution and processes that control it." According to the report, these fibres, from materials such as polyester, are released into the environment from washing machines (through wastewater), dryers (into the air), direct shedding from clothing, degradation of textiles littered in the environment and from discarded fishing gear.

Victoria Fulfer, who undertook the research for the University of Rhode Island and is now a Microplastics Scientist at the 5 Gyres Institute said: “These results mark a significant development in the global studies of ocean microplastics. For the first time, we have been able to measure tiny particles, as small as 0.03 millimetres, and determine not just their prevalence, but also identify the type of product that they originated from. We were shocked to discover such high numbers of microplastics. Less is known about these tiny particles, but there is potential that smaller microplastics will be more harmful to marine life and human health, as very small microplastics are capable of penetrating cells and tissues. Worldwide sampling efforts, like those conducted by The Ocean Race, are key to refining global models of microplastic pollution distribution and identifying new pollution hotspots.”

Data gathered during The Ocean Race 2022-23 were collected by two 60-foot foiling International Monohull Open Class Association (IMOCA) sailing vessels (GUYOT environnement - Team Europe and Team Holcim - PRB), using an onboard Sampling Unit: a special filter system designed to collect plastic particles (between 0.03mm and 5mm). The unit works by drawing water in and through filters over a two hour period to capture the microplastics. New samples were taken each day by the sailors and provided to the National Oceanography Centre for analysis, with support from the University of Rhode Island.

Richard Brisius, Race Chairman for The Ocean Race said: “As sailors, for many years we have shared our experiences of seeing a growing amount of plastic debris in remote parts of the planet. Now, through our science programme, we have the data to back this up. There is no doubt that marine plastic is having a devastating effect. Microplastics have been found in species throughout the ocean, from plankton to whales, and we are consuming them ourselves in our food. If urgent action isn’t taken by the Intergovernmental Negotiating Committee, global plastic waste could almost triple, reaching around 1.2 billion tonnes by 2060 (2). We can turn this around, but we must act now.”

National Oceanography Centre (UK) is a Scientific Collaborator of The Ocean Race, reflecting the two organisations dedication to using the Race’s platform to accelerate ocean science. The Ocean Race is also contributing scientific data to the Ocean Decade Odyssey project, which is an endorsed Project of the UN Decade of Ocean Science for Sustainable Development (2021-2030) supporting efforts to reverse the cycle of decline in ocean health and create improved conditions for sustainable development of the ocean.

Sources:
(1) Data were collected during the 60,000km long Race route. This edition of the race did not include Asia and data were not collected during leg 1 (Alicante to Cape Verde). For leg 2 (Cape Verde to South Africa), microplastic data were collected for particles larger than 0.1 millimetres.
(2) Intergovernmental Negotiating Committee on Plastic Pollution, UNEP - UN Environment Programme Funding by the EU-MINKE project Metrology for Integrated Marine Management and Knowledge-Transfer Network. Grant agreement ID: 101008724; which made the analysis of the microplastics data at NOC possible.

The long journey of Bottle No. 71645

It was Thanksgiving Day, 1968. Richard Nixon had just been elected President of the United States. “Hey Jude” began spinning on record players in living rooms across America. And it had been the deadliest year of the Vietnam war for the U.S. since the conflict began 13 years earlier. As families and friends gathered for their holiday a U.S. Coast Guard airplane flying due east of Daytona Beach, Florida dropped five glass bottles into the open ocean. What must have looked like a heinous act of littering from the sky was actually part of a study led by Woods Hole Oceanographic Institution (WHOI) physical oceanographer Dean “Bump” Bumpus to measure ocean currents in the North Atlantic.

