

THE BRIDGE

News from the
School of Ocean Sciences
and the
School of Ocean Sciences Alumni Association



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The Cover Design Photo: Louis Tapster

For this edition of the Bridge we are delighted to have a cover designed by Louis Tapster. Louis is a second-year Marine Biology student and graphic designer whose work celebrates lesser-known organisms, particularly marine invertebrates.

His biggest artistic inspirations are Owen Davey, Alexander Vidal, Scott Partridge, Emma Clinton and Lucie Brunellière, and elements of their style can be seen throughout in his work. Many of Louis's illustrations are inspired by animals he has observed firsthand.

Reflecting on the cover design, Louis said: "For this artwork specifically I wanted to push myself to do a bit of perspective work - it's not anything crazy but for a vector artist like myself perspective and depth doesn't come naturally - since, unlike in traditional raster artwork (drawing with a pen) vector art uses shapes - so flat art is much more common. Additionally, I go rockpooling so often that I'm fairly used to seeing the [Menai] bridge at dusk and dawn and thought it'd just be fun to draw it with the limited colours of a sunset."

The cover artwork includes three species commonly found in the Menai Strait, including Louis' favourite, the Bobtail squid.

To see more of Louis' artwork, visit his website: <https://unorthodoxsketch.weebly.com>

OPEN DAYS

Sunday 16th August 2026
Sunday 11th October 2026
Sunday 1st November 2026
Saturday 28th November 2026

Book your place:
@bangor.ac.uk/openday

THE BRIDGE

The Bridge is the newsletter of the School of Ocean Sciences and SOS alumni and is published twice a year.

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Remember you can catch up with previous editions of "The Bridge" online: <https://www.bangor.ac.uk/oceansciences/newsletter.php.en>



WELCOME

It gives me great pleasure as the new Head of School to welcome you to the summer 2026 edition of the Bridge. Over the past years the Bridge has made a huge contribution to demonstrating to our students, our staff and importantly to our alumni how much we collectively achieve. Before I reflect on those achievements, it is worth recognising that as Head of School I have large shoes to fill.

Prof **John Turner** retired at the end of January, after 40 years at Bangor University and 6.5 yrs as Head of School. Colleagues past and present packed the Sarah Jones Lecture theatre soon after his retirement to celebrate John's achievements in teaching, research and management. John very kindly passed on numerous objects to help my transition to my new role, including a very nice (though well-worn) tweed jacket! As Head of School John oversaw a significant increase in our student numbers and a highly successful REF cycle; he leaves the school in a healthy state, recognised both internally and externally for its high standards and contribution to the field of Ocean Sciences internationally.

This edition of the Bridge outlines numerous awards, to staff, Dr **Iestyn Woolway** (finalist in the Blavatnik Awards for young scientists), Dr **Jaco Baas** (2026 Mehta Award), alumni, **Katy Woodington** (BSc Marine Biology 1998: MBE) and students, **Lorna McKellar** (PhD student: Drapers Medal); **Arwen Wall** (Undergraduate: High Sheriff award for outstanding contribution to the local community) and our team of student reps (University's Student Rep Team of the Year at the Student Voice Awards). We were also



Prof. Stuart Jenkins

fortunate to welcome alumnus Dr **Leanne Cullen-Unsworth** (MSc Marine Environmental Protection 2000) to the winter graduation to receive an Honorary Doctor of Science degree and fellowship of Bangor University for her work on seagrass ecosystems.

The Bridge gives us the opportunity to reflect on a small portion of the world leading science conducted by our staff

and students. This edition our research highlights include Prof **Jan Geert Hiddink's** investigation into the impact of benthic trawling on carbon storage, PhD student **Kate Retallick's** work in Antarctica assessing the consequences of glacial calving, Dr **Laura Richardson's** One Health pathogen surveillance approach in the Cayman Islands and the ongoing work of research staff **Maria Hayden-Hughes** and **Rhianna Parry** in local oyster reef restoration. A new feature for the Bridge: 'Where are they now?' catalogues the exploits of alumni from as far back as the 70's and dips a toe into the depth and breadth of SOS's influence worldwide. Please do get in touch and let us know about your lives post SOS.

Finally, we report the very sad loss of Professor Emeritus **Ernest Naylor** OBE DSc at the age of 94 (previous Head of School 1992-1996), Professor **Dave Jones** (long standing academic staff member 1968-2001), Captain **Gareth Ellis** (Captain of the Prince Madog 2016-2023) and alumni **Nathan Formosa** and Dr **Louisa Norman**.

Professor **Stuart Jenkins**, Head of the School of Ocean Sciences

From the Chair of the School of Ocean Sciences Alumni Association:

Mike Cook writes:

I have had the pleasure of visiting Menai Bridge twice since Christmas. The first time was a short trip to meet with the new Head of School, Stuart Jenkins. The meeting was very fruitful. Not only did we agree on how the Alumni could assist the school in their work, but we also discovered a mutual love of rugby – The National Sport of Wales. I am not sure which of the two topics dominated our conversation most! The second trip was to attend a meeting of the School of Ocean Sciences Alumni (SOSA) Association committee. This meeting was very well attended with a large part was spent discussing how alumni could support SOS in preparing students for the workplace and employability. The school already places a strong emphasis on such topics which are not only important for the students' progression but also in attracting potential students to Bangor. We discussed several potential initiatives and look to put these in place over the next year or so.

As a complete aside, I recently attended my old grammar school reunion in my hometown of Nuneaton in Warwickshire. Some of us had not seen each other for more than 50 years and as you can imagine, it was fascinating to catch up and find out what they had done with their lives over the last half century. The reunion led to a WhatsApp Group whereby there has been discussions on a variety of topics ranging from school memories to football and music. But, for me, the most interesting topic has been global warming, its impact on our environment and the energy transition. Now, coming from the Midlands, as far from the sea as you can possibly get in England, it was perhaps not surprising to discover that knowledge of our oceans and the topics referred to is scant in the group. Indeed, I am the only member of the group who has any detailed knowledge whatsoever of the marine environment, climate change and the energy transition.

Everyone knows we have tides but that is about as far as their ocean knowledge goes. The reason for mentioning this is because it mirrors my experience in life. The percentage of the world's population that has any idea of this important aspect of the earth must be very small indeed. I think this is a problem for marine geoscience where there is a dearth of skills as evidenced with the burgeoning of offshore wind over the past few years. Whilst not the case for the marine environmental side of things where popular marine wildlife documentaries have put the biological marine environment to the fore, marine geoscience are alien subjects to many.

I feel I must end this letter on a sad note. The first half of 2026 has seen the sad departure of two SOS Alumni who were very well known to me. Firstly, I heard in February of the sad passing of Dr **Jim Somerville** who studied in Menai Bridge a few years before me. Jim and I got to know each other when we were involved in competing offshore contracting companies in the early 80's. Jim was a very affable and capable Scotsman who, like me, enjoyed a beer and loved rugby and unlike me, was an eminent marine geophysicist. Jim went on to head Geoteam, a Norwegian site investigation contractor that was eventually bought by Fugro. The other sad news was the passing of **Nathan Formosa**. Nathan was a very affable student who attended one of my SOS careers presentations 15 or so years ago. He was one of several students who followed up on my offer to provide mentorship on careers within Marine Science. Over the years I provided Nathan with advice and we got to know each other well with my wife Christine and I attended his wedding to Naledi about three years ago. I have to say I was knocked over when I heard that someone so young and full of energy was no longer with us. RIP Jim and Nathan. Our planet is a lesser place without you.

Mick Cook,
Chair of SOSA (mick@mickcook.com)

Congratulations

Dr Iestyn Woolway



Congratulations to Dr **Iestyn Woolway** on being one of only nine finalists shortlisted for the 2026 Blavatnik Awards for Young Scientists in the United Kingdom. He is the first researcher from Wales and Bangor University ever to be selected as a finalist for these prestigious awards.

Established by the Blavatnik Family Foundation and managed by The New York Academy of Sciences, the awards celebrate groundbreaking contributions by UK scientists in the fields of Life Sciences, Chemical Sciences, and Physical Sciences & Engineering.

Iestyn was selected by an independent jury of expert scientists from a pool of 91 nominees representing 46 academic and research institutions across the UK. He was recognised for his research on the effects of climate change on global lakes and freshwater ecosystems.

A climate scientist, Iestyn's research focuses on how lakes and other inland waters are responding to rapid global warming. His work has provided critical insights into the effects of climate change on these ecosystems, with serious implications for biodiversity, water quality, and overall ecosystem health. Using advanced techniques that integrate satellite remote sensing and climate modelling, Iestyn has offered a global perspective on the vulnerability of lakes to rising temperatures. His innovative studies have been instrumental in shaping scientific understanding and informing climate policy discussions globally, especially his research on how increasing air temperatures and changing weather patterns affect lake temperatures, stratification, and ice cover.

Mehta Award

Congratulations to Dr **Jaco Baas** on being awarded the 2026 Mehta Award. Presented biennially, the award recognises individuals who have made significant contributions to advancing the theory and application of cohesive sediment transport in the marine and aquatic environments.

The award includes a cash prize and commemorative plaque and honours leading researchers whose work has advanced understanding of the physical properties and behaviours of 'sticky' sediment. These materials, such as mud, clay, silt and organic matter, play a crucial role in river, estuary and ocean systems.

Jaco will receive the award at the INTERCOH 2026 Conference in New Orleans, USA in September where he will also deliver the keynote lecture on the award topic.



Dr Jaco Baas

Kings Honours

Congratulations to alumna **Katy Woodington** (BSc Marine Biology, 1998) on being awarded a Member of the Order of the British Empire (MBE) in the New Year's Honours List. The honour recognises her exceptional services to the charitable and energy sectors.

Katy works for one of the UK's largest offshore wind companies, RWE, as their UK Community Investment Lead. In congratulating Katy, RWE said: "Over 20 years, Katy has made a significant impact both within the energy industry and beyond, combining professional leadership with a

deep personal commitment to supporting communities, charities, and social causes. Her work has been instrumental in helping unlock access to millions of pounds of investment for UK communities, through the direct operation of clean energy projects in their neighbourhoods. These investments have helped address critical local issues and opportunities and ultimately helped to bring communities closer together."

Congratulations also to our colleague Professor **Julia Jones**, a leading conservation scientist in Bangor University's School of Environmental and Natural Sciences, on being awarded an MBE.

Drapers Medal

Congratulations to PhD student **Lorna McKellar** on being awarded the Drapers' Bronze Medal.



Drapers Medal

Lorna's research, *Setting thresholds for good status in marine ecosystem management*, is already attracting international attention. Her first PhD chapter has been published in a high-impact journal, with two further chapters under review. Lorna has contributed her expertise to an International Council for the Exploration of the Sea (ICES) advice request for the European Commission. She has also been invited to present her research to organisations including JNCC, SMMR, and the Technical University of Denmark.

Nominated by Professor **Jan Geert Hiddink**, Lorna has been recognised for her exceptional research, which bridges natural and social sciences. Her work is helping shape global understanding of what "good environmental status" really means for our seas.

High Sheriff Awards

In May, Undeb Bangor Students' Union celebrated the achievements of student volunteers at this year's High Sheriff Awards ceremony. Among those recognised was **Arwen Wall** (BSc Marine Biology and Oceanography with Placement Year) for her Fairtrade Project.

The High Sheriff Awards honour students who have made an outstanding contribution to the local community through volunteering. Established in 2007 by former High Sheriff Dr Dewi Roberts and his late wife Dr Sheila Roberts, the awards have recognised generations of Bangor students whose commitment, compassion and hard work make a real difference across North Wales and beyond.



Arwen Wall High Sheriff Award

Vietnam Study UK Alumni Award

Congratulations to alumnus **Long Vu** (Marine Biology MSc, 2017) on winning the Science and Sustainability category of the Vietnam

Study UK Alumni Awards 2026. Long was recognised for the social impact of his work in the field of biodiversity conservation and in the study of endangered species.



Long award

Winter Graduation

In December we celebrated the achievements of our students at the Winter Graduation Ceremony.



At the ceremony the Vice-Chancellor presented Dr **Leanne Cullen-Unsworth** (MSc Marine Environmental Protection, 2001) with an Honorary Doctor of Science Degree and a Fellowship of Bangor University in recognition of her pioneering leadership in raising awareness of, and protecting seagrass ecosystem.

Dr **Leanne Cullen-Unsworth** is an inspiring Bangor alumna who was named one of the BBC's 100 Women in 2023 for her contribution to protecting our planet. She is passionate about applying scientific knowledge to conservation where people are an integral part of the ecosystem.

A social-ecological systems analyst, Leanne has more than 20 years of extensive

interdisciplinary research experience spanning environmental, social, economic, and natural sciences. Her work address several UN Sustainable Development Goals, including Life Below Water, Climate Action and Zero Hunger, through a focus on the role of seagrass in supporting biodiversity, coastal protection, fisheries and food security.

