Sustainable Management of UK Marine Resources Workshop Report

The £12.4m Sustainable Management of UK Marine Resources (SMMR) programme will be jointly delivered by the Natural Environment Research Council (NERC) and Economic and Social Research Council (ESRC) on behalf of UKRI, and in partnership with the Department for Environment, Food and Rural Affairs (Defra) and Marine Scotland. This programme is funded through UKRI Strategic Priorities Fund, and will be championed by Prof David Paterson and Dr Mark James, and supported by Dr Emma Defew (all St Andrews University).

The introduction of the SMMR Programme to the academic research community was originally planned as a face-to-face meeting in Cardiff. However, the Covid-19 pandemic and a UK lockdown resulted in moving the workshop to an online format. On the 31st March 2020, ~150 individuals joined an online webinar about the SMMR Programme and engaged in a series of round table discussions.

The morning session consisted of presentations setting the scene for the SMMR Programme, including some of the key drivers and challenges. Information on proposal development, requirements for interdisciplinarity, project structure and governance, budgets and timelines were presented. The session concluded with an opportunity to address questions to the presenters and UKRI representatives. This session was recorded and is available to view online at: www.smmr.org.

In the afternoon, six breakout sessions were conducted around the following topics:
1. [Restoration of coastal and marine habitats and implementing net gain](#) (contributing to balancing carbon levels and/or biodiversity) *(Guided by Prof David Paterson)*
2. [Innovative methods of fisheries/aquaculture management](#) *(Guided by Dr Mark James)*
3. [Interventions](#) (e.g. MPAs; Coastal protection) *(Guided by Prof Dickon Howell)*
4. [Governance & Planning](#) *(Guided by Dr Tavis Potts)*
5. [Understanding marine ecosystems, their components and the ecosystem services provided](#) *(Guided by Prof Mel Austen)*
6. [Understanding the productivity of our seas and the impact of human and other activities](#) *(Guided by John Murray & Janelle Braithwaite)*

Each group was led by a "guide". Guides were chosen due to their strategic policy, regulatory or industry experience in the relevant topic area. The guides were asked to act as Chairs for the topic breakout groups and help stimulate/invite discussion. Numbers were necessarily restricted for the afternoon session to allow for more detailed discussions among smaller groups of stakeholders and researchers. Group sizes ranged between 10-20 individuals, and the delegates had been pre-allocated to groups based upon the preferences they had expressed. There were two breakout sessions of the 6 groups (above) to allow participants to attend two topic groups. Individuals were deliberately distributed across the groups to ensure that the social science element was represented in all discussions.

Groups were asked to consider how to:
- bring together interdisciplinary evidence into systems frameworks (including models) that describe and identify interconnected issues;
- identify knowledge gaps to define strategic research priorities to support policy decisions;
- strengthen interdisciplinary links between the research community, Government policy, evidence and analysis communities to:
- drive interdisciplinary research with a focus on solutions thinking
- build relationships for science with impact,
- support robust, evidence-based policy;
- enable robust, cross-cutting evaluation of the impacts of multiple policy decisions, whilst avoiding unintended consequences of policy-making;
- build on existing work.
- context by stakeholders, including policy makers, industry, and the public.

These afternoon sessions were not recorded, but a summary of the salient points from each topic area have been provided below.

Workshop Notes

Workshop 1: Restoration of coastal and marine habitats and implementing net gain (contributing to balancing carbon levels and/or biodiversity)

Cost vs Benefit

- A recurring main theme discussed during the restoration workshops was cost and benefit analysis, how to determining the net gain of different restoration measures in order to achieve favourable outcomes.
  - How should we measure and quantify costs and benefits, especially when trying to weigh the net gain of a whole ecosystem across many factors?
  - The above issue is compounded when examining spatial distribution across different ecosystems.
    - An example was raised of the Severn River, which is managed across its length by three different environmental agencies all with different data management systems. Therefore, extracting and collating data is hard to compare and analyse across multiple data systems for a single site.
    - The use of existing data sets is to be encouraged under SMMR, but the creation of new data sets would be possible where critical gaps are identified.
    - UKRI, Marine Scotland and DEFRA have a data partnership which might help people get started and provide support for proposals.
  - An ideal scenario is restoration resulting in potential win-win scenarios. For example using dredged sediment to create new sites, e.g. coastal restoration.
  - Another scenario of benefits from restoration would be through direct monetary benefits from the extraction of resources.