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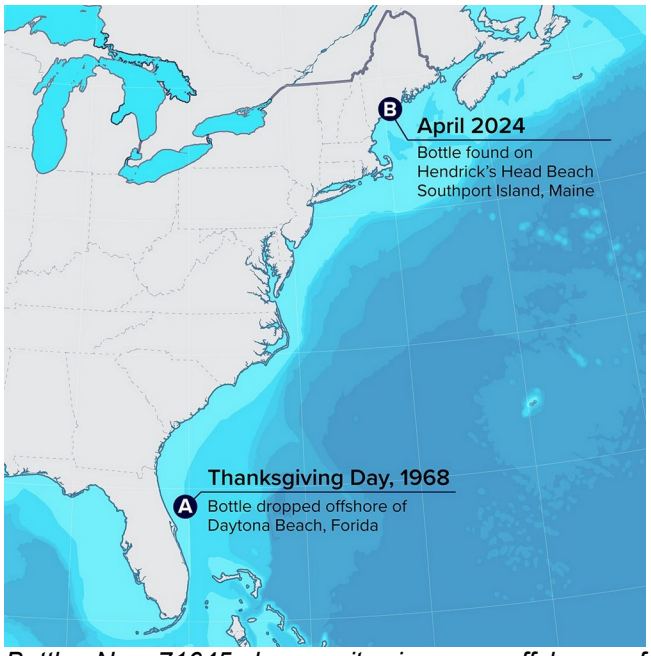
Between 1956 and 1972, some 300,000 bottles were released into the ocean by ships and planes, along with more than 75,000 seabed drifters.

A box of archived "Reward" postcards returned by people who have found drift bottles over the years. (Photo by Ken Kostel, © Woods Hole Oceanographic Institution)

"It was an amazing project in terms of how many bottles and drifters were put in the ocean," says WHOI physical oceanographer Pelle Robbins. "Bump really marshalled the forces from both planes and ships to make it happen. It was very inspirational and got a lot of people back then thinking about ocean circulation." Last April, one of the bottles dropped offshore of Daytona, No. #71645, was found washed up on Hendrick's Head Beach in Southport Island, Maine. Charlie Britton, a retired educator and Southport native, had been picking up trash from the beach after a bad winter storm had barrelled through. "I looked down and saw this bottle staring at me," says Britton. A note inside had a bold inscription at the top: BREAK THIS BOTTLE.

A *real* message in a bottle, Britton thought. He first tried removing the bottle's rubber stopper, but it wouldn't budge. So, he tapped the bottle onto a nearby rock to break the glass, pulled the letter out, and started reading. The letter was from Woods Hole Oceanographic Institution and provided a brief explanation of the ocean current/drift study. And, it promised a 50-cent bounty, enough to buy two cheeseburgers and a Coke at McDonalds in 1968, to whoever sent back the return card with details about when and where the bottle had been found. "Your giving accurate information will be of great aid," the note read.



Bottle No. 71645 began its journey offshore of Daytona Beach, Florida, and ended up on Southport Island, Maine. (Map illustration by Natalie Renier, WHOI Creative)

Bump's idea of setting glass bottles adrift to track ocean currents may have been resourceful, but it wasn't new. Ancient Greek scientists are said to have used drift bottles to measure currents in the Mediterranean Sea, possibly as early as 310 BC, and that Albert I, Prince of Monaco, used them in the late 1800s and early 1900s to investigate the dynamics of the Gulf Stream as it approached Europe. The method wasn't nearly as accurate or efficient as today's GPS-enabled surface drifters and fixed current sensors, but the WHOI drift bottle program yielded about a 10 percent return rate, roughly 30,000 "Point A to Point B" drift paths. Robbins acknowledges that it was a decent-sized data set for the time: "Back then, they didn't have anything else to collect the data," she says. It was also an expensive data set, at least by today's standards. These days, physical oceanographers often collect not thousands, but millions, of current measurements over the course of a research project. That would make the 50 cent per measurement bounty unrealistic today, at least from a cost standpoint.
The fact that a drift bottle couldn't report anything about how, and when, it got to its destination made it difficult to interpret the data. But according to the U.S. Navy, the combination of drift bottles and seabed drifters ultimately "provided invaluable information of surface and bottom circulation along the continental shelf of eastern North America."

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How long did it take for Bottle No. #71645 to make the 1500 mile (2400 kilometer) journey from Daytona Beach to Southport, Maine? It's anyone's guess. When Britton found it, the bottle was in pristine condition with no biofouling or debris caked on it, which suggests it had been beached there for a while. But whether it got there within days of Thanksgiving, 1968, or much more recently, we'll never know.