Leanne came to Bangor in 2000 to study for an MSc in Marine Environmental Protection, which provided a strong foundation for her future marine habitat conservation. She went on to complete a PhD entitled *Marine resource use patterns and development of economic performance criteria* at the University of Essex. While working in Wakatobi, Indonesia, Leanne was expecting to exemplify human dependence on mangroves and corals, but discovered the critical nature of seagrass meadows.

Together with her husband, Dr **Richard Unsworth** (MSc Marine Environmental Protection, 2001 and Associate Professor at Swansea), Leanne was part of the Seagrass Ecosystem Research Group, which worked across Swansea University and the Sustainable Places Research Institute at Cardiff University. Building on their joint



Dr Leanne Cullen-Unsworth with Professor John Turner

research background and working with their students, they founded Project Seagrass to improve our understanding of seagrass systems both in the UK and internationally, while raising awareness by bringing science to the public. Leanne has been part of the leadership team since its inception and is now Chief Executive Officer of Project Seagrass.



The winter ceremony also saw the graduation of the first cohort of MSc Marine Top Predator Ecology students.

School News

Countryfile Comes to Town!

As part of a special episode marking 200 years of the Menai Suspension Bridge, presenter Charlotte Smith joined Marine Biology lecturer Dr **Colvin Colvin** and students **Yolanda Evans** (BSc Marine Biology) and **Adriana Lipinska** (MScRes Ocean Sciences), to explore the colourful and captivating world of nudibranchs. Often described as some of the most striking creatures in our seas, these tiny sea slugs are also powerful indicators of marine health.

Filmed beneath the bridge, the segment followed hands on fieldwork in the Menai Strait, from daytime rockpooling to an atmospheric nighttime survey using ultraviolet light. The sequence revealed fluorescent nudibranchs glowing against the dark seabed, offering viewers a rare glimpse into a hidden ecosystem thriving just metres below a well-known landmark.

Yolanda and **Adriana** spoke passionately about their experiences studying at Bangor and the excitement of contributing to meaningful research. You can read more about **Yolanda's** enthusiasm for nudibranchs in the Summer 2025 edition of The Bridge.

For **Charlotte**, the feature was an opportunity to highlight both the scientific importance of nudibranchs and the value of immersive learning. "These species may be small, but they tell us a great deal about changes in our marine environment," she explains. "Taking students into the field and involving them in real research is fundamental to how we teach ocean science at Bangor."

The Countryfile feature reflects our strong connection to the local environment and our commitment to providing our students with practical, research-led learning opportunities. It also demonstrates how world class science can be found in familiar places, from historic bridges to local shorelines.



John Turner Retirement

In January, we celebrated the retirement of Professor **John Turner** after 40 years at Bangor University. John first joined the university as a postdoctoral researcher in 1985, before becoming a Lecturer and Course Director of the newly established MSc in Marine Environmental Protection, a role he held for 25 years. John later served as Dean of Postgraduate Research and Head of the Doctoral School, before his appointment as Head of School of Ocean Sciences in 2019. Throughout his time at Bangor, John also acted as the University Diving Safety Officer

During his career John has received many awards and accolades in recognition of his contributions to teaching, research, public engagement, and marine conservation.

These include a University of Wales Bangor Teaching Fellowship in 2007 for his outstanding contribution to teaching and pastoral care; the Bangor University Research Impact and Innovation Award - Best Impact on Public Policy and/or Public Services in 2015, for the British Indian Ocean Territory Marine Protected Areas Project. John was a Cultural & Societal Impact Award Finalist in 2013 for the Cayman Islands Marine Protected Area project; an International Research Excellence Award Finalist in 2016, he received a Professional Association of Diving Instructors 25 years of Outstanding Service Award in 2018, and a Bangor University Centre for Engagement in Teaching and Learning (CELT) Award in 2019.

John's research focused on coral reef ecology and conservation, coastal zone management, marine protected areas, environmental impact, the ecology and conservation of shark and cetaceans. He supervised many MSc and PhD students over the years, including Professors **Simon Davy** and **James Bell**, who are now both based at the Victoria University of Wellington, New Zealand.

Where are you now? Given John's influence in the development of the MSc MEP, which is approaching 40 years old, we plan to do a "Where are you now" feature on graduates from the course in our Winter 2026 edition of The Bridge. If you would like to be included, please supply a sentence, (or more if you wish), about what you are up to plus an 'action' photo of yourself.



John was joined for the celebrations by many previous leading staff members and past Heads of School including **Ray Seed**, **Chris Richardson**, **Colin Jago**, **Peter LeB Williams**, **Ivor Rees** and **Peter Evans**.

Welsh Blue Carbon Forum

In February, we were delighted to welcome the Welsh Blue Carbon Forum to Menai Bridge. The meeting organised by **Martin Skov** and **Annette Burden** (MSc Marine Environmental Protection, 2006 who leads Blue Carbon research at the Centre for Hydrology and Ecology).

Blue carbon is the catch-all term for the protection and restoration of marine habitats which store and sequester carbon and so support UK goals on climate mitigation and adaptation. These habitats can also provide multiple other benefits, such as supporting biodiversity.

The meeting brought together scientists from across Wales to share research and plot a

way forward. The research included a new evidence review by CEFAS involving Profs **Hilary Kennedy**, **Jan Geert Hiddink** and **Tom Rippeth**. The review considered “The role of English seabed sediments in carbon storage, impact of human activities, environmental pressures and potential management options”, and assesses evidence surrounding organic carbon storage in subtidal seabed sediments and the potential impact from human activities, and climate change.

Hilary Kennedy has been involved in a major international review of priority questions for future Blue Carbon research globally.

Paper: Macreadie et al (2026). Priority questions for the next decade of blue carbon science. *Nature Ecology and Evolution*, 10.1038/s41559-026-03020-6.



Corals, Coasts and One Health

Professor **Gareth Williams** was amongst a group of international speakers at the recent “Corals, Coasts and One Health” conference held at the King Abdullah University of Science and Technology in Saudi Arabia. The conference was organised by the Nature journals and focused on addressing the urgent challenges facing coral reefs and connected coastal ecosystems. The conference program aimed to be multidisciplinary and bridge skills, linking microbial ecology, ecosystem dynamics, and the broader societal and policy contexts of factors shaping reef health today. One of Gareth’s PhD students, **Danielle Spring**, also attended the conference.



Welsh Crucible



Ocean Sciences research fellow **Sophie Ward** has been awarded a coveted place at the 2026 Welsh Crucible. This award-winning programme is designed to foster personal, professional, and leadership development among future research leaders in Wales.

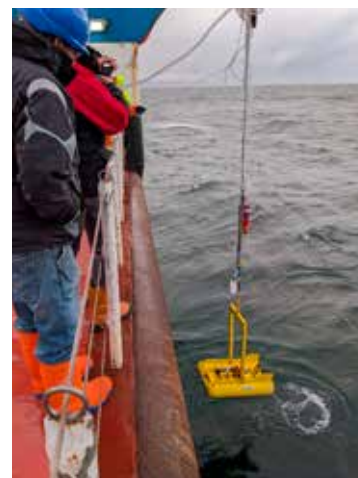
Each year, 30 exceptional researchers from across Wales are chosen to participate in a series of intensive and immersive residential workshops. These workshops provide a unique opportunity to work with researchers from other disciplines, enhance the impact of their work, and support the development of their international research careers. The programme kicked off in Cardiff and will be followed with workshops in Bangor and Swansea, throughout June and July.

All Aboard!

Assessing the impact of trawling on carbon storage in the Irish Sea

During February and March, a major scientific voyage embarked on the RRS Discovery, one of the world’s most advanced research vessels. Led by Professor **Jan Geert Hiddink**, a team of 18 scientists, including **Ben Lincoln**, **Tim Whitton** and **Ben Powell** set off to investigate the impact of trawling on carbon storage in the seabed.

Commenting Jan said, “Bottom-trawl fishing provides a quarter of global seafood but is also the most extensive physical disturbance caused by human actions to stocks of carbon locked in sediment on the seabed. This is significant because recent evidence suggests that seabed disturbance could result in significant greenhouse gas release from the seabed and to the atmosphere. There are major uncertainties in our understanding of the effect of this disturbance on seabed stores of carbon. Consequently, the impact of seabed disturbances on carbon stores are largely unquantified and currently unregulated. The aim of this project is to get a much clearer understanding of what’s going on to inform what action might need to be taken by scientists, policy makers and regulators in the future.”



Jan leads the project which involves researchers from the Centre for Environment, Fisheries and Aquaculture Science (CEFAS), Herriot-Watt University, University of Leeds, PML, University of St Andrews, and Imperial College London.



Tsunami mixing around Antarctica

Geosciences PhD student **Kate Retallick**, embarked on a new adventure to the frozen continent, to investigate oceanographic impacts of glacial calving in marine terminating glaciers. This was led by a British Antarctic Survey multi-disciplinary research team. Kate was initially based on board the RRS Sir David Attenborough and then at Rothera research station, where she used a Bangor University multibeam echosounder, mounted to the ship's workboat 'Erebus', to create the first 3D profiles of the ice front at Sheldon Glacier. These profiles alongside seabed bathymetry, obtained as part of Kate's PhD research, will contribute to the NERC funded POLOMINTS research project which investigates the dynamics and impact of internal tsunami waves generated during large glacial calving events. Kate also assisted with the deployment of oceanographic gliders and the monitoring of a stereo camera system, installed to record the calving, and she will retrieve this during

the next Antarctic summer to complete the fieldwork element of the project.

Kate said, 'It has been a privilege to work in such an awe-inspiring place alongside an amazing research team supported by an incredible crew who were fully committed to supporting the scientific aims of the project'. More information on POLOMINTS can be found at: www.polomints.ac.uk.



Photo: Joesph Laurance, British Antarctic Survey

Ocean Sciences lead Cayman Islands One-Health Pathogen Surveillance

Dr **Laura Richardson**, a Research Fellow at SOS, was recently awarded a highly competitive Bursary from the Learned Society of Wales (LSW) to establish a new international research collaboration in the Caribbean. The grant funded an intensive research visit to Grand Cayman to launch a pilot study quantifying public health pathogen prevalence in shallow coastal bathing waters. This initiative successfully bridges the gap between marine ecological health and public health, moving research into an impactful, multi-sector One-Health framework.

The study's field and lab work relied on generous in-kind contributions and local capacity from the Cayman Islands Department of Environment (DOE) and the Cayman Islands Molecular Biology Lab (CIMBL). Working alongside local government officers, the team deployed 78 custom passive water samplers across 13 high-use coastal zones, including Seven Mile Public Beach and the Sandbar, to catch target human-borne pathogens like norovirus and adenovirus. Supported by exceptional laboratory access and the technical expertise of CIMBL staff, 73 successfully recovered samples were processed on-site for DNA extraction.

Laura led the project with support from **Susan Allender** (SOS) and Dr **Jessica Kevill**

from the School of Environmental and Natural Sciences (SENS), who brought crucial expertise in molecular pathogen surveillance and donated equipment. Looking ahead, the extracted samples are undergoing 16S sequencing and metagenomic analysis to track microbial and



viral community data, directly contributing to identified research priority areas of Cayman Islands Government, the objectives of the DEFRA Blue Belt Programme, and local water quality monitoring while expanding institutional ties between Bangor University and the Cayman Islands Government.

Saving Native Oyster Species on the Brink of Extinction

Conservation scientists, in partnership with scientists from the Zoological Society of London (ZSL), have completed an ambitious project to bring a species of UK native oysters back from the brink of extinction. In the first initiative of its kind in North Wales, the team have restored native oyster habitats in Conwy Bay, providing a home for 2,000 European flat oysters.

Once a major part of Wales' fishing industry, supporting coastal communities, the species has declined by 95% across the UK over the past 200 years due to habitat loss, historic over-harvesting, pollution and disease. The team worked to recover this lost marine habitat. The Restoring Wild Oysters to Conwy Bay Project, marks a significant restoration trial, improving the health and resilience of coastal waters. It was funded by the Nature Networks Programme, delivered by The National Lottery Heritage Fund in partnership with the Welsh Government.



Working with Conwy's Local Harbour Authority, the project placed shell material (cultch) onto the seabed to form the base of a new marine ecosystem. **Maria Hayden-Hughes** said, 'Through this restored reef, we aim not only to support the next generation of native oysters, but also to improve biodiversity and water quality in our coastal waters, which we will continue to monitor and research over time.'

Rhianna Parry, Engagement and Research Officer at the School of Ocean Sciences commented: "Alongside oyster habitat restoration, we have delivered ambitious education and engagement programmes which reached more than 11,280 members of the public, 3,060 students, and trained 303 citizen scientists, helping reconnect people with their natural heritage."



Welcome Back

We were delighted to welcome back Dr **Mark Belchier** (BSc Marine Zoology, 1990), Director of Fisheries and Environment at GSGSSI, to talk about his work managing the conservation efforts in South Georgia and the South Sandwich Islands in the sub-Antarctic. South Georgia is one of the most wildlife rich areas in the world and an important biodiversity hotspot. Pictured here with Lecturer Dr **Phil Hollyman** who arranged the visit and Head of School Professor **Stuart Jenkins**.