Restoration

- An interesting point was noted regarding restoration in general: how do you know the target for retoroatio and what is success?   Over time, there is significant ecosystem so that it is difficult to be sure of the 'natural' condition.
- The nature of restoration can be either active or passive (or combined). For example, removing pressures from an ecosystem to allow organisms to flourish versus actively restoring a habitat.
- The Restoring Meadows, Marshes, and Reefs (ReMeMaRe) partnership initiative from the Environment Agency was introduced to the group. Information will be sent about this to MASTS for distribution. Key topics include:
  - Seagrass carbon and nutrient sequestration
  - Upscaling of restoration techniques
  - Biosecurity, shellfish disease and restoration

It's not all about blue carbon

- Blue carbon was raised as an issue many times during restoration discussions, but participants also want to make it clear that it's not all about blue carbon. Other factors such as oxygen/deoxygenation, kelp, and coral reef habitat provision need to be examined to include the bigger picture beyond blue carbon.

Building interdisciplinary teams

- The groups discussed how best to incorporate the social sciences into project proposals.
  - The social sciences will be integral to SMMR project proposals, particularly in terms of determining what people actually value (and not just in monetary terms), and how to incorporate social acceptance into restoration decisions.
  - To gain social acceptance, different outcomes and the consequences of different management techniques need to be explained. Success will in part be determined by

how information and issues are presented to the public and to government. It will be important to select outcomes that align with net gain.

SMMR Scope
- The groups discussed various aspects related to the scope of the SMMR programme including:
  - The scope of SMMR projects has to be within the UK EEZ. The call will provide a reference to what can be included.
  - The SMMR calls for projects to be scalable. Local studies (e.g. case studies) are acceptable/relevant where principles can apply in a wider UK context.
  - SMMR can include information and theory from terrestrial systems where translate to or influence on marine systems (e.g. nutrient run-off, pollutants, pathogen transport).
  - SMMR can be used to adapt theory derived from terrestrial ecology to the marine context where such translational application would enhance marine management.

Workshop 2: Innovative methods of fisheries/aquaculture management

Finding a common language
- Participants were keen to highlight that aquaculture is a broad term that encompasses inshore and offshore, fed fish farms and non-fed activities such as shellfish and seaweed production.
- The scales and opportunities for aquaculture development vary across the UK.
- Despite the rhetoric of "Blue Growth", aquaculture in the EU has flat lined or in some cases declined for more than a decade. Expansion of salmonid, shellfish and seaweed aquaculture in the UK and Scotland has fallen well short of projected growth and targets. What can we learn from this? Are there some fundamental economic, social and production challenges that we are ignoring?

Stakeholder engagement
- A critical question raised was how do we get stakeholders working together (e.g. NGOs, IFCAs, RIFGs fishers, farmers, government etc)? There is a need to focus on finding out what each groups' priorities are and the issues they have identified, then build a common agenda.
- Understanding the dynamics of each stakeholder could help engagement with policy and relevant guidance.
- It was recognised that in the context of the SMMR Programme and the short time frame available to prepare proposals that it would be challenging for the academic community and the PSREs without established industry and policy stakeholder contacts to properly engage with them. It was suggested that key stakeholders perhaps be encouraged to provide a nominated contact person to facilitate engagement with their respective organisations.

Understanding supply chain sustainability
- The groups discussed the need to build a picture of the carbon footprint of both fisheries and aquaculture, together with the footprint of their supply chain since UK products are distributed worldwide.
- The carbon footprint of marine produced protein will need to be compared to terrestrially produced protein in assisting UK decision makers (including consumers) in achieving net zero carbon emissions.
  - Will moving the production of protein to the marine environment actually save carbon?
  - Would having more information on a products carbon footprint help consumers make more sustainable choices?
  - Should we promote reduced consumption or increased local produce consumption?
  - How could behavioural change research assist with helping decision makers and consumers make more sustainable choices?
- One idea that was put forward questioned whether data could be used to create a new sustainability certification/food label/metric.
- Information on the seafood supply chain and its consumption is well documented and it was pointed out that governments are requiring companies to state their carbon footprint.