Charlie Britton on Southport Island, Maine (Photo by Annie Britton)

To Britton, it makes no difference, he was just happy to have stumbled upon a piece of oceanographic history (and WHOI did send him fifty cents). "For the bottle to have lasted all this time is really interesting," he says. "It gave this 61-year-old retired guy a thrill." ***:- Evan Lubofsky, science writer and editor at Woods Hole Oceanographic Institution.***

CALENDAR

6th - 8th January 2025: 73rd Annual Meeting of the British Phycological Society
Hull, UK
Abstract submission and registration are now open at https://hull.brphycsoc.org/. We are very keen to welcome all phycologists to Hull as we approach the hundredth anniversary of marine science at this University. Thematic sessions cover advances in phytoplankton imaging and identification, current research in kelp, freshwater algae and eutrophication, and estuarine systems. The annual Irene Manton Prize will be awarded for best presentation by a PhD student. For more information, contact: bpshull2025@gmail.com.

29th-30th January 2025, Royal Geographical Society, Coastal Futures Conference
London, UK
Coastal Futures is the UK's largest annual gathering of coastal and marine practitioners. The 2025 programme will include six sessions across two-days, covering the big issues and shining a light on future trends.

Speakers include:
Giles Bristow, CEO of Surfers Against Sewage
Mike Cohen, CEO of National Federation of Fishermen's Organisations
Sarah Fowler, CEO of Wildfowl and Wetland Trust

Keynotes:
Nick Hounsfield, Founder of The Wave
Melanie Austen, Professor of Ocean and Society, University of Plymouth

Panel debates led by:
Aisling Lannin, Head of Evidence at the Marine Management Organisation
Rachel Solomon Williams, Executive Director, Aldersgate Group

Poster announcement coming soon.

Sessions:
1. Land-Sea Interactions: How do we improve the quality of place-based decision-making?
2. Sustainable Seas: Can we meet the 2030 targets whilst growing a sustainable blue economy?
3. Across the Water: What insights can we gain from international best practice to help us reach the 2030 targets?
4. Ocean Stewardship: Are we doing enough to understand and promote the value of our seas?
5. Future Fishing: How will future fishing needs be balanced with restoration efforts and space for renewable energy?
6. Restoring Nature: Can we achieve well-managed and restored marine and coastal seascapes by 2030?

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26th-27th February 2025: The first OCEAN DECADE International Coastal Cities Conference

Qingdao, China

Coastal cities are among the fastest-growing human settlements in the world. They are on the frontline to benefit from the growth of a sustainable ocean economy, but also to face escalating threats from climate change, ocean pollution, and other environmental risks. The Ocean Decade presents a unique opportunity to harness ocean science and knowledge to address these challenges, enhance the resilience of coastal cities to global change, and improve the living conditions and well-being of their inhabitants. Happening ahead of the 2025 United Nations Ocean Conference, this event will accelerate the co-design of ocean science for the sustainable development of coastal cities. Join us to build a better ocean for better cities; Registration is open until 20th November 2024.

26th-28th February 2025: 4th annual Socio-oceanography Workshop

Southampton, UK

The National Oceanography Centre (NOC) is calling on scientists and researchers to participate in its fourth annual Socio-Oceanography Workshop, hosted in collaboration with the Marine Social Science Network. This international event will gather experts across natural and social sciences to tackle the pressing issues linking people and the changing ocean.

This year's workshop will focus on four key themes, including the impact of climate change-driven shifts in marine species distribution and how these changes will affect the way the UK marine environment is perceived, valued, and managed. Other topics include integrating digital humans into environmental digital twins, addressing biases in research related to marine carbon dioxide removal, and exploring how local communities can engage in participatory environmental monitoring. Applications to take part in the event close on December 7th.

The workshop is limited to 50 people, with social sciences participants, in particular, being encouraged to apply, to help grow the number of specialists from this discipline engaging with socio-oceanography. Outputs from the workshop include research papers and funding proposals to help address the learnings, identified gaps and further knowledge.

Outputs from this year's workshop, held in March, continue with a recent publication addressing marine heatwaves, particularly in the UK where there is currently little awareness of their potential impacts, ecologically and societally. Find out more here.

25th-27th March 2025: The 4th Ocean Visions Biennial Summit.