We were also delighted to welcome back Dr **Ciarán McLaverty** (BSc Marine Biology, 2006) who presented his work on 'Historical Human Influences on the World's Continental Shelves'. Ciarán is now a research fellow at Exeter University.

We also welcomed back Dr **David McCann** (MSc & PhD in Physical Oceanography, 2010) who is now a Senior Scientist at National Oceanography Centre and gave a very inciteful seminar on his recent work on "Airborne Remote Sensing of Ocean Surface Processes".



Student News

From the lecture hall to the zoo with Steve Backshall



A group of Bangor University students, from the School of Ocean Sciences and the School of Environmental and Natural Sciences, recently enjoyed an unforgettable day out at Chester Zoo with TV Naturalist **Steve Backshall**, an honorary Senior Lecturer here at Bangor University.

The trip included complimentary tickets to attend Steve Backshall Live, a sell-out wildlife show at the zoo. The live stage event saw the award-winning wildlife presenter bring the fascinating world of sharks to life through storytelling, scientific insight, and his own extraordinary fieldwork experiences.

The students also enjoyed free access to Chester Zoo, exploring its newest animals and habitats as well as spending time with Steve behind the scenes for a chat and photos after the show.

After the event Steve said: "I always love meeting Bangor University students. There have a real enthusiasm and energy about them and I feel very fortunate to be an honorary senior lecturer here."

Eliana Caragia (BSc Ocean Sciences), student editor of The Bridge was amongst those present: "For many of us it was a day that brought our passion for the ocean full circle, from watching Steve dive with sharks on screen as children, to discussing marine conservation with him in person as the next generation of ocean scientists.

This is exactly the kind of experience that makes studying Ocean Sciences at Bangor unique, and where the wonders of the marine world don't just stay in the lecture hall but come to life in the most extraordinary ways."

Dr Robin Perrin Scholarship

Arwen Wall (BSc Marine Biology and Oceanography with Placement Year) was awarded a **Dr Robert Perrin scholarship** to study marine plastic pollution, in particular the tracking of the diversity of biofouling communities and plastic degradation in the marine environment. Here she talks more about her resulting research:

"Over summer 2025, I was awarded the Dr. Robert Perrin scholarship to work with Dr **Winnie Courtene-Jones**, researching the effects of plastics in the marine environment. The project involved investigating the diversity and abundance of biofouling communities on five different materials, deployed in the Menai Strait and collected in two-week intervals, over an eight-week period.

Biofilms consist of micro and macro-organisms. Understanding how biofilms form over time, and whether they vary between materials will increase knowledge of the fate of plastic within marine ecosystems, as biofilms can change certain properties of plastics, such as density.

This opportunity has enabled me to work at the School of Ocean Sciences surrounded by academics and researchers within the field of marine science, giving me the chance to ask questions and discuss a range of topics. The project work itself has allowed me to immerse myself in conducting independent research and learn and improve other my scientific skills."



Student Awards

University's Student Rep Team awards



Receiving the prize with **Charlotte Colvin** are **Ellen Kew** (MSci Geological Oceanography), **Becks Gillmore** (BSc Marine Biology with Placement Year), **Che Flowerdew** (BSc Marine Biology), **Beth Murphy** (MSci Marine Biology and Oceanography with Placement Year) and **Jesse Field** (BSc Marine Biology and Oceanography).

This year's Student Led Teaching Awards saw a win for the School of Ocean Sciences Rep Team and Director of Student Engagement Dr **Charlotte Colvin**. The award of 'Rep Team of the Year' recognises our fantastic School Reps, who go above and beyond to make sure students voices are heard, and create positive change in our school.

Coleg Cymraeg Cenedlaethol Studentship

Congratulations to **James Roberts** (BSc Geological Oceanography) on being awarded a prestigious Coleg Cymraeg Cenedlaethol PhD studentship to continue his studies.

James' research will be working with General Circulation Models (GCMs) to forecast the impacts of climate change in North Wales across the mid-century and late-century. His primary supervisor will be **Iestyn Woolway**.

Best Postgraduate Talk

Congratulations to Ocean Sciences **Tom Gale** (PhD Ocean Sciences) on winning the best 3rd year talk at the College Postgraduate Research Conference. His talk was on "Multiscale habitat selection of foraging benthic seabirds within a tidal stream environment" and is supervised by Dr **James Waggitt**.

Students publish their work

A new paper based on **Emma Stein's** (MSc Marine Biology, 2022) thesis highlights specialism within a generalist population of *Cancer pagurus* crabs. Making selections across a spectrum of bivalve prey, five crabs showed no preferential selection while seven consistently selected either clams or cockles. Mussels, with highly varied caloric values and accessed through prying, were selected less frequently. Male crabs showed a higher selection index for cockles, potentially due to their larger claw sizes. These results suggest potential implications for how we understand trophic interactions, as we may find specialist-like foraging within a generalist population.

Paper: **Emma L. Stein, Martyn Kurr** (2026) Choosers amongst beggars: Individual prey selection by a generalist predator, *Cancer pagurus* (Crustacea: Brachyura), varies with sex-related phenotypic plasticity. *Journal of Experimental Marine Biology and Ecology*, 598, 152187

<https://www.linkedin.com/feed/update/urn:li:share:7458039843982540800/>

MSci students **Megan Hilton** (MSci Marine Biology, 2023) and **Abigail Nichols** (MSci Marine Vertebrate Zoology, 2022) both contributed to a new paper led by PhD student **Lorna McKellar**:

The new paper aims to answer the question: "How can we define "good condition" of the seafloor in a way that is both scientifically robust and usable for real-world management of human activities and pressures?"

The new study helps bridge the gap between marine science and policy implementation, presenting a transparent and scalable approach to defining thresholds for Good Environmental Status of the seafloor, using natural variability in minimally impacted ecosystems.

Lorna McKellar, Matthew M. Holland, Abigail McQuatters-Gollop, Tye L. Kindinger, **Abigail Nichols**, Sebastian Valanko, **Megan Hilton**, **Jan Geert Hiddink** (2026). Estimating ecological thresholds for good status using natural variation in reference conditions. *Journal of Applied Ecology*, <https://doi.org/10.1111/1365-2664.70391>



Were there tides on Mars?

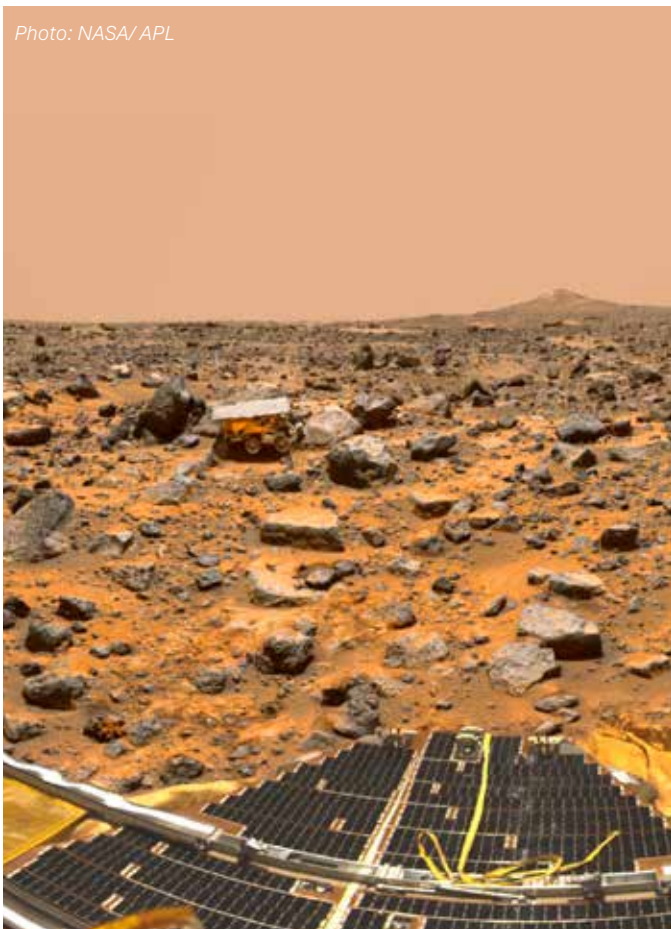
We know Mars had an ocean in its deep past, although its extent has been disputed. Oceans are important for life on Earth, and tides play a crucial role in driving ocean circulation. Evidence of tides on Earth can be recorded in sedimentary deposits called *tidalites*. On Mars, NASA's Curiosity Rover and the CNSA's Chinese Zhurong Rover have explored the Gale Crater and the VBF, respectively. Both Rovers have taken pictures of formations that resemble tidalites as seen on Earth. Mars only has two small moons and is about 50% farther away from the sun than the Earth is, so any tides would be much weaker than the tides on Earth.

In a new paper by **Michael Jolley** (MSci Marine Biology and Oceanography, 2025), together with Professor **Mattias Green**, simulated the tides on Mars using a numerical tidal model and the latest geological reconstructions of the Martian surface. These simulations show that the capacity for sediment transportation by tides is very small. There are some areas where sediment could be transported by tides, but they could not transport sediment at the locations of either of the Mars Rover expeditions. This means that the structures found by the Mars Rovers are most likely not tidalites and so must have been created by other processes, for example, waves and ocean currents, potentially in combination with the tidal currents.

These new results could help guide the locations of future Mars missions. Furthermore, they also show that a higher level of caution is needed when interpreting tides from the rock records on Earth, as well as on other planets.

Paper: Jolley, Michael; Gugliotta, Marcello; Green, Mattias (2026). Were there tides on ancient Mars? *Journal of Geophysical Research: Planets*, DOI: 10.1029/2025JE009292.

Photo: NASA/APL



Careers Fair

We are very grateful to all the exhibitors who took time out to attend our careers fair in February. The list of exhibitors included The Crown Estate, RWE Renewables, Intertek Energy & Water, National Grid, European Subsea Cables Association via Pelagian, Nortek, Environment Platform Wales, Ecoscope Ltd, Educators Wales, North Wales Wildlife Trust, Ymgynghoriaeth Gwynedd Consultancy (YGC), Love the Oceans and our very own SOS placements team