- It was suggested that there is a need to improve the public's perception of aquaculture as it a driving factor in people's decision in consumption, along with price. However, much work has already been done in this area and the assumed negative perception of aquaculture is not a primary constrain on consumer choice.

Carrying and assimilative capacity

- Understanding and predicting the impacts of aquaculture remains a challenge even where it has been established for some time. Much has already been learnt with respect to the development and regulation of aquaculture and it is important that cross sectoral and cross institutional knowledge exchange helps inform decision making in areas/regions where aquaculture is less well established and political and economic development ambitions are driving aquaculture developments.
- Predicting the carrying and assimilative capacity of the environment (in the widest sense) could provide a better decision support framework.

Impacts of climate change

- As the need for protein from the marine environment increases, so does the need for higher protein yield. Achieving higher yields would help meet United Nations Sustainable Development Goals but what will the impacts of climate change be on both aquaculture and fisheries? How resilient is the supply chain if unpredictable weather increases? How will the industry adapt with migrating fish stocks? A subsidiary reference to future shellfish restoration efforts and the impact of climate change was also raised.
- The EU CLIMFISH project (www.climfish.eu) was highlighted as recent work that looked at the vulnerability of coastal fisheries to climate change. It was suggested that some of the recommendations of this project could guide future work.
- Work at the University of Exeter is already looking at the impacts of climate change on the wellbeing of small-scale fishers in Cornwall.

Use of technology and its implications

- The potential for transformational and disruptive technologies in seafood production was raised including the possibility of "lab-grown" fish protein and whether this could be a more sustainable approach. Whilst the consensus was that this was not an immediate prospect and perhaps not appropriate within the timescale of the SMMR Programme, the need more generally to consider disruptive technologies and processes was acknowledged.
- The development and use of new (tracking) technologies in the fishing industry is rapidly evolving but its use within the industry can be controversial. The introduction of technologies, the use of data and who has access to data and for what purpose can, and has, caused confusion and conflict in some sectors.
- What are the social, economic, behavioural, cultural and technical challenges to the adoption of new technologies that could improve the sustainable management of fisheries and aquaculture?
- Can we learn from other sectors on how to improve and streamline the adoption and roll out of new technologies?

Use of data

- Do we need to consider new paradigms in the way that data gathered is fully utilised in the context of sustainability? The rationale for data collection is often siloed with respect to statutory and regulatory requirements – rather than wider business, public and environmental benefits – can we/should we seek to change this and if so, how?
- Industry (the finfish aquaculture industry in particular) collects a lot of performance and environmental data that is not publicly available. Some parts of the fishing sector are obliged to provide data to feed into management. Access to these data are often restricted. Could decision support with respect to sustainability and management of the aquaculture and fisheries sectors

be improved by opening up access to these data – particularly where the exploitation of a public resource is concerned?

- Policy, regulators, industry, researchers and the general public need a better understanding of what technology and industry collected data can offer, and what else this information can be used for.
- Assisting policy to implement change is critical and decision support tools that combine environmental (biological and physiochemical models) with social, economic and behavioural drivers are currently lacking.
- Major retailers play an important role in both reflecting and influencing consumers and consumption. How can we better engage with this role to bring about more sustainable use of marine resources?

Summary

- In both group discussions, the need to establish strong collaborations between industry and science was clear. By including aquaculture and fishing businesses and organisations in discussions about their management there is the potential to build a better understanding of the industry's current sustainability.
- Including industry in research can help generate more industry-led data collection and may promote access to data collected by industry. The consensus was pre-existing data is currently undervalued and underexploited, and that where possible data must be used to help guide stakeholder decisions including consumers. To assist this the carbon footprint of both UK aquaculture and fisheries could be further investigated.