Vancouver, Canada

We're thrilled to announce that the 4th Ocean Visions Biennial Summit 2025 will be held in March in Vancouver, Canada. This action-oriented event will bring together scientists, policymakers, innovators, funders, students, and others to explore solutions and strengthen partnerships to help restore our ocean and stabilize the climate. We invite you to be part of the movement. Join a multidisciplinary community focused on advancing solutions to the ocean's most pressing challenge, climate disruption.

Programming will be highly interactive and include ample opportunities for collaboration. Participants can look forward to:

- ***Sharing & Learning****:* Gain insights from inspiring keynote speakers and panel discussions on the forefront of ocean-climate research and innovation.
- ***Workshops****:* Dive deeper with fellow attendees on challenges and issues of mutual concern.
- ***Networking****:* Connect with leading experts, industry pioneers, and decision-makers shaping the future of ocean-climate health through time devoted to building and strengthening relationships.
- ***Collaborating****:* Forge partnerships and collaborations to accelerate the impact of your work in ocean-based climate solutions through interactive, action-oriented sessions and activities.

We're excited to announce that registration for the Ocean Visions Biennial Summit 2025 is now open. The Summit is designed to be highly interactive. A diverse set of session types and events will engage scientists, policymakers, innovators, funders, students, and others around innovative approaches and solutions to restore our ocean and stabilize the climate. The Summit will also help build and strengthen the multisector partnerships that are needed to make complex solutions real**.** Register Now and contribute to the Program.

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Ocean Visions is seeking proposals for portions of the Summit's programming, which will include thematic sessions, focused workshops, plenaries, and idea pitches. If you have ideas for relevant and innovative content that could be featured, we ask that you submit idea by Friday, November 8th. We will review all submissions and share outcomes by mid-December.

The Summit is designed to welcome and engage a multidisciplinary community. The event will feature a mix of session types as well as ample opportunities to collaborate. Summit participants will share and discuss cutting-edge advancements in ocean sciences, engineering, policy, governance, and economics, and coordinate action on key priorities to advance innovative solutions for ocean-climate restoration. We invite you to be part of the movement. Help us advance solutions to the ocean's most pressing challenge – climate disruption.

27th April - 2nd May 2025: European Geophysical Union General Assembly.
Vienna, Austria
The EGU General Assembly 2025 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 abstract submission deadline is **15th January 2025, 13:00 CET**. If you are looking for a head start the Provisional Programme is now online, though keep in mind that this list is not finalized until after the start of the Call for Abstracts. Prepare your calendar with all the EGU25 important dates by checking our Deadlines and Milestones page. Curious about who organizes the EGU25 General Assembly? Meet the Programme Committee.

28th-29th May 2025: The MARTECH Workshop 2025
Pasaia, Spain
The Martech Workshop 2025 is an excellent platform for showcasing innovations and collaborating with marine technology experts. MARTECH 2025 is organized by the Marine Technologies team of AZTI located at the Pasaia AZTI Headquarters and the Universitat Politècnica de Catalunya (UPC – SARTI). The call for papers is open until 9th January (extended deadline). Further details about the workshop are available on their website: http://www.martech-workshop.org/.

4th-6th June 2025: The One Ocean Science Congress
Nice, France
The One Ocean Science Congress will feature a mix of plenary sessions, including opening and keynote speeches, alongside parallel oral and poster presentations. The One Ocean Science Congress is organised by CNRS and IFREMER and it is a special event of the 3rd United Nations Conference on the Ocean Endorsed by the United Nations Decade of Ocean Science for Sustainable Development. Please see more information on their website: https://one-ocean-science-2025.org/home.html

23rd-25th June 2025: Turbulence Grey Zone Workshop
Exeter, UK
Highlighting the opportunity to attend or participate in a workshop about advances in turbulence modelling/parametrisations, which is taking place at the University of Exeter next summer. Turbulence parametrisation is a common challenge in the modelling of fluids, including Earth's ocean and atmosphere, so the conference aims to take an interdisciplinary approach.

1st-3rd July 2025: 2nd UK Coastal Research Conference
Liverpool, UK
Coastal zones are of high ecological and societal value, but as the dynamic interface between land, sea, and air, they are heavily impacted by a combination of climate-driven environmental change and human interventions. Approaches to sustainably manage the coastal zone increasingly seek to provide co-benefits such as risk mitigation, climate regulation, biodiversity gain, and supporting coastal community resilience. These require working across sectors and disciplines to better manage the UK coast in a changing climate.