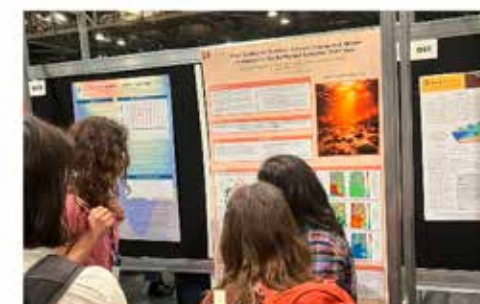
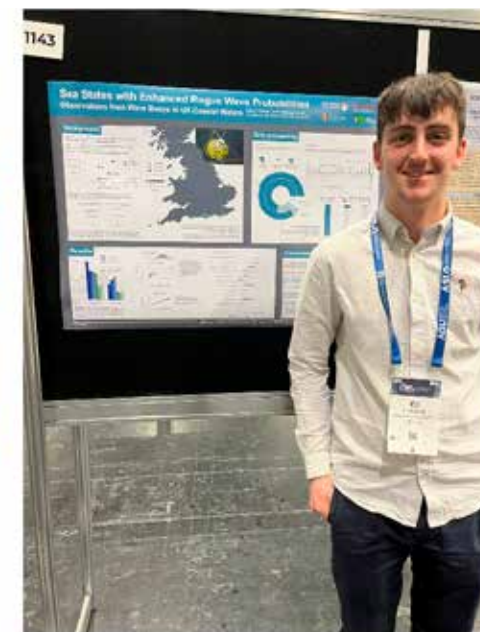
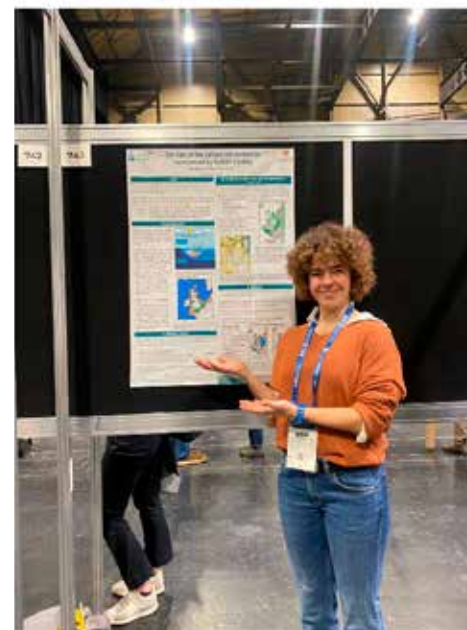
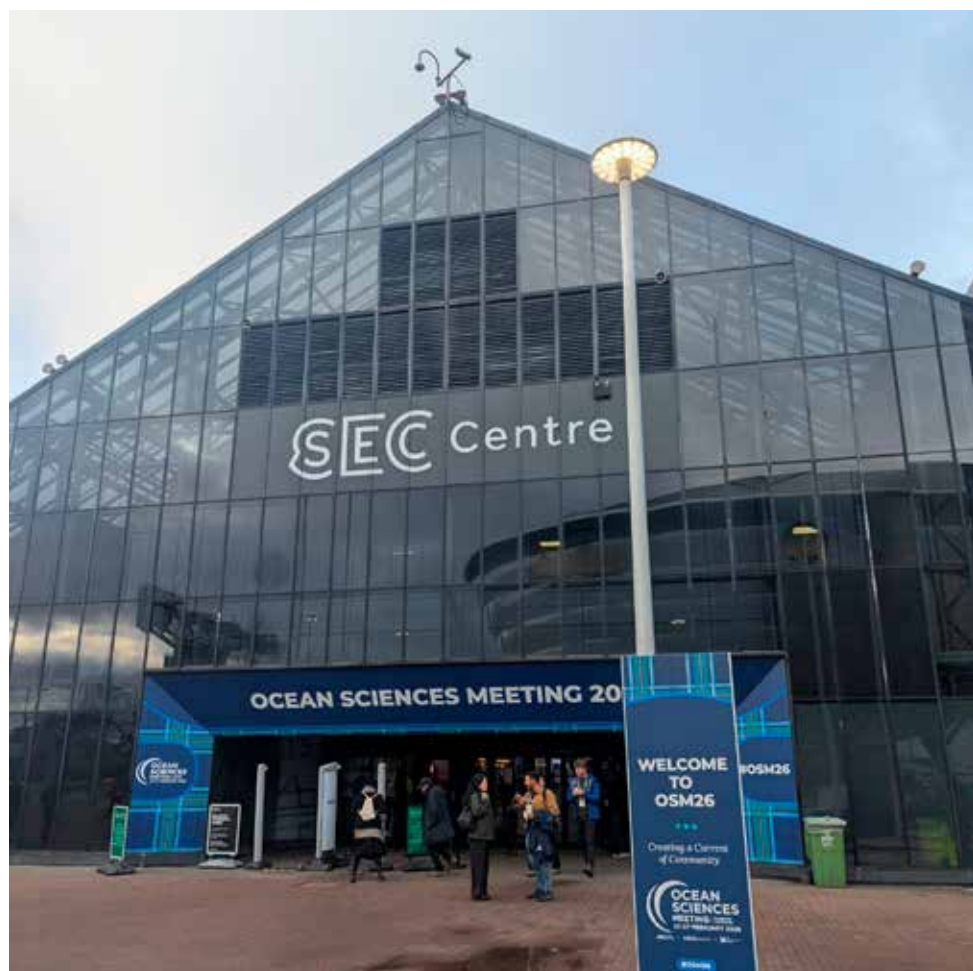
Over 150 students attended taking the valuable opportunity to have informal chats with these different organisations, some of whom are actively recruiting. We were also very happy to welcome back several of our alumni as exhibitors and thank them for sharing their journey with the 'next generation'.



American Geophysical Union Ocean Sciences meeting

This spring saw the world's largest ocean sciences conference come to Glasgow. Amongst the 6,000 attending were a group of Bangor PhD and MScRes students presenting their work. **Vedant Vairagi** (PhD Physical Oceanography) shares his experience:

"This was my first conference that I have attended as a PhD student. The scale of the AGU Ocean Sciences meeting was impressive, with over 6,000 people gathered from all over the world. I was thrown straight into the deep end, presenting the first chapter of my PhD titled *Stratification in the Arctic Ocean's Beaufort Gyre Layer Cake* during the first session on day one. I was initially nervous, but support from my friends and the constructive feedback of fellow oceanographers made it incredibly rewarding. This year, the organizers tried something a bit different with a silent disco style setup in a massive hall with six stages; you'd just tune your headphones to whichever speaker caught your interest. It felt a bit futuristic and gave everyone the freedom to jump between topics which ranged from high-latitude physics to renewable energy, without the usual awkwardness of ducking out of a room mid-talk."



"The real networking took place at the daily poster sessions from 4:00 to 6:00 PM. It was a proud moment to see our Bangor University group out in full force. Huge credit to **Edward Roome**, **Kassandra Stewart**, **Khalid Bukhari**, **Danielle Spring**, **Soizic Garnier**, and **Marina de Llobet Payas** for their fantastic presentations. Those afternoons usually melted into polar beers, trivia nights, and jam sessions, which were the perfect way to actually get to know the people behind the research. When I wasn't networking, I was checking out the latest tech at the exhibition booths, checking out the new CTDs, VMPs, and gliders, or chatting with teams from various US universities and the societies. The conference wrapped up with a talk on the UN Ocean Decade and the exciting news that the next Ocean Sciences Meeting will be heading to Vancouver in 2028."

"Overall, this was a fantastic experience. I want to extend my gratitude to the AGU team for organizing such a seamless event. It was the perfect opportunity to connect with scientists and professionals across all disciplines. No matter your discipline, I cannot recommend the Ocean Sciences Meeting enough."

Marine Energy Wales Conference



Thanks to the generosity of the team behind the Awel y Môr Offshore Wind Farm in Liverpool Bay, students got to attend the country's biggest marine energy conference. Many of our undergraduate and MSc students took up the opportunity to attend the conference held in Llandudno.

The annual conference brings together developers and supply chain companies working across wind, tidal and other marine energy sectors working in Wales. It provides a key forum for collaboration across Wales' offshore renewable energy sector.

With an estimated 12,000 jobs in the pipeline associated with the development of floating offshore wind in the Celtic Sea, marine renewable energy provides major career opportunities ocean science graduates. Attending the conference gave our students the opportunity to network with potential employers and speak to experienced professionals.

Students were also able to attend an early careers panel discussion sponsored by the Awel y Môr Offshore Wind Farm, and heard about the world leading Bangor research on floating wind environmental impacts from **Ben Lincoln**, a research fellow at SOS, at the Technical Show Case.

Luca Kaplan (BSc Ocean and Geophysics) commented: "Speaking to industry professionals about their roles and experiences was helpful, as it gave me a clearer understanding of the pathways within the sector."



Joseph Knock (BSc Ocean and Geophysics) said: "I found the early careers in marine energy panel particularly useful in giving me an insight into how I can move from being a student into working in marine energy."

George Cox (BSc Marine Biology and Oceanography) said: "This experience was invaluable for me. As a first-year student this has really helped me understand what employers are looking for and how to develop my skills towards careers that I knew very little about prior to the conference."

April Bishop (BSc Marine Biology and Oceanography) added that the conference provided "insight into the diverse work and perspectives across the sector within a collaborative and inclusive environment."

Austin Kitson (MSc Marine Environmental Protection) found that the exhibitors were helpful and even had one offer to reach out if they ever wanted to do some research with them!

Reflecting on acting as a conference volunteer **Jazmine Cowlin** (BSc Ocean Science, 2025, MSc Physical Oceanography) told The Bridge:

"In April, I volunteered with Marine Energy Wales and Pembrokeshire Coastal Forum at the annual MEW Conference in Llandudno. It was an incredible opportunity to network with professionals across the sector and listen to a range of fascinating talks exploring developments and future progression within marine renewable energy.

As a volunteer, I attended both days, helping to check delegates in, collecting feedback, and supporting the event team wherever needed. Being part of the MEW team gave me valuable insight into how large industry conferences are organised, while also allowing me to engage directly with attendees and speakers. The event created a welcoming and collaborative atmosphere, making it easy to speak with professionals from across industry, academia, and policy backgrounds.

As a master's student currently writing my thesis on floating offshore wind, the experience was especially valuable. Attending talks, learning more about current industry developments, and speaking with stakeholders provided a perspective beyond the academic framework. One particularly insightful session focused on early careers in the renewable energy sector and featured a panel of young professionals sharing their experiences. Their advice emphasised the importance of being persistent when reaching out to companies, applying for internships, and creating a CV that helps you stand out. This allowed me to apply knowledge from my studies while also considering new ideas and approaches within the sector.

One of the most rewarding aspects of the event was the opportunity to build professional connections and gain greater awareness of future opportunities in the field. I would strongly encourage any student who is passionate about their subject to attend a conference, particularly as a volunteer. It is a fantastic way to gain experience, expand your network, and spend time immersed in a field you genuinely enjoy."

Happy 100th Birthday Sir David Attenborough

Students and staff from the School of Ocean Sciences and the School of Environmental and Natural Sciences came together to celebrate Sir David Attenborough on his 100th Birthday. There were multiple talks explaining the influence that the naturalist had on our staff and how this shaped their careers.

Dr **Martyn Kurr** and Dr **Winnie Courtene-Jones** spoke about watching the documentaries, the moments of wonder that first connected them to Attenborough's work and the childhood memories that this created. Their stories were moving, personal, and a reminder of how powerful one voice can be in shaping future generations.



200th Anniversary of the Menai Suspension Bridge.

The Menai Suspension Bridge Bicentenary History Day took place on Saturday 31st January.

The event was organised by the University and the Menai Bridge Community Heritage Trust, coordinated by Dr Marc Collinson



and Dr Lowri Ann Rees from the School of History, Law and Social Sciences, and supported by the Bangor Fund and Bangor City Council.

Professor Enlli Thomas, Pro-Vice Chancellor for Welsh, EDI, and the Region, delivered the welcome address.

This was followed by an interdisciplinary panel of speakers including Dr **Mike Roberts** from the School of Ocean Sciences, Dr Karin Koehler from the School of Arts, Culture, and Language, and Dr Lowri Ann Rees, alongside John Cole, Dr Warren Kovach, and Kerry Evans from the Menai Bridge Community Heritage Trust.

Mike's talk at the event was about the evolution of the Menai Strait.

Bangor University has been ranked in TIME's World's Top 400 Universities 2026

We reached 360th place globally, and were one of only two Welsh universities recognised in the league table. Produced by TIME in partnership with Statista R, the ranking highlights institutions that drive excellence on a global scale.

Bangor University maintains top spot in Alternative University League Table

Bangor maintained position as the number one university in the UK in an Alternative University League Table published by Unifresher. The compilers based their guide on UK institutions listed in The Complete University Guide. This year we stood out for our strong balance of affordability and student experience, with relatively low everyday living costs alongside high ratings for social life and sustainability.

We also took the top spot in the same league in 2023, reinforcing our reputation as a relatively affordable and safe place to study.

Unlike traditional university league tables that focus on grades, enrolment, and graduate prospects, Unifresher's ranking compares factors reflecting real student life, including cost of living, crime rates, sustainability efforts, and the quality of the social scene.

Our commitment to sustainability, and its ambition to lead the sector in this area, also contributed to its high score. The University ranked particularly strongly for being a cost-effective and safe place to live and study, while the final element of the ranking draws on student opinion data about social life at their universities.



Fifty Years Before the Mast: Piers Chapman (PhD student 1971-1974)

(With Apologies to R.H. Dana, Jr.)

In October 2022 I completed my final oceanographic research cruise, collecting water samples from the *R.V. Pelican* in the Gulf of Mexico as part of a U.S. National Oceanic and Atmospheric Administration (NOAA)-funded project. While the cruise was underway, I realised that it was exactly 50 years since I did my first cruise, in Liverpool Bay on the old **Prince Madog**, collecting water samples for my Ph.D. dissertation.

My first view of the Marine Labs at Menai Bridge was in late 1967, when I arrived for interview for a place as an undergraduate and was interviewed by Dr. **Eifion Jones**. It was probably raining at the time. Although I was accepted to do marine biology, in the end I obtained my undergraduate degree in chemistry (not possible now, according to the prospectus), and so didn't start work in Menai Bridge until September 1971, working on iodine chemistry under Dr. **Peter Spencer**. Iodine is interesting in that it can exist in two oxidation states, iodate and iodide. While iodide is the predominant form in freshwater, albeit in very low concentrations, in the ocean it is essentially found only in the upper 200m of the water column, with iodate and small concentrations of organically-bound iodine below this depth. How the interconversion happens is still not completely understood, although iodate can be reduced in low-oxygen environments.



Apart from taking regular water samples from the pier, I also managed 15 cruises in total on the 'old' Prince Madog, across Liverpool Bay from the Mersey sewage dumping grounds, where Dr. **Ivor Rees** and his student Rob Eagle were monitoring the spread and disappearance of the sewage sludge, and in the Irish Sea during Prof. **John Simpson's** physical oceanography cruises. The latter frequently involved a lot of bouncing around given the short-wave period and wind-induced chop. On returning to port after one of these cruises, in February, the bosun fell into the Strait while trying to grab the mooring buoy. With the water temperature being about 5°C, he was told to get some dry clothes on fast but merely went over to the Mostyn Arms for a couple of drams before going home, still wet!