Workshop 3: Interventions (e.g. MPAs; Coastal protection)

Stakeholder engagement

The following comments were made regarding stakeholder engagement on the interventions theme:

- It is important to understand what we mean by stakeholders. It was felt that these could realistically be redefined as project partners / customers (government delivery bodies / departments / coastal management groups) and other stakeholders, including those who are being regulated and those who may see themselves as being beneficiaries such as the general public or eNGOs
- Early engagement with stakeholders was considered necessary in this theme, both as project partners and participants.
- Projects will need the full engagement of those who currently manage our marine space to understand their key issues, develop approaches and then mainstream them into their ways of working
- The issue of funding stakeholder groups was raised. It was noted that this was possible if a good case could be made for it
- Effective engagement with government bodies was raised as an issue. It was suggested that it would be useful for relevant government bodies to produce a statement of need across each theme as an initial steer for the academic community.

Timescales

The following comments were made regarding timescales on the interventions theme:

- It was generally thought that 18 months was not long enough to develop an intervention and measure change. In fact, it was thought that even with 48 months, it may be difficult to undertake baseline work, develop and implement an intervention and monitor any change. As such, it was generally agreed that any project should focus on areas where there is already a robust baseline, and where there is an intervention that has been developed and needs implementing, or has already been implemented and needs evaluating

- The issue of gaining consent for new interventions was raised. It can take up to 18 months to get a marine license for a novel project. It was suggested that this could be circumvented by delivering voluntary approaches or adapting an existing license by having an industrial partner who is already carrying out a regulated activity
- When implementing an intervention that is aimed at producing change at a habitat or species level, the time needed to monitor such change is often greater than 5 years.

Existing work

The following comments were made regarding existing work on the interventions theme:

- It was thought that it would make most sense to test developing or emerging approaches from existing work, or to evaluate current approaches and to build on the networks that academics already have.
- Examples of existing work included:
  - Defra North Devon Marine Pioneer projects
  - Plymouth National Marine Park
  - Any regulatory change (e.g. byelaw) that an IFCA may be introducing
  - Shoreline Management Plan implementation or evaluation
  - Restoration projects (e.g. oyster beds, seagrass)
  - Lundy Reserve could be a good area for a natural capital valuation
  - Arran MPA
  - Small Isles MPA – long time series - would be interesting to do some social science before measures get implemented.
  - Skomer Marine Nature Reserve

Approaches

The following comments were made regarding different approaches on the interventions theme:

- With work on interventions it is as important to understand the efficacy of human behaviour change as it is to understand the change on the natural environment. This could include modelling human behaviour, compliance or looking at ways to incentivize behaviour change to meet environmental goals (e.g. cultural, behavioural or financial incentives).
- There was discussion on whether work could be done looking at the implementation of existing interventions across the different administrations to understand how they have changed behaviour, and whether they have met their environmental outcomes.
- An area of work could look at the effectiveness of MPAs across the different administrations and at different temporal and geographical scales. This evaluation could be used in the context of EU exit to help develop MPA management for the next decade
- There was much discussion about the legacy of this work and ensuring that it was mainstreamed into government delivery. This is particularly important for the intervention theme as the programme is unlikely to be able to deliver an end to end product (pre baseline, intervention, post evaluation), and will therefore rely on partners to have either already delivered the baseline or the intervention, or be willing to take the new intervention into their own delivery work.
- From a political perspective, this programme has come at an opportune time, as the Marine Acts in all administrations are due for review, and we are heading into a time of emerging delivery and policy approaches with EU exit. Understanding how the broad scale interventions set out within the relevant Marine Acts (e.g. marine licensing, MSP, marine conservation, fisheries management etc) are operating would provide a good context to developing more specific interventions.
- Interventions focused on areas such as marine citizenship or ocean literacy could be developed, implemented and monitored within the timescales of this project.
- Most of the work being undertaken on interventions will be focused on the work of government delivery, both local and national, rather than government policy, which sits within central departments.

- It is important that any intervention is clear in its goals and outcomes and is posing robust science questions and societal valuation questions and looks to incorporate ecosystem services valuation where possible.
- There is a challenge in dealing with a degraded baseline that doesn't account for change (e.g. climate change). Novel modelling approaches (e.g. adaptive or assimilative modelling) should be used to define targets and monitor interventions. It is important that the correct policy / delivery mechanisms are identified where such approaches could work, but we should not assume that an approach is off the table just because it has never been used before.
- It was considered that it would be interesting to look at how interventions work across the land sea interface, from river catchments, through estuaries out to the inshore / coastal area. Understanding how activities are managed through the different management regimes and how these could be better integrated (farmer to fisherman).

