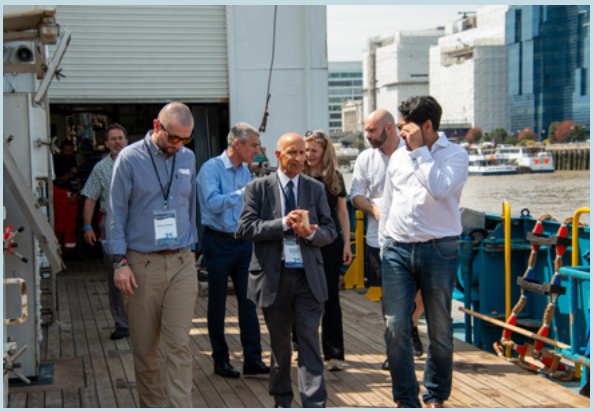


FUTURE OCEAN 25

Integrating science solutions for society and nature

Conference Report

FUTURE OCEAN 25: CONFERENCE REPORT PAGE 3

THANK YOU FOR ATTENDING

Future Ocean 25: Integrating science solutions for society and nature

PROF. GRANT STENTIFORD
CHIEF SCIENTIST, CEFAS

“We know that it is only by **creating an improved marine environment** that the array of vital services provided by the sea, whether food, the base for a clean energy infrastructure, or the functioning habitats needed to support our own health and wellbeing, are possible. In early 2025, Cefas launched our new **Cefas Science, Evidence and Advice Strategy (CSEAS),** which calls upon our work to focus on dealing with the **triple threat posed by climate change, biodiversity loss and pollution**, while optimising the role that the ocean plays in the **health and prosperity of human society.**
The inherent complexities of balancing sustainable growth, nature protection and recovery and societal demands, will require **better, more open partnerships**, where **costs and benefits of action** are clearly articulated and the i**mpacts of interventions** (positive and negative) are framed over longer time periods – in context, with wider drivers of change acting upon the marine environment.
Future Ocean 25 was a chance to have conversations with our partners and collaborators about this nexus – and to think how we may work together more effectively to **ensure sustainable growth in our blue economy** long into the future. There is no doubt that this is a challenging (and sometimes contested) endeavour. The **pressures on the marine environment are increasing**, and the **usable spaces are being squeezed** – at a time when the **vast potential of the ocean economy** is being recognised.
Within our CSEAS, we acknowledge how solutions to these complex challenges will **require systems-level thinking, bigger data, and innovations**, not only in the technologies used to monitor marine spaces, but also in how we **collect, use, and re-use data** in a more efficient and effective way to better inform decision making.

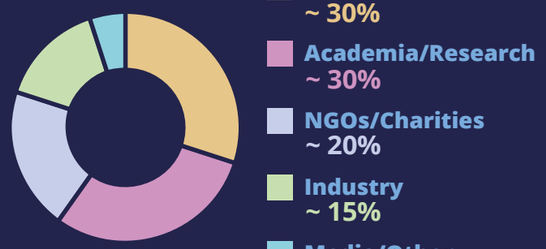
Future Ocean 25 was an excellent start to this conversation, **bringing together government, academic, NGO and industry stakeholders** to discuss these challenges and opportunities together. **Convening around broad topics**, such as food security created a rich conversation where often, the **desired outcome was shared** and agreed while the potential **journey was more debated.** In its role as **impartial advisor to Defra and wider HMG**, Cefas provides a credible organisation for convening such conversations - inputting our own expertise where appropriate but importantly, **encouraging and incorporating contributions from the wider expert community** to help shape advice which supports better decision making.
As I reflect on the event, I hope that this intention was felt by those participating in Future Ocean 25, and that the **ambition to engage further in these shared challenges** is more widely felt throughout our community. We have a **fantastic tradition of influential and impactful marine sciences in the UK** and are therefore in a strong position to ensure that the **very best science, evidence and advice is delivered** and used to support decision-making relating to **protection and sustainable use of our seas.** Via **a new era of collaboration**, not only can this **benefit sustainable growth of the blue economy** at home but also **influence improved management of the global ocean.**”