Sport occupied quite a bit of my spare time at Bangor. Playing squash with **Graham Savidge** was exciting because of his very long reach, while the Marine Science cricket team won the inter-department cricket league three years running while I was there. I was also a founder member of the university orienteering club, which gained considerable success in UAU and BUSF competitions.

Although I hadn't completed writing up my Ph.D. by the end of my grant (I actually needed an exemption from the university to be able to finish it later), I was accepted for two years as a postdoc by alumnus **Peter Liss**, at the University of East Anglia (UEA), where we tried to make some sense of air-sea transfer of chemical species (1). We were still looking at iodine, and this led to a second paper (2), with another alumnus, **Vic Truesdale**, who was then at the Hydrological Research Institute in Wallingford. Sampling the sea surface microlayer was tedious, as it involved leaning over the side of a rubber dinghy using either a glass plate or a metal screen, which picked up only a few ml of water at a time. The aim was to collect only the uppermost 200-300 microns of the sea surface, so you needed calm weather.

After UEA, I joined the Yorkshire Water Authority, now Yorkshire Water, at their Tophill Low laboratories, between Beverley and Driffield. The lab carried out routine analyses of potable waters and sewage and other industrial waste effluents, but the interesting part was sampling the Humber estuary by helicopter from a height of about 30 ft. We would fly down to Spurn Head in the early morning, follow the tide upstream as far as the barrier at Goole, at the mouth of the Yorkshire Ouse, as well as sampling the River Trent at the confluence, collecting water samples by lowering a plastic bucket and using an oxygen probe. We would then sample again on the way back as the tide fell. Once we were sampling in a thunderstorm, and managed to blow up the oxygen probe, which my boss had on his lap in the front seat, as it earthed out when it hit the water. The pilot also had the unnerving habit of cutting the engine as we were coming into land when we were still at an altitude of about 200ft!

After almost a year at Tophill Low, I moved to Cape Town, South Africa, to a position with the Sea Fisheries Research Institute. This was very similar to the U.K. CEFAS, in that we existed to provide the stock assessments needed to set fishing quotas. We also had the task of tracking marine pollution incidents, largely oil pollution, but also factory effluents and red tides, which were often toxic. I started in the pollution

section, but after a couple of years moved over to the environmental section, which was concerned with the general oceanography around the South African coast and how this affected the fisheries.



The two contrasting regimes, the cold, upwelling Benguela system on the west coast, and the warm, western boundary Agulhas Current, provided ample opportunity for research work, and I would often go out on stock assessment cruises to take environmental samples at all the trawl stations.

Two of the more interesting cruises involved chasing Agulhas rings on the U.S. *R.V. Knorr* with Arnold Gordon in 1983, and a cruise around the south-east Atlantic looking for rock lobster larvae in 1989. On the latter cruise we landed on both Tristan da Cunha and Gough Island and were able to get very close to some of the local wildlife. I also took my newly-married wife, Lesley, on a cruise to the Antarctic in 1980 on the SA Agulhas; well, we had 80 berths on the ship and there were only 20 scientists so the Captain invited wives along to improve both morale and the general atmosphere.

Towards the end of my time in Cape Town, the Institute was running low on funds for fuel for their ships, so I and a colleague suggested we take one up the west coast to Cape Columbine, a major upwelling centre, and carry out an anchor station survey for one month. We sampled every four hours for 30 days straight. While the Captain and crew probably thought this was the most boring cruise they had ever been on, we scientists gained a load of information on how the system worked, leading to a complete issue of *Progress in Oceanography* on the results (3).

The late 1980s were a period when great changes were coming in both oceanographic research, particularly in terms of new instrumentation, and South African politics. I was a member of the South African WOCE program committee (see **John Gould's** article in the winter 2024 issue of *The Bridge*), and this led to my next job, as Director of the U.S. WOCE Office at Texas A&M University (TAMU) in College Station, Texas.



WOCE was a huge undertaking and the U.S. put about one third of the total research funding into the program, while the data are still being used by many researchers. The meetings spanned the globe and greatly increased my frequent flyer mileage. I managed to take part in two WOCE cruises, one on the *R.R.S. Discovery* from Punta Arenas, Chile, to Cape Town under Peter Saunders, the other from Mauritius to Muscat, Oman, under

Don Olson, from Miami. This cruise involved an equator crossing, designed to embarrass the participants as much as possible, and I was duly dealt with, on the grounds that it was all my fault they were there to begin with!

When WOCE funding ceased in 2002, I needed another job and moved to Baton Rouge to take up a position managing a NOAA-funded



program on coastal restoration, based at Louisiana State University. Unfortunately, NOAA never put the program on their central budget, so I had to keep annoying the local senators and their assistants to get funding added through special funding known as an earmark. I managed to fund a number of small projects before the program was terminated in 2007, but whether this made any real dent in the problem of land loss along the Louisiana coast is doubtful, given that the major cause is land subsidence coupled with sea level rise. During my time in Louisiana, we lived through the landfalls of hurricanes Katrina and Rita in 2005, when we lost power for over a week during the hot and humid summer.

In late 2006 I received a phone call from a colleague at Texas A&M asking if I would like to apply to become Head of Department in Oceanography. Quite surprisingly, given that I had never been a university academic, I was appointed and moved back to Texas in October 2007. One of the quirks of being a department head at TAMU at that time was that you didn't have to teach, but I took on an introductory class to show willing and earn "street cred" from the rest of the faculty. As department head, however, you were expected to bring in research dollars, and when BP's Deepwater Horizon drill rig blew up in 2010, I headed up a consortium that gained a major grant to look at the effects of the spill and see what could be done to ameliorate any future spills. This fitted in well with other work I and others had been funded for in the Gulf of Mexico on the hypoxic zone that develops each summer off the Louisiana coast (4), and our group produced a number of papers on how oil could be expected to move, both on the sea surface and within the water column (5).

After six years as department head I went back to being a regular faculty member, with the usual teaching and student mentoring requirements. I did a sabbatical at Flinders University, in Melbourne, Australia in 2016, when I co-authored a book on upwelling systems (6), but gave up my tenured faculty position in 2018, after which I stayed on as a research professor until 2022.

Now, after about 70 cruises, varying in length from one day to six weeks, almost 90 publications, and a lot of enjoyment throughout my career, I am back in the U.K., trying to keep my vegetable patch alive in southern Scotland and get back to competing at orienteering – sadly there is no cricket in this part of the world.

References

1. Chapman, P. and P.S. Liss (1981). The sea surface microlayer: measurements of dissolved iodine species and nutrients in coastal waters. *Limnology and Oceanography* 26, 387–390.
2. Truesdale, V.W. and P. Chapman (1976). Optimisation of a catalytic method for the determination of total iodine in seawater. *Marine Chemistry* 4, 29–42.
3. Bailey, G.W. and P. Chapman (1991). An Anchor Station experiment in the southern Benguela during autumn 1987: physical and chemical measurements. *Progress in Oceanography* 28, 9–37.
4. Rowe, G. and P. Chapman (2002). Continental shelf hypoxia: some nagging questions. *Gulf of Mexico Science* 20, 153–160.
5. Ledwell, J.R., R. He, Z. Xue, S.F. DiMarco, L. Spencer and P. Chapman (2016). Dispersion of a tracer in the deep northern Gulf of Mexico. *Journal of Geophysical Research*, 121, 1110–1132.
6. Kämpf, J and P. Chapman (2016). *Upwelling Systems of the World*. Springer, 433 pp.

Ramblings of a Commercial Oceanographer: Kevin Demming (MSc Physical Oceanography, 1969)

Marine Science Laboratories, Menai Bridge

I arrived at the Marine Science Laboratories—known to everyone simply as “the Labs” and now the School of Ocean Sciences (SOS)—in the summer of 1968, some 58 years ago. Having graduated in Physics from Aberystwyth and trained as a technical college lecturer, I had spent three rewarding years teaching at the only technical college in the newly independent nation of Zambia. Those years gave me a

lasting affection for East Africa, and I have returned many times since. As my time there drew to a close, however, I realised that my future lay elsewhere.

I applied for the newly established MSc in Physical Oceanography at the Labs. I vividly remember my first interview in Menai Bridge on a grey, rainy September morning—a world away from the warmth and colour of Africa. My interviewer was a young **John Simpson**,

who had only recently joined the staff. I was accepted, and with that the die was cast. My working life in oceanography would span almost forty years.

Denis Crisp

By the time I arrived, the Labs were becoming well established. They had emerged from the Zoology Department “across the water” during the early 1950s and owed much of their existence to the drive, determination, and sheer cussedness of one man: the marine biologist **Denis Crisp**. He joined in 1951 and was instrumental in shaping what the Labs would become. As **Ionna Psalti** writes in her excellent history *Across the Bridge*: “*Crisp was an addict to scientific quest, possessing also the rare gift of boundless imagination and the unique talent of inspiring either loyalty or fear amongst people.*” In other words, he made things happen!

Under his leadership, the Labs grew steadily. Over the following years, the Department of Marine Biology attracted an impressive group of scientists, including **Eifion Jones**, **Peter Spencer**, **George Floodgate**, **Sinclair Buchan**, **Ivor Rees**, **Derek Dorsett**, **David Grove**, **Ian Lucas**, **David Jones** and many others. These were men who left a significant mark on British marine science during its formative years.

Jack Darbyshire



Jack Darbyshire with Tony Lewis, who went on to be Professor and Head of Civil Engineering at the University of Cork.

As marine science developed, it became increasingly apparent that understanding the dynamics, geology, and chemistry of the seas was just as important as understanding their biology. To address this, a Department of Oceanography was established in 1963.

Eight candidates applied to become its first Head. Among them was a professor from the Oceanographic Institute in Cape Town. In many respects he was the obvious choice. Not only was he an internationally respected physical oceanographer, known for his pioneering work on coastal and ocean waves, but he had also played an important role in wave forecasting for the D-Day landings. Better still, he spoke Welsh and hailed from Blaenau Ffestiniog. His name was **Jack Darbyshire**.

With Darbyshire's appointment, the momentum behind the Labs accelerated. **Denzil Taylor-Smith**, whose links with industry and government research proved invaluable, joined in 1964 to establish marine geology. **Sinclair Buchan** transferred to work with him, followed by **Bill Bailey** and **Tony Jones**. **John Simpson** joined physical oceanography in 1966, while **Alan Morris** and **Pete Foster** strengthened marine chemistry. John, of course, would later become Professor of Oceanography and Head of the School of Ocean Sciences.

By the time I arrived, the Department of Oceanography comprised three distinct disciplines: physical oceanography, marine geology, and marine chemistry.

Big Beasts

It would be misleading, however, to suggest that everything was harmonious. Having two such formidable personalities as **Denis Crisp** and **Jack Darbyshire** under one roof was never going to be easy. Both were strong-willed men with clear ideas about how their departments should develop. Rivalry between them was inevitable and occasionally descended into outright petulance. I remember one occasion when Jack accused Denis of pinching his department's bottle of milk!

Yet beneath the disagreements lay an important similarity. Both men wanted the Labs to succeed. Both believed passionately in their vision and were determined to see it flourish.

Like many organisations, the Labs benefited at times from creative tension. Disagreements exposed weaknesses, highlighted areas requiring attention, and occasionally prompted necessary change. Looking back, I like to think that both Crisp and Darbyshire lived long enough to see their shared ambition realised: the transformation of the Labs into one of the leading centres of marine science in the United Kingdom.

MSc Physical Oceanography



For me, the Labs opened the door to an entirely new and exciting world. The MSc in Physical Oceanography was only in its second year, and there were seven other students on the course alongside me. Across the whole of the Labs, there were probably no more than twenty MSc and PhD students. Today, the number runs into the hundreds.

In 1968, physical oceanography was still a relatively young discipline. It was viewed largely as an academic and research pursuit. Yet beyond the horizon, the rapid development of North Sea oil and gas was creating a demand for oceanographic data that would soon transform the profession. Engineers designing drilling rigs, production platforms, and pipelines would need reliable information about the marine environment in which their structures would operate.

Lectures were interspersed with fieldwork aboard the ‘old’ **Prince Madog**, commissioned only a year earlier in 1967. There were field trips in the Irish Sea, gathering data and gaining practical experience. One particularly memorable expedition took us up Scotland's west coast and through the Caledonian Canal to Inverness (a route the ‘new Prince Madog’ followed last summer). For budding oceanographers, it was both an education and an adventure.

Social Life

One of the great strengths of the Labs was the close interaction between disciplines. Everyone gathered together for coffee breaks. Marine biologists, oceanographers, geologists, chemists, staff, and students mixed freely, exchanging ideas and perspectives. Looking back, I am convinced that the science benefited enormously from these informal conversations.

The relatively small size of the community also fostered strong social ties. Staff, students, and their families frequently met at dinners, parties, and other events. My wife and I, with our two young sons, soon found ourselves participating in the Labs' babysitting club.