The second UK Coastal Research Conference welcomes all those with an interest in UK coastal science, including academia, policy makers, practitioners and industry

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professionals. Our aim is for the conference to promote conversations around national coastal research strategies and coastal knowledge, connecting researchers with those involved in managing our coasts, and thereby inform sustainable future management of our coast.

Following on the first UK Coastal Research Conference, the programme will include one day with optional site visit / training course / workshops and two days for the conference including keynote, oral and poster presentations. Social activities are planned to include an icebreaker drink reception and a conference dinner. Abstract submission now open. For further information and submission form click HERE.

15th-16th July 2025: Deep-Sea Ecosystems Special Interest Group meeting
Newcastle, UK
The 2025 meeting of the Deep-Sea Ecosystems SIG will be in person (remote attendance TBC), hosted by Will Reid at Dove Marine Lab on the outskirts of Newcastle. More information about the meeting will be circulated in the New Year.

9th October 2025: 6th Maritime Transport Efficiency Conference (MTE Conference)
Geneva, Switzerland
To take place at the Hotel President Wilson, Geneva. Held annually, the MTE Conference uniquely bridges the maritime and commodity trading sectors, addressing the shared challenges and opportunities of decarbonising the global shipping industry. Focusing on the commercial and operational aspects of decarbonisation and offering actionable strategies to reduce emissions across the maritime value chain, the event caters to shipowners, cargo owners, charterers, operators, fuel suppliers, regulatory bodies, and technology innovators.

This diverse mix of stakeholders ensures comprehensive discussions on navigating the evolving regulatory landscape, adopting sustainable procurement practices, and embracing emerging technologies, while promoting cross-industry collaborative efforts to decarbonise. Take advantage of the Early-Bird rate, register by April 1st and save 300 CHF.

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 31st December.

JOBS and OPPORTUNITIES

OceanCensus recruiting for a Chief Operating Officer

Nekton is seeking a Chief Operating Officer to co-lead and implement the organisation's strategy, operational and fiscal oversight and team management; including science, marine operations, logistics, data, communications, finance and central operations teams and an international network of collaborating partners.

Closing date: EOB, Friday 3rd January, 2025 Full details:
https://nektonmission.org/about/jobs/chief-operating-officer/

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AtlantiS – berth applications are now open

Are you a student or Early Career Researcher seeking ship-based field work experience? Berth applications are now open for the next AtlantiS PAP site expedition (JC278). Applications can be made by completing this form as well as the standard fellowships application. Visit the Atlantis website for full details.

Application deadline for JC278: 5th January 2025

There are jobs in the IMBeR newsletter

- Anthropocene Coasts Recruiting Associate Editors, applications will continue until positions filled. Anthropocene Coasts is a Golden Open Access journal hosted by East China Normal University, and published by Springer. The journal publishes multidisciplinary research addressing the interaction of human activities with our estuaries and coasts. To help build on the success of Anthropocene Coasts and to expand the opportunities for international collaboration and contributions to the work of the journal, the journal is seeking more international Associate Editors.
- Tenure-Track Position in Climate Science, Department of Earth and Environmental Science, University of Pennsylvania. Applicants will continue until the position is filled.
- PhD Opportunity: Southern Ocean Dynamics. Apply by **1 January 2025**.
- Irina Marinov's group in the Earth and Environmental Science Department at the University of Pennsylvania is seeking a PhD student for a project focused on the Southern Ocean. The research spans ocean biogeochemistry, plankton ecology, physical oceanography, and climate dynamics, with potential collaboration on glacier/iceberg dynamics (Leigh Stearns) and climate dynamics (Michael Mann). Apply by sending your CV, statement of interest, transcripts, and writing samples to imarinov@upenn.edu.
- Postdoctoral Fellowship – Climate Change Impacts on Northwest Atlantic Marine Ecosystems & Fisheries, Memorial University, St. John's, Canada. Position will remain open until filled.
- MISSION ATLANTIC - Mobility Programme: Call for IEA Contributors. The MISSION ATLANTIC Mobility Programme offers support to individuals with the capacity to contribute to Integrated Ecosystem Assessment (IEA) research and implementation. Apply by **20 December 2024**.
- Call for nominations for experts - The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services. Apply by **10 January 2025**.
- "La Caixa" Foundation INPhINIT call for incoming Doctoral Fellowships – Supporting young research talents pursuing doctoral studies in Spain or Portugal. Apply by **23 January 2025**.
- New EMFAF call for proposals for smart specialisation and regenerative ocean farming. Submit by **18 February 2025**.