Future Ocean Overview

Our attendees

177 Day 1 attendees
62% External

145 Day 2 attendees
55% External



Conveners, Presenters & Sessions

55 Conveners/Chairs/Contributors
39 External

9 Keynote Speakers

- Prof. Rachel Mills
- Sally Randall
- Prof. Dame Theresa Marteau
- Prof. Susan Gourvenec
- Dr. Tiara Moore
- Dr. Emma McKinley
- Dr. Jorge Martin-Almagro
- Prof. Davey Jones
- Marcus Coleman

4 main themed sessions:

- Nature Recovery
- Clean Energy (co-convened with IMarEST)
- Water Health
- Aquatic Food Security (co-convened with Seafish)

1 ♥
EDI workshop
co-hosted with NOC

Conference activities

8 RV Tours

- 4 student tours (2 university & 2 school)
- 2 in-brief RV tours for delegates
- 1 in-depth tour for delegates
- 1 tour for additional stakeholders

Networking Events:

- 1 Evening networking reception
- 6 Engagement stands
- 7 Breakout sessions

Social Media Statistics

36 Social Media Posts | **67 Shares**

32,497 Impressions

Average Impressions per Post:

252 (X) 909 (in)

5,991 Engagements
(Engagements: Clicks, Likes, Comments, Shares)

4,399 Clicks

Media

- 2 stories in Fishing News
- 1 story in Hydro International
- 1 story in Ocean Business


FISHING NEWS
THE VOICE OF THE INDUSTRY SINCE 1913
NON-QUOTA STOCKS THREAT
Managing with science – not emotion or accusation
'Digon yw digon!'

Feedback from participants

What participants liked most:

- High quality and diversity of speakers and panels
- Range of organisations and cross-sectoral attendance
- Networking opportunities and interactive sessions
- Honest self-reflection and open atmosphere

Suggestions for improvement:

- More time for audience questions and discussions
- Greater representation from NGOs, industry, and social sciences
- More opportunities for early career researchers (ECRs)
- More international and policy-focused content
- Longer or more frequent breaks for networking and engagement stands

Notable Quotes:

- "Fantastic meeting with the right mix of presentations and interactions."
- "Great level of topic diversity with just the right amount of variety."
- "Would be good to get projects going to move forward rather than saying "we should""
- "Diversity and honest self-reflection of the good and bad of the sector."

This event was hosted by Cefas

OPENING SESSION

CONTRIBUTORS:
Speakers: Prof. Rachel Mills (Cefas), Sally Randall (Defra)

Convener: Dr. Justine Bejta (Defra)

Panellists: Prof. Grant Stentiford (Cefas), Robert Bradburn (EA), Dave Stone (JNCC), Dr. Peter Brotherton (Natural England), Dr. Aisling Lannin (MMO).

The opening session set the tone for Future Ocean 25 by emphasising the urgency of marine science in addressing climate change, biodiversity loss, and pollution and the imperative of systems-thinking approaches to solve the associated complex challenges, in this case through convening Defra Group Marine and Fisheries science leadership. Rachel Mills highlighted Cefas' role in bridging science and policy, while Sally Randall and Justine Bejta underscored the importance of evidence-based decision-making and cross-sector collaboration. The panel explored the interconnectedness of land and sea systems, the need for systems thinking, and the role of robust data in managing marine environments. Speakers shared personal reflections on their relationships with the sea, reinforcing the emotional and cultural significance of ocean stewardship. The session called for inclusive, multidisciplinary approaches and encouraged participants to remain curious, collaborative, and action-oriented throughout the conference.

KEY TAKEAWAYS

The panel stressed that effective marine management requires integrating ecological, social, and technological knowledge. Rob Bradburn and Peter Brotherton discussed the impacts of land-based systems on marine environments and the need for ecosystem-based management. Aisling Lannin emphasised the complexity of stakeholder needs and the importance of inclusive governance. Dave Stone and Grant Stentiford highlighted the potential of new technologies, AI and live data to forecast and support decision-making. Discussions also addressed blind spots in current approaches, the importance of social science and the need to build trust and genuine collaboration across disciplines. The panel encouraged participants to think beyond traditional silos, embrace diverse perspectives, and engage with communities to co-create solutions for a healthier ocean.