Dissertation



Among my fellow students was **Dave Newing**, a Royal Navy officer who had been seconded by the Admiralty to complete the MSc. For our dissertation projects, we bought a small four-metre wooden boat fitted with an

outboard motor and moored it offshore near the Mermaid Inn—long since gone—opposite Caernarfon. My dissertation examined the sand waves on the Traeth Gwylt sandbank at

the western end of the Menai Strait. Dave's focused on aspects of sound propagation in seawater. After each day's fieldwork, we would repair to the Mermaid to discuss the results!



Jamaica

Following my Master's degree, I spent two years conducting research in Jamaica, accompanied by my family. There was growing concern that the fjord-like geography of Kingston Harbour was contributing to severe pollution problems within the harbour itself. My task was to investigate the physical and chemical processes governing water circulation and exchange. The work was fascinating, and Jamaica was a wonderful place to live.

More importantly, the experience broadened my outlook. Having left Africa with traces of the paternal attitudes that many Europeans

of my generation unconsciously carried, Jamaica proved a valuable corrective. I found myself working alongside people whose intelligence, knowledge, and breadth of experience far exceeded my own. The friendships and professional relationships I formed at Port Royal and on the university campus remain among my fondest memories.

During our time there, **Jack Darbyshire** came to visit. We discovered him to be a warm, approachable, and genuinely helpful man. He was always willing to discuss ideas, offer advice, or simply listen. One detail remains vivid in my memory. Throughout his stay he wore short-sleeved synthetic shirts, and despite the Caribbean heat, he never appeared remotely uncomfortable. We were astonished.

Going Commercial: Marine Investigations and Services Ltd (MIS)

I returned to Menai Bridge in the autumn of 1972. The following eight months passed in something of a blur as I attempted to write up my Jamaican research while simultaneously worrying about how I was going to support a family of five. Our daughter had been born in Jamaica, and earning a living had become a pressing concern.

The breakthrough came in early 1973. The Labs asked me to manage a large-scale oceanographic survey of the Milford Haven Estuary. The study was designed to provide calibration data for a mathematical model being developed by Swansea University. The project was ambitious. It involved multiple vessels and numerous personnel operating throughout the estuary, collecting current, salinity, and temperature measurements over a range of tidal conditions. The logistics were challenging, but the study was ultimately judged a success.

The experience planted an idea. A fellow oceanographer at the Labs, **Tony Heathershaw**, was then studying for his PhD. Together we recognised that the rapidly expanding offshore industries were creating a growing demand for physical oceanographic services. In mid-1973 we established Marine Investigations and Services Ltd (MIS).

We rented offices on Bangor High Street. Our equipment was scattered across garages and storage spaces throughout the area, and we relied heavily on scientific and technical expertise drawn from the Labs. By modern standards it was a modest operation, but it represented the beginning of something new.

Building a Business

Gradually we recruited staff, both full-time and part-time, many of them graduates of the MSc programme. The names that emerge through the mists of memory include **Nick Emerson, Stephen Hayes, Grahame Copeland, Rod Jones, Ian Bellamy, Richard Hoare, Bill Prior-Jones, Adrian Smith, Tony Lewis....** No doubt there were others whom I have forgotten, and if so, I offer my apologies.

As workloads increased, Tony found it increasingly difficult to balance company responsibilities with his doctoral studies. Eventually he resigned as a director in order to complete his PhD. He later went on to hold a senior position within the Admiralty.

Trials and Tribulations

In early 1974 we found ourselves coping with Ted Heath's infamous three-day working



week. Across Britain, electricity supplies were severely restricted. Much office work was conducted by torchlight and candlelight.

Communications relied on telex machines and rotary-dial telephones (I can hear many readers saying, "What were they?!"). Later in the decade, fax machines appeared and seemed remarkably sophisticated. (What were they?!). Mobile phones were still science fiction, and desktop computers remained years away. Reports were produced on ribbon typewriters. If multiple copies were needed, sheets of carbon paper were inserted between pages. A report would often be typed by our secretary,



Kevin diving with **Vicki Billings**, another MSc student from the Labs doing fisheries research

corrected by the project manager, and then retyped from scratch. Occasionally the process had to be repeated yet again. The arrival of photocopiers revolutionised office life. Equally transformative was Tippex!

After a year we acquired a photocopier of our own—although “acquired” may be too generous a description. It was rented, copied only one side at a time, and required every sheet to be manually positioned on the glass. Producing three or four copies of a substantial report could keep us working well past midnight.

Data analysis was carried out using the University’s ICL 4130 mainframe computer under a commercial arrangement. Although state-of-the-art at the time, its capabilities were negligible compared with those of a modern laptop or even a smartphone. It occupied an air-conditioned room and required dedicated operators to keep it functioning. Data were entered using punched cards prepared by secretaries and then painstakingly checked for errors before processing. It was laborious work, and mistakes frequently required the entire process to be repeated.

The work undertaken by MIS covered a remarkably wide range of projects. Field investigations included dredging studies, sewage outfalls, power station developments, and oil industry projects. Our work took us to Milford Haven, the Menai Strait, the Tees and Thames estuaries, the Firth of Clyde, Llandudno, the Shetland Isles, offshore Cork, Abu Dhabi, and Qatar.

Alongside fieldwork, we undertook consultancy studies covering the North Sea, the Firth of Clyde, the Escravos Estuary in Nigeria, Songkhla in Thailand, the Arabian Gulf, the Gulf of Aqaba in Jordan, Aadloun in Lebanon, and projects for the Commonwealth Secretariat.

Looking back, I take pride in what we achieved. We were breaking new ground and were probably the first dedicated oceanographic survey company in the United Kingdom.

As an aside, I believe the first person to work in commercial oceanography in Britain was **Alan Greig**, a graduate of the Labs who worked for Imcos in London. During the early 1970s he provided environmental design and operational criteria for the developing offshore oil industry.

The Jamaica Report

At some point during 1974, the Marine Laboratories finally insisted that I complete my report on the Kingston Harbour research. By then I had procrastinated for far too long. The demands of running a business had continually pushed the report to the bottom of my priorities. Eventually it became clear that I needed help. A Principal Researcher at the Labs, **Toby Sherwin**, kindly agreed to co-author the report with me. I remain deeply grateful for his considerable assistance. Indeed, if I were asked today, in 2026, to identify one of my great regrets in life, it would be that I never did full justice to that work.

The End Is Nigh

By late 1975, MIS was becoming increasingly well known within the industry. We had developed a solid reputation and a growing workload. What we lacked, however, was the financial strength needed to invest in equipment and expand the business. Around this time, a Glasgow-based company approached me with a proposal to invest in MIS and provide development capital. In my naivety, I agreed to sell them a 50 per cent stake in the company. It proved to be a serious mistake.

The arrangement simply did not work. Looking back, it was very much the blind leading the blind. Neither side possessed the experience or financial expertise required to manage the situation effectively. Eventually both companies were dragged into insolvency. Many talented people suffered as a result, and to my lasting regret MIS was forced to close in early 1977. With that, our time in North Wales came to an end.

In retrospect, I had spent three and a half years on an intensive commercial learning curve. It is often said that success is built upon failure, and there is certainly some truth in that observation. From the rise and fall of MIS I took away a lesson that remained with me for the rest of my career. **Adage 1: Turnover is Vanity, Profit is Sanity, but Cash is Reality.**

But all was not lost. In the subsequent years Kevin setup a hugely successful marine survey company, Metoc, which has supported successful careers for many Bangor graduates over the years. On retirement the company was sold to the FTSE 100 group Intertek and became Intertek-Metoc. Again a company that employs many Bangor graduates (eg. see the Winter 2023-24 edition of the Bridge).



In the next edition of the Bridge you can read more about Kevin’s leading role in the development of commercial oceanography in the UK.

Maya Harries (BSc Marine Biology, 2025)

Since graduating in 2025, I completed my research assistant position with the Isle of Man Fisheries. I worked part-time during my undergraduate studies and full-time during the summer breaks. This role has been the

most enjoyable and rewarding work I have done so far. Working alongside Professor **Stuart Jenkins** and Dr **Isobel Bloor** has given me the confidence to grow as an early-career scientist, and the opportunities and research



experience I gained in this position fuelled my passion for methods development.

My bachelor's dissertation, supervised by Dr **Phil Hollyman**, is titled "Comparative Analysis of Biological Parameters of the Antarctic Starry Skate (*Amblyraja georgiana*): Implications for Conservation and Management." It is currently under review for publication, which will be my first paper as the first author.

Both experiences have led to my commencement as a PhD candidate at the Institute of Marine and Antarctic Studies (IMAS) at the University of Tasmania, which I began in January 2026. My project focuses on the development of Germ Cell Transplantation (GCT) in elasmobranchs as a conservation

tool for endangered species. The aim of the project is to transfer germ cells containing the genetic material of the endangered Maugean skate into the gonads of a host skate species that has a more stable population. These host skates will act as surrogates for the Maugean skate, carrying forth its genetic lineage for the remainder of their lives. The team at IMAS and myself are developing a cryobank of these cells so that if wild populations continue to decline, captive breeding programs may be established if needed.

I presented my preliminary results on the cryopreservation of these cells at this year's 13th International Symposium on Reproductive Physiology of Fish in May 2026 in Cairns, Queensland, Australia.

Lizzy Owen (MSc Marine Biology, 2025)

There are some meetings in life that seem somewhat fated. Having dragged my two bewildered teenage boys to a Bangor SOS undergraduate open day, following an epiphany that, despite having no prior experience, I should do an MSc in Marine Biology and study marine fungi, I ended up in front of Dr **Martyn Kurr**. His genuine, open enthusiasm for my random

request, and sharing with me a little of the work of his PhD student, influencing the alimentary canal microbiome of the sea snail *Littorina littorea*, grounded my vision. Twelve months later, after having harangued the postgraduate admissions tutor, I found myself sitting in my first lecture, googling the word "benthic" and wondering what in the mid-life crisis I had gotten myself into. After a deeply rewarding, oftentimes gruelling, nine months - contorting my brain in ways that reflected the defensive manoeuvres of a threatened octopus and having bled the pastoral support dry - I embarked on the research project of my dreams: an observational study investigating patterns in marine fungal diversity and community composition of a native versus invasive macroalgae at a local geographic scale.

We explored two sites on the Strait within 800 m of each other. One site contained the native macroalgae *Fucus serratus*, while the other contained *F. serratus* alongside an established invasive population of *Sargassum muticum*. Samples of the algae, sediment and seawater were collected at each site. DNA was extracted and fungal rRNA gene regions were amplified using fungi specific primers. This allowed me to explore patterns in the presence and abundance of marine fungal sequences between sample types, revealing some interesting findings.



Although the sites were chosen for their similarity in large-scale environmental conditions, and macroalgae are thought to play an active role in shaping their microbiome, the results suggested that small-scale local factors were more important in determining marine fungal composition than host specificity. There was also evidence of a natural peak in marine fungal diversity, even across a distance of a 1 km. This contrasts with findings in macroecology, where variation is usually observed over much smaller spatial scales due to factors such as resource availability and habitat change.

The results further suggested that the presence of *S. muticum* may directly influence the mycobiome of native *F. serratus*. This is an important consideration in a changing ocean environment, where increasing numbers of non-native species are being recorded. These findings have recently been accepted for publication in the journal *Microbial Ecology* as

part of the topical collection Aquatic Microbial Ecosystems and Algal Blooms.

None of this would have been possible without the guidance of Dr **Martyn Kurr**, whose stoic consistency endured amid my existential crises, and the collaboration, support and expertise of the School of Environmental and Natural Sciences, including Prof **Rob "Robiwangriff" Griffiths**, Prof **Peter Golyshin**, and **Tatyana Chernikova**. I am now working towards a PhD that will allow me to continue exploring and revealing the wonderful world of marine fungi. One of the best decisions of my life going to that open day. Forever grateful.

Paper: Elizabeth A.M. Owen, Robert I. Griffiths, Peter N. Golyshin, Tatyana N. Chernikova & Martyn Kurr (2026). Patterns in Marine Fungal Diversity and Community Structure on Native Versus Invasive Macroalgae at a Local Geographic Scale. *Microbial Ecology*, <https://doi.org/10.1007/s00248-026-02781-8>

CONGRATULATIONS

Anya Taylor (BSc Marine Biology and Oceanography, 2020; MSc Physical Oceanography, 2021) on gaining her PhD on "Exploring Archean Climate Through Three Case Studies" supervised by Prof **Mattias Green**.

Kate Mortimer-Jones on gaining her PhD on "Magelonidae Cunningham & Ramage, 1888 (Annelida) – Current Status of Knowledge on Taxonomy, Morphology and Behaviour, with discussions on the re-establishment of Maea Johnston, 1865" supervised by Dr **Craig Robertson**.

Abi Smyth (BSc Marine Biology and Oceanography, 2023) on gaining her MScRes on "Investigating Microplastics and their transport in the Atlantic Surface Ocean" supervised by Profs **Yueng-Djern Lenn** and **Mattias Green**.

Dominic Ferris on gaining his MScRes on "Trails as Sentinels; Citizen science, single-use pollution, and the case for a Blue Planet II effect in recreational trail ecosystems" supervised by Dr **Martyn Kurr** and Prof **Christian Dunn**.