More jobs and opportunities for ECRs, please sign up for IMECaN newsletter

If you would like to put some recruitment information in the IMBeR monthly newsletter, please contact us through imber@ecnu.edu.cn.

IMBeR monthly newsletter archive - Find more

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There are jobs in the MASTS newsletter

New vacancies:

We have officially changed the way we advertise jobs in the Newsletter and on our Webpage. From now on we will be using the vacancy landing page in all the links that we provide across our platforms. This means that from now on, whether you're in our newsletter or on a webpage, you will be able to read and apply for all vacancies in fewer clicks.

- Chief Operating Officer – Nekton – 03/01/25
- NERC BAS Director of Science – UK Research and Innovation – 20/01/25
- Marine Ecosystem Modeller – University of Strathclyde – 11/01/25

Still open vacancies:

- Offshore Consents Manager – SFF – 27/12/24
- Project Director (Shell-volution) – UHI – 06/01/24
- Project Manager (Shell-volution) – UHI – 06/01/25
- Chair of the Governing Board – SAMS – 20/01/25
- Science Officer – Irish Whale and Dolphin Group – 01/01/25

PhD Opportunities:

- Exciting PhD project opportunity on "Bio-engineering of biochar for enhanced remediation of contaminated environments" at Heriot-Watt University. More here.
- Blue Carbon accumulation, transformation and storage: Quantifying biogeochemical processes in saltmarsh ecosystems. University of St Andrews. More here.
- Laboratory modelling of internal tsunami generation due to ice calving at Newcastle University. More here. Closes 03/01/25
- Space-based water quality and light field prediction to support coastal aquaculture operations – University of Strathclyde. More here. Closes 06/01/25
- Building Resilient Kelp cultivars via priming with multiple environmental stressors - The university of Edinburgh. More here. Closes 06/01/25
- Environmentally sustainable creel fisheries – Heriot-Watt University. More here. Closes 03/01/25
- Addressing the Place of Microorganisms in the Nagoya Protocol: Microbial Biogeography, Genomics and Taxonomy (University of Essex). Closes 07/02/25. More here.
- Biodiversity Conservation. An Empirical Analysis of the Ways that Developers in England are Working to Achieve Biodiversity Net Gain (BNG) (University of Essex). Closes 07/02/25. More here.
- Nature-based Solutions (NbS) to Mitigate the Effects of Sea-level rise (University of Essex). Closes 07/02/25. More here.
- Transitions to Sustainable Wildlife Harvest: Evidence Based Management and The Social Licence to Hunt (University of Essex). Closes 07/02/25. More here.
- The Role of Directors' Duties and Their Relationship With Non-financial Reporting in Achieving Environmental Sustainability (University of Essex). Closes 07/02/25. More here.
- Exploring the Legal and Social Emergence of Rights of Nature as a Form of Environmental Protection (University of Essex). Closes 07/02/25. More here.
- Unilateralism v Multilateralism: Harnessing International Economic Policy for Sustainable Transitions (University of Essex). Closes 07/02/25. More here.
- Towards a Praxis of a Just Transition in Developing Economies: Beyond Counter Accounts and Regulatory Frameworks to Action (University of Essex). Closes 07/02/25. More here.
- Nature Protection Versus Nature Restoration: Who Benefits and Who Loses Out? (University of Essex). Closes 07/02/24. More here.

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- Co-Production, Climate Resilience, and Accountability: A Pathway to Localising Sustainable Agendas (University of Essex). Closes 07/02/25. More here.
- Digital Technologies of Farming: Analysing and Communicating Its Impact on Farmers and The Environment (University of Essex). Closes 07/02/25. More here.
- From Global Promise to Local Impact: Evaluating Climate Funding at the Local Level (University of Essex). Closes 07/02/25. More here.

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