Workshop 4: Governance & Planning

Aim: to unpack ideas around the three SMMR themes in the context of governance.

Values-based approach
- Knowledge does not equal behaviour change, which is why a values-based approach is needed. The media could be useful in facilitating this, with the correct collaboration. Modelling and natural capital approaches have made headway on this within governance. There has been over a decade's progress in developing an ecosystems approach, for instance.
- Ocean literacy feeds into a values-based approach within governance. For instance, including clear public incentives into management decisions can aid the governance process.
- Policies often focus on one area, such as energy or fisheries. There is a need to combine multi-value modelling to inform integrative policies and prioritisation of different values.
- Getting the general public involved in marine planning is difficult, especially when governance processes take a significant length of time. It may be more effective to focus on a demographically representative sample, such as via citizens' juries or assemblies.

Who governs?
- Governance centralisation has benefits and drawbacks. Although inshore fleet management is decentralised to some extent, such as via IFCAs in England, the top-down influence of Defra and the MMO (or Marine Scotland) is still heavily apparent.
- There has to be recognition that there won't be full consensus in any governance approach. How can inevitable conflicts be resolved?
- There is the need for vertical and horizontal integration. Vertical integration involves collaboration between the MMO and IFCAs and equivalent bodies. Horizontal integration involves collaboration between different marine industries, such as fisheries, seabed users, conservation and recreation. A common language is needed.
- The MMO could have a role in locally specific management solutions via an integrated system. For instance, it could facilitate practical tests of theoretical research.

Research and implementation
- Some believe that we have plenty of good models (e.g. for ecosystem health), but the 'implementation gap' is holding back progress.
- There is a need for scientists to learn governance literacy. Producing evidence is not enough, and many planning practitioners are unaware of the tools developed by scientists. Better methods for communicating with and training practitioners are needed.
- How can governance integrate different sorts of information (e.g. quantitative and qualitative) from a range of disciplines? For instance, how can monitoring and reporting of the marine environment be streamlined?

Pace of change
- Climate change and other factors mean that management decisions made today (e.g. protected areas, areas developed for wind farms) may not be sensible for the marine environment of the future.
- Data accessibility needs to be accelerated to ensure it is used effectively.
- Government policy can be slow, but corporate policy can be nimbler and more reactive. It is worth identifying key influencers in decision-making processes and targeting them.

Workshop 5: Understanding marine ecosystems, their components and the ecosystem services provided

Effective dissemination of information across all systems and stakeholder groups
- Pathways need to be developed to incorporate qualitative data into scientific data and decisions. This could be through the development and testing of pathways (visual techniques, ways of engaging with communities) for embedding evidence in different groups across the UK.
- There is a need to identify what level of ecosystem services are 'good'. Currently there is no metric to establish what indicators are counted as good/good enough. Establishing such a system based on economic, biodiversity, and societal values could be a way to move forward quickly.

Evidence-based case studies for policy makers
- Terrestrial research has already developed an ecosystems services approach that is being applied to policy decisions - we could learn from these examples and provide case studies of applicable examples to give assurance to marine policy makers.

Using regional initiatives as a starting point
- Joining forces with devolved groups who have been given responsibility for marine planning in smaller areas would give more scope for creativity and integrated approaches.
- Work from locally-specific management solutions which allow for holistic approaches that can then be scaled-up to a national level.

Putting socio-economics at the forefront
- Flip how the process currently operates on its head by starting from the thing that policy makers want to achieve; trying to accommodate the wishes of other stakeholders; and then shaping research and planning to fit those desires.
- Modelling tools should be used to link components and provide understanding at all stages of variability. There is a dichotomy between mathematical and human value systems when assessing ecosystems natural capital which needs to be accommodated. Currently, too much emphasis is placed upon the monetary interpretation of natural capital while other metrics or ways of assessing human value are underrepresented.
- Establish a way to gauge the value that society places on existing drivers that tend to conflict (e.g. climate change objectives and bird protection). Knowledge and understanding of societal value would inform how we deal with the inevitable clash that will come.
- Changing values will now be affected by COVID-19, and we need to recognise the influence that that will have on the level of connection/sense of urgency for protecting the marine environment over the next 18 months.