Tobias Turner (BSc Physical Geography and Oceanography, 2022) on gaining his MScRes on "To what extent do Milankovitch cycles dominate over more regional forcings from the context of palaeo Lake Tana and east Africa over the Holocene and late Pleistocene" supervised by Dr **Dei Huws**.

Matthew Palmer (PhD Physical Oceanography, 2007) on his promotion to Professor of Marine Autonomy and Environmental Intelligence at Plymouth University.

Jack Walker (MSci Physical Oceanography, 2017) on his new role as a senior consultant at Xodus, a global energy consultancy.

Where are they now?



1970s

Simon Cragg (BSc Zoology and Marine Zoology, PhD Marine Biology) is now an Emeritus Professor at Portsmouth University.



1980s

Bob Marsh (MSc, Physical Oceanography) is now a Professor at Southampton University and **Jonathan Sharples** (MSc and PhD in Physical Oceanography) is



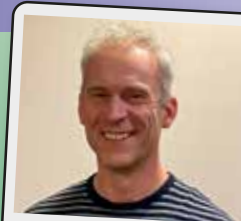
1980s

Bill Austin (PhD Geological Oceanography) is now a Professor at St Andrews University.



1980s

Stuart Cunningham (MSc Physical Oceanography) and **Alan Fox** (MSc and PhD Physical Oceanography) have both recently retired from the Scottish Association of Marine Sciences, Oban.



1990s

Andy Dale (PhD Physical Oceanography) is now at the Scottish Association for Marine Sciences, Oban.



1990s

Kate Smith (BSc Marine Biology and Oceanography; PhD Marine Biology) is now in Marine Energy Business Development with Crown Estate.



1990s

Claire Mahaffey (BSc Marine Biology and Oceanography) is now a Professor at Liverpool University.



1990s

Paul Lethaby (MSc Physical Oceanography) is now at the Bermuda Institute of Ocean Sciences.



2000s

Sophie Clayton (BSc Ocean Sciences) gained a PhD from MIT is now a Principal Scientist at the National Oceanography Centre



2000s

Emmer Litt (BSc, Ocean Sciences; MSc Physical Oceanography; PhD Physical Oceanography) now leads the Marine Licensing team at Natural Resource Wales.



2000s

Martin Lilley (BSc Applied Marine Biology) is now with the Department for Environment, Food and Rural Affairs and **Bee Berx** (BSc Ocean Science; MSc and PhD Physical Oceanography) now with the Marine Directorate, Scottish Government.



2000s

Charlotte Williams (MSc Physical Oceanography) is now a Senior Scientist at the National Oceanography Centre.



2000s

David McCann (MSc & PhD in Physical Oceanography) is now a Senior Scientist at National Oceanography Centre.



2000s

Paul Butler (BSc, Ocean Science; PhD Geological Oceanography) is now a researcher at Exeter University.



2000s

Tom Stringell (MSc Marine Environmental Protection) is Lead Specialist Advisor Marine Species with Natural Resource Wales.



2010s Onward

Chelsey Baker (BSc Ocean Sciences) is now at the National Oceanography Centre.



2010s Onward

Ben Barton (PhD Physical Oceanography) is now at the National Oceanography Centre.



2010s Onward

Julia Rulent (MSci and PhD in Physical Oceanography) is now at the National Oceanography Centre.



2010s Onward

Claire Medley (MSc Physical Oceanography) is now at the Bermuda Institute of Ocean Sciences.



2010s Onward

Lauren Aylward (MSci Marine Biology) completed a PhD at Liverpool University and is now a researcher at Stockholm University with 2019 classmates **Sam Harthorn-Evans** (BSc Marine Biology and Oceanography, MSc Physical Oceanography), who completed a PhD from Newcastle University and is now a researcher at Northumbria University, and **Ben Blackledge** (MSci Physical Oceanography) completed a PhD at Bristol University, and now works at the National Oceanography Centre.



2010s Onward

Zoe Roseby (MSci Geological Oceanography) is now a researcher at Exeter University.



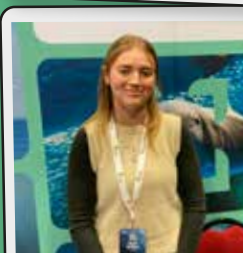
2010s Onward

Andy van der Schatte Olivier (MSc Marine Environmental Protection and PhD Marine Biology) is now Marine Programme Manager at Yorkshire Wildlife Trust.



2010s Onward

Bethan Wynne-Cattanach (MSc Physical Oceanography) completed a PhD at the SCRIPPS Oceanographic Institution and is now a Research Fellow at Cambridge University.



2010s Onward

Soph Wilday (MSci Marine Biology and Oceanography) is now a data scientist with Ecodetect.



2010s Onward

Dan Williams (BSc Ocean and Geophysics; MSc Marine Renewable Energy) and **Ben Smith** (MSc Physical Oceanography) both senior consultants with Intertek MetOc.



2010s Onward

Edward Doherty (MSci Marine Biology) completed a PhD at the University of Liverpool and now works as Science Coordinator at the National Oceanography Centre. This involves coordinating the delivery and impact of £2-4M multi-partner research projects.



2010s Onward

Jack Thompson (BSc Marine Biology and Zoology) is a Marine Licensing Officer with Natural Resource Wales, **Emily Groves** (MScRes Marine Biology) is a Specialist Advisor - Marine Industry and Energy with Natural Resource Wales with **Suzie Jackson** (BSc, Marine Biology; MSc Physical Oceanography; PhD Geological Oceanography) is now a specialist advisor on Marine Industries and Energy at Natural Resource Wales.



2010s Onward

Chloe Newby-Morris (BSc Marine Vertebrate Zoology; MSc Marine Biology) is a senior permit manager with Pelagian, a leading provider of subsea engineering.



2010s Onward

Emma Stein (Marine Biology) is back in the United States working in a variety of educational settings, including at the local community college.



2010s Onward

Hannah Lidgett (MSci Physical Oceanography, 2025) a graduate consultant and **Paul Taylor** (MSc Physical Oceanography, 1996) modelling lead with Intertek Energy and Water.



2010s Onward

Lydia Tabrizi (BSc Marine Biology; MSc Marine Environmental Protection) now with the National Grid.

In Memory

Professor Emeritus Ernest Naylor OBE DSc

It is with great sadness that the family announces the death of Professor Emeritus Ernest Naylor in December 2025 at the age of 94.

Ernest was Dean of Science and Lloyd Roberts Professor of Marine Zoology (formerly Lloyd Roberts Professor of Zoology) 1982-1996, and Head of School of Ocean Sciences (1992-1996) at the University College of North Wales, Bangor.

He was born in May 1931 in Derbyshire. He graduated with a 1st class honours degree in Zoology from Sheffield University in 1951 and attained his PhD from Liverpool University in 1954. During a 2-year RAF National Service commission he taught basic sciences to airframe and armament mechanics and fitters, before being appointed as an Assistant Lecturer at the University College of Wales, Swansea in 1956.

His early scientific research work focused on taxonomy and ecology of British marine isopods.

In 1971 Ernest was appointed as Professor of Marine Biology at The University of Liverpool and Director of the Marine Biological station in Port Erin, on the Isle of Man. He established the first Marine Biology Honours degree course, was involved in the expansion of the building and facilities, and the department flourished with the arrival of new students, research funding and enthusiastic colleagues.

He pioneered research studies on the rhythmic phenomenon in several intertidal marine organisms, especially crustaceans. He attained a national and international reputation in the understanding of their circadian and circatidal rhythms, and the effect of the various environmental factors involved in resynchronisation of the endogenous rhythms.

Ernest proposed a new hypothesis that endogenous tidal rhythm was driven by an

additional integral biological clock, in contrast to an alternative hypothesis, that tidal rhythms were driven by 2 circadian rhythms in antiphase.

Despite the advances of research of rhythmic behaviour in certain crustacea and environmental resynchronisation, along with the identification of a neural depressing hormone (NDH) in the eyestalk of *Carcinus maenas*, the actual underlying physiological mechanism remained elusive, until 2013.

Ernest was appointed as Lloyd Roberts Professor of Zoology at the University College of North Wales, Bangor in 1982.

He participated in the establishment of a new School of Ocean Sciences at the Marine Laboratory, Menai Bridge, Anglesey, and was Head of School of Ocean Sciences from 1992 until his retirement in 1996. He has published over 160 scientific papers and books.

He held numerous positions on prestigious committees and advisory boards and had editorial roles on several scientific journals.

In 1998 was awarded an OBE for his contributions to Marine Sciences.

In 2013, a research group of molecular biologists, including several of Ernest's highly respected former colleagues, using molecular techniques, were able to demonstrate separate and distinct molecular structures of the circadian and circatidal mechanisms, of the isopod *Eurydice pulchra*.

Ernest had an international and highly respected reputation, having travelled extensively to marine laboratories to lecture, examine and also to continue his research.



He was an academic leader and supportive mentor to many undergraduate students and post doctorates, many of whom now hold prestigious academic posts in universities and research units around the world. He developed professional and personal

relationships with many colleagues many of whom became lifelong friends.

He leaves his legacy in marine laboratories and shores around the world.

Dr S. Elizabeth Naylor

Professor Dave Jones

Professor David (Dave) Jones was a member of academic staff from 1968-2001, who will be fondly remembered by many students and colleagues from across a long career. He was a marine biologist, whose early work as a sand beach ecologist and crustacean taxonomist led to international field work on tropical and sub-tropical



coastal ecology in the Middle East and Africa. Closer to home, his pioneering research on crustacean larval nutrition led to development of hatchery feeds for penaeid shrimp that contributed to the establishment of what was then an emerging new aquaculture industry and are still global market-leading products to this day. He continued his ecological work for another 20 years after leaving SOS; in the Summer 2025 edition of the Bridge, we reported on his post-retirement career as EU advisor for Kuwait and Saudi Arabia for the oil damage caused by the Iraq war and as environmental manager for Al-Ahmad Sea City, a major coastal development project on the southern coast of Kuwait. David passed away on 2nd March 2026, at home with his family in Bangor.

Captain Gareth Ellis



Gareth showing an MIT Oceanographer around the Prince Madog

Gareth began his career on the Prince Madog as First Mate and later served as Captain from 2016 until 2023. During his time with

us, he was instrumental in cruise planning and contributed greatly to the success of our scientific research cruises. His

professionalism and dedication were highly valued by all who worked with him, and his impact on our operations and the wider research community was significant.

Gareth particularly enjoyed the undergraduate student cruises as an opportunity to show off not only the marine environment but also the unique natural environment of the Menai Straits and the

Great Orm. He also took a very keen interest in the work we undertook associated with surveying Irish Sea shipwrecks and would often spend quite a bit of his own time researching aspects of the history of the vessels to be surveyed, whilst at sea, when it came to planning an order of survey work for each day, Gareth would often know more about the vessels and how they came to be lost than the scientific survey team!

Nathan Formosa (BSc Ocean Sciences, 2012)

We are sad to report Nathan passed away in March 2026. His wife Naledi remembers:

Originally from Malta with English heritage, Nathan developed a lifelong affinity with the ocean from an early age. Swimming and water polo were among his greatest passions, and he felt most at home in and around the water. This connection shaped both his personal and academic path, ultimately leading him to Bangor University, where he studied Ocean Sciences and became part of a close-knit community, forming friendships that remained important to him throughout his life. During his time there, he embraced both the academic and social aspects of university life and took part in demanding challenges such as the Cambrian Patrol, of which he was particularly proud.

Nathan had a deep love of sport and teamwork. In addition to swimming and water polo, he enjoyed football and other team sports, valuing the camaraderie and shared purpose they brought. He was also passionate about the outdoors, particularly cross-country cycling, undertaking long-distance road journeys between Wales and England to visit friends, adventures that reflected both his determination and his love of connection.

Nathan lived a life marked by curiosity and openness to new experiences. He travelled widely and worked across several countries, including roles in teaching and

in the renewable energy sector. He was often drawn to opportunities that combined people, purpose, and exploration. In the UK, he worked in the environmental and ocean-related sector, where he was valued for his enthusiasm, communication skills, and natural ability to build relationships.

Those who knew Nathan will remember his energy, warmth, and easy way with people,



he had a gift for turning strangers into friends and brought humour and enthusiasm to many situations.

Nathan also faced personal challenges throughout his life, which he navigated with courage, even when the path was difficult.

He is remembered with compassion for both his strengths and his struggles.

He leaves behind his young son, his wife, family and friends across the world, who will remember him with great affection and carry forward memories of his warmth, humour, and adventurous spirit

Dr Louisa Norman

It is with great sadness we report the passing of Louisa Norman (BSc Marine Biology and Oceanography, 2005; MSc Marine Environmental Protection, 2007) after a long illness. Following graduation Louisa took up a research position within the School of Ocean Sciences. In 2010 she moved to Australia to undertake a PhD at the University of Technology Sydney. On returning to the UK she worked as research technician at Cambridge University and then more recently at Liverpool University.