- Foster cross-disciplinary collaboration by integrating ecological, social, and technological expertise into marine decision-making processes.
- Invest in real-time data systems and AI tools to enhance forecasting, monitoring, and adaptive management of marine environments.
- Strengthen stakeholder engagement and inclusive governance by valuing diverse perspectives, building trust, and co-developing solutions with communities.

NATURE RECOVERY

SESSION CONVENERS:

Dr. David Righton,
Dr. Murray Thompson (Cefas)

To recover nature at scale and ensure a thriving future, we need effective interventions that consider how human activities affect the environment, set against the natural dynamics of ecosystems and the long-term trends driven by climate change. In marine ecosystems, a major challenge is the lack of agreement among stakeholders on how to interpret the evidence and actions that are needed to reduce human impacts. In the keynote, Professor Dame Theresa Marteau urged the audience to think differently about how we use evidence and avoid evidence neglect. This was followed by talks on marine Protected Areas (MPAs) and how these relate to users of the sea (Professor Michel Kaiser), the challenges and trends in relation to changes in the UK's marine climate (Professor Caroline Rowland), the need for seagrass and coastal restoration (Dr Richard Unsworth), and threats to deep-sea nature and how to mitigate them (Professor Kerry Howell). This was followed by an interactive panel discussion with Professor Marteau, Professor Bill Sutherland, Dr Anna Sturrock, Stuart Green and Professor John Pinnegar, who gave their views on the state of the UK's seas and the measures needed to protect them, taking into account the perspectives offered by the audience in an interactive poll. A concluding 'Networked Solutions' session was a round-table discussion of the challenges and opportunities of achieving nature recovery and developing clean offshore energy solutions.

KEY TAKEAWAYS

Participants at the conference assessed the UK's seas as being under significant ecological stress driven by anthropogenic impacts. Throughout discussions in plenary and the networking session, participants were in consensus that achieving marine conservation requires evidence-based policy, long-term monitoring, stakeholder engagement, and adaptive management. Education, ocean literacy, and community involvement were seen as essential to building support amongst the wider population. Thematic actions that were identified included improving data systems, continuing to develop policies that join up conservation and use of the seas, integrating MPAs with fisheries and other industries, restoring habitats, adapting to climate change, and fostering inclusive governance. The overall tone was optimistic, with a strong focus on practical, collaborative solutions grounded in science and long-term thinking.

- Develop a shared understanding of what "nature recovery" means in marine contexts, supported by responsive indicators and clear, science-based goals
- Build towards standardised and open environmental data to support evidence-based decision-making, encourage cross-sector collaboration, and enable adaptive management
- Improve ocean literacy and ecological awareness across stakeholder groups and in wider society to enable more inclusive, transparent, and participatory marine conservation and governance.

CLEAN ENERGY

SESSION CONVENERS AND LEADS:

Conveners: Dr. Michaela Schratzberger (Cefas), Caroline Allison (IMarEST)

Leads: Dr. Andrew Gill, Dr. Andrew Kenny, Manuel Nicolaus (Cefas)

Reconciling society's need for clean energy with sustainable environmental management presents significant challenges. These include mitigating the impacts of energy infrastructure on biodiversity, addressing pollution, and balancing competing land and water uses. Opportunities lie in advancing renewable energy technologies, promoting ecosystem-based management, and fostering interdisciplinary collaboration. Experts from across government, academic and industry sectors came together in this session to address the UK's aspirations and targets for Net Zero through a transition to clean energy options, and its intersection with the sustainable use of the ocean. A thought-provoking keynote presentation by Prof. Susan Gourvenec (Southampton University) was followed by interactive panel discussions on renewable energy transition featuring Prof. Deborah Greaves OBE FREng (University of Plymouth), Jennifer Gomez Molina (Vattenfall) and Prof. Feargal Brennan (University of Strathclyde), and on marine spatial planning including Olivia Thomas (The Crown Estate), Chloe Meacher (Defra) and Dr. Keith Cooper (Cefas). A concluding Networked Solutions session, co-convened with the Nature Recovery session (see above), brought together participants from across stakeholder communities to discuss enablers and barriers to achieving nature recovery while meeting the UK's 2030 clean energy targets.