As a biogeochemist Louisa played key part in many recent research cruises and projects, including many trips to take samples in the

polar oceans. She was recently involved in the major two ship observational campaign to unravel the environmental impacts of floating offshore wind farms which involved the Prince Madog last summer (see Winter 2025/26 edition of the Bridge). As with other projects, her meticulous planning and her patient training of fellow scientists ensured successful data collection, despite her not being able to participate in the cruise herself.

Louisa has been a popular and important member of the UK Marine Science community. She will be missed by all those who have worked and sailed with her over the years, we will remember her for her generosity and warmth.



Research and impact highlights

Why Europe may face up to eight months of summer

New research has revealed why Europe could gain 42 extra summer days by 2100 using climate data from the last thousand years. It's well understood that summers over the last decades have been getting hotter and longer.

However, the new study published in *Nature Communications* shows that the trend observed today echoes similar conditions across Europe 6,000 years ago when natural Arctic warming stretched the warm season to nearly 200 days a year — a duration comparable to the most extreme modern warm seasons.

Author Dr **Laura Boyall** from the School of Ocean Sciences, turned to a surprising archive of climate history - ancient layers of mud buried at the bottom of European lakes. These seasonally layered sediments, or “natural climate calendars,” record how summers and winters have shifted over the past 10,000 years.

At the heart of the research is the difference in temperature between the Arctic and the equator. This difference helps drive the powerful winds from the Atlantic Ocean into Europe, which steer weather systems across the continent.

As the Arctic warms up to four times faster than the global average, that temperature difference weakens, causing the air currents to slow and meander. The result is more persistent summer weather patterns, longer lingering heatwaves and the season itself stretching out.

Projections to the end of the century show that if greenhouse gas emissions continue at the current high levels, Europe could see the extra summer days, simply from the natural response to climate change.

Laura added, “When the temperature contrast between the Arctic and mid-



latitudes weakens, Europe's summer effectively expands. Our findings show this isn't just a modern phenomenon; it's a recurring feature of Earth's climate system. But what's different now is the speed, cause and intensity of change.”

The study revealed that the rate of change equals six extra days of summer for each degree that the temperature gradient between the equator and the North Pole decreases. According to the current trend of Arctic warming, this would add up to eight months of summer weather by the end of the century.

Paper: Celia Martin-Puertas, **Laura Boyall**, Armand Hernandez, Antti E. K. Ojala, Ashley Abrook, Emilia Kosonen, Paul Lincoln, Valentin Portmann & Didier Swingedouw (2025). Consistent response of European summers to the latitudinal temperature gradient over the Holocene. *Nature Communications* 16, 9969.

Major studies highlights impacts on the seabed of offshore wind development in the context of the climate crisis

The first study shows that turbulence generated in the tidal wake behind wind turbine foundations drives seabed modification and that the disturbance is more substantial than previously recognised. The study combined laboratory experiments, computer models, and real-world data from an operating windfarm, to show that the turbulence caused by the monopiles foundations can disturb seabed sediments over an area between 3% and 8% of the seabed within a typical windfarm. This study was led by Dr. **Chris Unsworth**, who joined other Bangor alumni and co-authors **Connor McCarron** (MSc Applied Marine Geoscience, 2014; PhD Ocean Sciences, 2020) and **Tom Benson** at HR Wallingford in April this year after several years as a researcher at Bangor University's School of Ocean Sciences.

A second study led by Bangor alumni Dr **Julia Rulent** (MSci Physical Oceanography with International Experience, 2017; PhD Oceanography, 2022), now a Coastal Ocean Modelling Scientist at the National Oceanography Centre, examined how climate change alone is altering seabed sediment movement. The novel model

simulations show that rising sea levels will generally stabilise seabed sediments by reducing the effects of waves and currents. However, it also found that stronger storms are expected to cause more frequent short-term disturbances, with pebbles moving to areas where they would not move today.

Both studies are part of the £2.5 million NERC funded and Bangor University led project ECOWind-ACCELERATE (short for “Ecological Implications of Accelerated Seabed Mobility around Windfarms”) project. Commenting, project lead Professor **Katrien Van Landeghem** said: “These high-quality, rigorously peer-reviewed studies show how collaborative research is advancing our understanding of the effects of climate change and offshore wind development on seabed environments. The findings support future-proof environmental assessments of rapidly changing seas, and risk-informed planning for e.g. subsea cables or habitat restoration. As seabed mobility shapes marine habitats and food webs, responsible offshore wind development must be accompanied by strong environmental stewardship.”



The ECO-WIND Team



Paper 1: Christopher A. Unsworth, Connor J. McCarron, Richard J. S. Whitehouse, Thomas D. G. Benson, Ignacio Barranco, Michael A. Clare, **James J. Waggitt**, Lisa Skein, Veerle A. I. Huvenne, **Martin J. Austin & Katrien J. J. Van Landeghem** (2026). Turbulence drives seabed modification by offshore windfarms. *Nature Communications*, <https://doi.org/10.1038/s41467-026-73089-x>.

Paper 2: Julia Rulent, Lucy Bricheno, Connor McCarron, **Christopher A. Unsworth, Martin J. Austin**, Richard J. S. Whitehouse, Nicholas G. Heavens, David P. Gold, Anthony Wise, Veerle A. I. Huvenne & **Katrien J. J. Van Landeghem** (2026). Climate change affects future sea-bed mobility via storms and sea level rise. *Communications Earth and Environment* 7, 496, <https://doi.org/10.1038/s43247-026-03500-4>.

More information on the ECOWind-ACCELERATE project: <https://ecowind.uk/projects/ecowind-accelerate/>

New limits on global trade of sharks won't be enough to save them from overfishing



More than one-third of sharks and rays are now threatened with extinction, making them among the most imperilled vertebrates on Earth. Why? Overfishing, both as targeted catches for their valuable fins, meat, gills and liver oil, and as bycatch in nets and lines set for other fish.

In late 2025, governments took sweeping action for sharks and rays. At a global conference on wildlife trade in Uzbekistan more than 70 shark and ray species received new or stronger international trade limits.

Whale shark, oceanic whitetip shark, wedgefish, devil rays and gulper sharks were among those subject to stricter regulations. This is a major political milestone for shark conservation.

But a new paper by Bangor conservation scientist Dr **Hollie Booth** exposes an uncomfortable truth: trade regulation alone won't save sharks.

Paper: H Booth (2026). Making CITES count for sharks and rays. *Nature Ecology & Evolution*, 10, 617–619.

Nitrate in the Arctic Ocean and uptake of atmospheric CO₂



The Arctic Ocean is a critical frontier in the global climate system. In the Arctic Ocean interacting physical and biological processes not only support regional ecosystems but

also mediate the uptake of atmospheric CO₂. The nutrient nitrate is critical to this carbon sequestration as it limits oceanic new primary production in these polar regions.

Accordingly understanding the Arctic nitrate dynamics is key to understanding the role of the Arctic Ocean as a global carbon sink.

A major new international study involving Professor **Yueng-Djern Lenn** has taken a multidisciplinary approach in integrating physical oceanographic measurements with assessments of biological uptake, to quantify nitrate fluxes across multiple spatial scales. By linking the uptake to primary production rates, the new study provides a benchmark framework to evaluate ecosystem responses to future climate change.

Paper: Anya M. Waite, Alice Lane, Eddy Carmack, Seth L. Danielson, Ingrid Ellingsen, Ilker Fer, **Yueng-Djern Lenn**, Laurent Oziel, Benjamin Rabe, Achim Randelhoff, Eric J. Raes, Andreas Rogge, Jean-Éric Tremblay, Sinhué Torres-Valdés, Sarah-Sophie Weil & Wilken-Jon von Appen (2026). A quantitative comparison of the physical supply and biological uptake of new nitrogen in the Arctic Ocean. *Nature Reviews Earth and Environment*, <https://doi.org/10.1038/s43017-026-00769-z>

First global assessment of river–floodplain connectivity



An award-winning researcher from the School of Ocean Sciences has played a key role in a landmark international study. The study, involving Dr **Iestyn Woolway** and led by Professor Lian Feng from Wuhan University, and analysed nearly four decades of data from 1984 to 2019, on essential processes influencing flooding, ecosystems, and water quality worldwide.

The research reveals that surface water connectivity between rivers and their floodplains has increased slightly on a global scale over the past 40 years, with an overall rise of around 3%.

However, this global trend masks significant regional differences.

One of the key findings is that around 17%



of rivers show consistent increases in connectivity, significantly more than the 11% experiencing continuous declines. The most notable increases were observed in eastern Asia and high-latitude regions, while widespread decreases were identified in arid and semi-arid regions, including parts of central North America, South America, and southern Asia.

Climate change is the main reason these changes are happening. More rainfall helps rivers spread out and connect with nearby land, while more evaporation dries things out and reduces that connection. Human activities—like building dams, farming, and managing land—also have an effect, but usually on a smaller, local scale. These actions can either help or harm how well rivers stay connected to the surrounding land, depending on how they are managed.

The study also finds a clear link between how connected rivers are to surrounding land and how much sediment they carry. When rivers are more connected to their floodplains, they move and spread more sediment. This matters because it affects the shape of rivers, how nutrients are distributed, and how

carbon moves through the environment.

These findings are significant because surface water connectivity is fundamental to how rivers function. It influences flood risk, ecosystem health, water quality, and sediment dynamics. By providing the first global observational benchmark, the research offers critical insight into how river systems are responding to climate change and increasing human pressures.

The findings will inform future river management, conservation strategies, and climate adaptation planning worldwide.

Satellite data show that connections between rivers and their floodplains have increased globally over the past four decades, largely driven by climate change, with significant consequences for sediment transport, ecosystems, and flood risk.

Dr **Iestyn Woolway** said: “*This research provides the first clear global picture of how rivers and their floodplains are changing over time. The fact that climate change is already driving measurable shifts in connectivity underscores the urgency of developing more adaptive and sustainable approaches to river management.*”



Paper: Qiuqi Luo, Lian Feng, Edward Park, Des E Walling, Lei Huang, Mengqiu Wang, **R Iestyn Woolway**, Hongwei Fang, Jianya Gong (2026). Global net increase in surface water connectivity in river–floodplain systems. *Nature Geoscience*, 19, 556–564.

A further new global study led by **Iestyn** and published in *Nature Geoscience* reveals that extreme heat events are penetrating lake beds worldwide and threatening freshwater ecosystems and accelerating greenhouse gas emissions.

The new study as uncovered that the mud and sediment at the bottom of lakes is experiencing prolonged bouts of extreme heat, and that these ‘sediment heatwaves’ are set to become far more frequent and severe as the planet warms. The study was carried out in collaboration in collaboration with researchers from Pacific Northwest National Laboratory and the University of Helsinki.

Paper: **R. Iestyn Woolway**, Haoran Shi, Zeli Tan & Joachim Jansen (2026). Lake sediment heatwaves under global warming. *Nature Geoscience*, <https://doi.org/10.1038/s41561-026-01986-3>.



Ice Road Truckers

Hidden damage caused to coral reefs by scuba divers

Research has revealed the extent of the damage being caused to coral reefs by well-intentioned scuba diving tourists.



A new study, involving Dr **Ronan Roche**, analysed the behaviour of more than 700 scuba divers across tourism hotspots in the Philippines and Indonesia, including Bali. Drawing on data from more than 300 hours of underwater observation, the researchers, led

by Dr Bing Lin from the University of Sydney, recorded 4981 reef contact events among 411 divers.

Around 41% of these contacts caused observable damage to coral, from direct breakage to the stirring of sediment that can smother reef life. The study built on Ronan’s 2016 paper, that focused on assessing the effectiveness of Green Fins, the largest global program to reduce scuba diving impacts on coral reefs.

Ronan who helped develop the methodology for the fieldwork in Indonesia and the Philippines, and worked on the interpretation of the dataset and the paper said, “*This dataset allows us to understand the drivers of reef damage caused by scuba diving tourists to reefs with unprecedented levels of confidence. It shows that damaging contacts by divers with reefs were frequent, but mostly unintentional, and finds that the Green*

Fins program can be effective in reducing contacts made.

“*Global climate change is the dominant pressure on coral reefs, but reducing localised pressures on coral reefs is increasingly important. Reef managers can’t reduce sea temperatures, but they can control local pressures such as scuba diving, and this helps corals to recover and reproduce following damaging coral bleaching events. Ultimately this research aims to help find sustainable solutions to reef tourism that benefit both coral reefs and the communities that depend on them.*”

Paper: Bing Lin, Tom Bearpark, **Ronan C. Roche**, Jacobo McGuire, Raymond Jakub, Derta Prabuning, Elke U. Weber, David S. Wilcove (2026). Causes and Correlates of Unsustainable Scuba Diving Tourism on Coral Reefs. *Conservation Letters*, <https://doi.org/10.1111/con4.70055>





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