KEY TAKEAWAYS

Strong consensus emerged on the urgency of decarbonising the energy system to combat anthropogenic global warming, with the keynote speaker stressing that "not doing it is not an option". Offshore wind is a key technology, but the challenge of balancing multiple ocean uses was a recurring theme, as almost the entire Exclusive Economic Zone of the UK is already utilised in supporting the wellbeing of the UK's population, through economic activity, transportation, food and energy production, and ecological services. Panel experts emphasised the need for transparency and collaboration in sustainable construction and engineering, and operation of energy infrastructure, and for policy support and faster project development. A notable audience question on the viability of tidal energy revealed a consensus that it remains promising but challenging. Panel members also stressed that a combination of strategic spatial planning, technological innovation, data-driven approaches and collaborative governance is needed to address spatial squeeze in the ocean. Whilst session participants agreed that this includes integrated planning across sectors and engaging stakeholders early on, opinions diverged regarding the feasibility and effectiveness of co-locating different marine activities.

- Foster cross-departmental collaboration between environmental and energy bodies to ensure that marine recovery and clean energy development are pursued in tandem, not in competition.
- Set meaningful cross-government objectives for marine environments to prevent fragmentation, and to reduce or eliminate conflict between ocean users.
- Standardise methodologies for data collection, analysis, and reporting to enable comparability and informed decision-making, and develop interoperable data systems and platforms for sharing oceanographic, ecological, and regulatory information.

WATER HEALTH

SESSION CONVENERS:

Prof. David Bass, Dr. Craig Baker-Austin, Prof. Michelle Devlin, Dr. Naomi Greenwood (Cefas)

The interactions between human and environmental health in the context of water health are complex and multifaceted. Ensuring clean water for humans and a healthy environment for aquatic animals and plants requires a holistic approach which recognises the interconnectedness of the catchment to marine environments and considers the impact of human activities on ecosystems and the subsequent effects on the health of humans and other organisms. Prof. Davey Jones provided an overview of the significant threats from poor water quality to coastal marine and human health in the opening keynote. This was followed by talks on the impact of poor water quality on habitat restoration (Alison Debney); a water industry perspective on the impact of water quality on human and environmental health driven by different legislation (Ruth Barden) and developing analytical and data-driven approaches to assessing water health (Prof. David Bass). A panel session with Dr. Nicola Rogers, Roger Proudfoot, Prof. Shelagh Malham and Carolyn Cadman considered the most pressing challenges for water health in the UK, the opportunities and barriers to collaborating and how to inspire the younger generation to get involved.

KEY TAKEAWAYS

There are multiple pressures on the water environment in the UK which impact on environmental and human health. The vast majority of these pressures are land-based and proactive monitoring and solutions are required to deliver improvements. A One Health Approach to water health is required which considers environmental and human health together. We need to reframe how we think about water to consider the whole water environment, including the human dimensions and proper consideration of trade-offs.

The water industry recognises the need to improve public trust and confidence in the water sector. Collaboration across multiple sectors (NGOs, government, academia, industry) and stakeholders is essential to improve water health. This will enhance the possibility for attracting investment to deliver the improvements needed within catchments. We are all users of the water environment and part of the problem; it is essential to engage local communities and to include all voices in the conversation, not just scientists, to understand what local communities want from their catchments.

- Identify and develop further collaborations between Cefas, academia, NGOs and water companies, including catchment-based activities.
- Use discussions at the sessions to progress shared understanding of Water Health across the Pollution and Water Quality and One Health Hazards themes under the Cefas Science, Evidence and Advice Strategy.
- Develop a Communities of Practice of diverse stakeholders and interest groups in ‘water health’, to devise and agree new metrics for measurement and management. Co-create strategies for systems-level analyses and activities to concurrently optimise water quality, the health of aquatic organisms, and human health, livelihoods, and wellbeing.

AQUATIC FOOD SECURITY

SESSION CONVENERS:

Dr. Julie Bremner (Cefas), Marcus Coleman (Seafish)

Food is vital for life and we all have a stake in healthy and secure food systems. Aquatic foods have much to offer the UK but are not as well utilised in our food mix as they could be. We also need to better understand how sustainability underpins food security. We took a systems approach to tackling the problem; looking at economic, environmental and societal challenges surrounding seafood, and how science/research could contribute to improved resilience, nutrition and livelihoods in tandem with environmental sustainability. We asked two questions: *What prevents seafood from having a seat at the food security table* and *what are the opportunities for science and research to help ensure seafood fulfils its potential?* Our speakers, Marcus Coleman, Melanie Siggs (Global Seafood Alliance), Prof. Kieran Hyder (Cefas), Prof. Charles Tyler (University of Exeter) and Mike Cohen (National Federation of Fishermen's Organisations), each responded with three main challenges. Delegates ideated and collectively ranked science/research responses to each challenge.

KEY TAKEAWAYS

The audience was reminded that food is essential to life, with humankind estimated to be only nine meals away from anarchy. The speakers discussed their views on how seafood is the 'perfect protein', yet the fishing and aquaculture industries face significant challenges including trade balances, industry recruitment/retention, societal perceptions and balancing environmental protection against equitable livelihoods and space use. The 15 challenges posed by the speakers were:

- Economic – approaching a 'whole-fish' model, stabilising/reducing costs and finding alternative fuels, attracting investment.
- Social - recruitment, isolation, cultural value, health credentials, price, taste/quality.
- Environmental - sustainable resource use, animal welfare, climate change and shocks, protecting nature and ecosystem services, production system costs and risks, optimising production systems for sustainability.

The top ranked responses were: (1) protect natural resources by understanding how ecosystem services support food security, (2) understand ecosystem costs/risks from aquatic production by improving baseline data and (3) more agile and responsive policy and regulation. Full analysis of the breakout sessions and resulting ideas will be reported to delegates.

- Engaging with key partners like Defra, Seafish and the seafood industry, and building on existing initiatives, explore how Cefas science and research can help industry maximise the responsible production and consumption of aquatic food and enhance its contribution to UK food security.
- Assess the possibility of incorporating the responses aligned with Cefas' remit into the implementation of our new Science, Evidence and Advice Strategy.
- Convene workshops to assess how the session outputs can be collaboratively built upon and to develop our theory of change for aquatic food security.

ASPIRATION TO ACTION: ADVANCING REPRESENTATION IN OCEAN SCIENCE

SESSION CONVENERS:

Dr. Chelsey Baker (NOC), Prof. Kieran Hyder (Cefas)

"Aspiration to Action" focused on addressing the underrepresentation of ethnic minorities in the UK ocean and marine science sectors. The workshop aimed to kick-start a cross-organisational initiative to address this issue which is too large for any one organisation to solve alone. We explored what initiatives are already underway focussed on Diversity, Equity and Inclusion (DEI) and how we can build a more inclusive sector through shared learning, mentorship, and engagement. The introduction focused on the lack of diversity in marine science and intersectional barriers to developing a career the field. A breakout session aimed to understand ongoing DEI initiatives alongside barriers and opportunities in marine science. A survey was conducted to seek organisational commitment to engage in a community-wide initiative to increase ethnic diversity in marine science. A useful and engaging discussion was had with 53 participants from across the community highlighting the importance of embedding DEI in all that we do.

KEY TAKEAWAYS

The key takeaways from the session included the recognition of systemic barriers and the need for collective action to address underrepresentation in marine science. Conversations focused on the importance of creating inclusive environments through organisational practices, outreach, and recruitment. Participants discussed the challenges of geographic location, traditional recruitment routes, and societal expectations that hinder diversity. Successful initiatives such as anonymous recruitment processes, inclusive outreach programmes, and mentoring schemes were highlighted. The importance of early exposure to marine science careers and enhancing ocean literacy was emphasised. Retention of diverse staff was identified as a critical area needing more attention. The session highlighted the need for ongoing commitment to diversity, equity, and inclusion efforts, including evolving recruitment processes, supporting diverse talent, and addressing cultural and societal perceptions that limit engagement with marine science careers.

- Collective action is vital with the need for organisations to work together to address systemic barriers and create inclusive environments that support diverse individuals to thrive in their careers.
- Recruitment processes should be continuously improved to reduce bias and accommodate diverse applicants.
- Outreach and education efforts should start early, targeting primary and secondary schools, especially in diverse and urban areas, to inspire future diverse professionals in marine science.

CLOSING PANEL

SESSION CONTRIBUTORS:

Convener: Dr. Siân Limpenny (Cefas)

Panellists: Dr. Aisling Lannin (MMO), Prof. Charles Tyler (University of Exeter), Simon Reeve (Frontier Robotics), Dr. Stephen Dye (Cefas)

The closing panel chaired by Dr Siân Limpenny (Cefas) reflected on the conference's themes and explored how to translate insights into action. Aisling Lannin emphasised the importance of co-creating a shared vision for regenerative marine policy, grounded in citizen engagement and long-term thinking. Charles Tyler called for improved metrics and narratives around food from water, especially in the UK context. Simon Reeve urged the marine science community to unify its voice and make its knowledge more visible and accessible. Stephen Dye highlighted the emotional dimensions of marine science and the need to include marginalised voices. The panel agreed that future efforts must be multidisciplinary, inclusive, and empathetic, with a strong focus on stakeholder engagement and integrated science solutions. The conversation concluded with a call to build a "meta-community" around food and water quality, and to design future events that continue this collaborative momentum.

KEY TAKEAWAYS

The panel underscored the need for systemic change in marine science and governance. Discussions focused on the importance of inclusive policy-making, valuing stakeholder experience and fostering collaboration across disciplines. Charles Tyler and Aisling Lannin stressed the urgency of developing credible, future-focused policies and improving public narratives around seafood and sustainability. Simon Reeve advocated for clearer communication and broader participation, while Stephen Dye reminded attendees that science must be empathetic and responsive to lived experiences. The panel also addressed the challenge of integrating diverse data sources and perspectives, and the importance of kindness and humility in scientific practice. A recurring theme was the need to move from conversation to action, with concrete steps to support regenerative practices, inclusive governance, and evidence-based decision-making.

- Establish cross-sector Communities of Practice focused on the themes of Future Ocean 25 to drive collaborative research, policy, and innovation.
- Develop inclusive and future-oriented marine policies through citizen assemblies, stakeholder engagement, and transparent communication.
- Promote diversity in marine science by valuing lived experience, supporting underrepresented voices, and fostering multidisciplinary collaboration.

FUTURE OCEAN COMMITMENTS

ADVANCE STAKEHOLDER ENGAGEMENT TO ADDRESS KEY ISSUES AND STRENGTHEN THE ROLE OF SCIENCE IN POLICY

01

Input: Identify key themes linked to global marine challenges, including the “triple threat” (climate, biodiversity, pollution) and UK policy drivers.
Output: Develop cross-sector Communities of Practice (expert networks) to foster collaboration and knowledge exchange.
Output: Convene cross-sector dialogues on priority themes to build shared understanding and actionable pathways.
Outcome: Bridge science and policy, particularly within the Defra Group Marine and Fisheries leadership, to inform decision-making and strategic alignment.
Outcome: Looking ahead to Future Ocean 2027, showcase cross-sector representation, tracking progress on commitments, and renewing collaborative momentum.

CONVENE AROUND SYSTEMS-LEVEL THINKING AND DATA INNOVATION

02

Input: Develop a convening theme around systems-level approaches to marine science, integrating ecological, social, and economic dimensions.
Output: Promote data reuse across marine sectors to support long-term decision-making and policy development.
Input: Identify and engage expertise from outside marine science (e.g., data science, behavioural economics) to strengthen innovation.
Outcome: Provide a list of initiatives as examples of integrated data innovation and systems thinking.

EMBED DIVERSITY, EQUITY, AND INCLUSION (DEI) IN MARINE SCIENCE AND PROMOTE OCEAN LITERACY

03

Output: Build a cross-sector coalition to advance ethnic diversity in marine science, with measurable goals and inclusive practices.
Outcome: Support initiatives to improve ocean literacy across society, including schools, civic groups, and local communities, to foster public engagement and stewardship.

THANK YOU FOR JOINING FUTURE OCEAN 25

Get In Touch

https://www.cefas.co.uk/future-ocean-25/

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Centre for Environment, Fisheries & Aquaculture Science