Changes to licensing restrictions
- Radical changes in marine licensing were outlined as necessary to allow marine research to move forward at policy level. Discussion centred around a need to establish what the research community could do to inform an IROPI decision and apply scientific output to developments in licensing generally.

Workshop 6: Understanding the productivity of our seas and the impact of human and other activities

Measuring ecosystem productivity

- The seas are economically, socially, and environmentally important environments. However, it is difficult to monetise societal and environmental marine ecosystem services, and incorporate these into representative cost-benefit analyses.
- The collection of updated marine ecosystem data, developing new ecosystem-based modelling frameworks, and creating ecosystem-based impact assessments, present innovative approaches for integrating ecosystem-based management into policy.
- There is a 'range of uncertainty' associated with all productivity data. Policy makers need to understand what these ranges actually mean. Ranges should not present a barrier to decision-making, and could help to inform post-consent monitoring and research.
- To ensure fisheries productivity from an ecosystem-based perspective, consideration of co-dependent species populations, such as sea birds, is important. However, there are questions around whether these groups should be managed individually or holistically within commercial fisheries management.

Systems-based research

- Systems-based research differs from traditional research as it is generally understood to have a broader scope, whilst being highly integrated, so that it can be applied across the whole system, i.e. ecosystems, species, societies, economics, governance.
- There are big challenges in implementing systems-based thinking, particularly as there are many different interpretations of the term. It is fundamental that systems approaches are relevant to the end user.

Impact of human activities

- The cumulative impact of offshore developments on marine populations, habitats and fisheries, needs far greater consideration than it currently receives. For example, the North Sea has experienced a rapid increase offshore wind farm development in recent years.
- Developing new forms of cumulative impact research is critical.
- There is a significant shortage of documented evidence surrounding the long-term social and economic impacts of offshore developments on coastal communities at the local level. The social science techniques for undertaking this research are well established, but the work simply hasn't been done. This represents a very important research gap.
- Establishing meaningful engagement and consultation with local stakeholders from the outset of the marine planning process is key for conflict avoidance.

Marine policy

- Changes are needed in the UK policy environment, as we are still struggling to meet our biodiversity targets, marine protection goals and climate change commitments.
- There is huge variation in timescale between ecological processes, scientific research and the legislative system. Amending the regulatory process to make it more flexible and adaptable to feedback and interventions, would be hugely advantageous for the marine environment and policy in general.
- UK fisheries management has remained static for many years. Brexit presents an opportunity to take a more integrative approach to inshore fisheries management, through devolving control to stakeholders, termed 'co-management'.
- In practice, regulators rarely go back and evaluate their decisions, hindering their ability to adapt and improve.
- Aligning risk/impact metrics between industry, policy and scientists would be extremely valuable, because all sectors currently speak very different languages.

UKRI Sustainable Management of UK Marine Resources (SMMR) Stakeholder-Researcher Workshop – Tuesday 31st March – afternoon breakout sessions

SESSION ONE (1300-1400)

Restoration of coastal and marine habitats and implementing net gain (contributing to balancing carbon levels and/or biodiversity)	**Innovative methods of fisheries/aquaculture management**	**Interventions (e.g. MPAs; Coastal protection)**	**Governance & Planning**	**Understanding marine ecosystems, their components and the ecosystem services provided**	**Understanding the productivity of our seas and the impact of human and other activities**
Guided by Prof David Paterson (SMMR Champion)	*Guided by Dr Mark James (SMMR Champion)*	*Guided by Dickon Howell (SMMR SAG member)*	*Guided by Dr Tavis Potts (MSCC Social Science Group)*	*Guided by Prof Melanie Austen (SMMR SAG member)*	*Guided by John Murray (SMMR SAG member) & Janelle Braithwaite (Marine Scotland)*
Sui Phang Portsmouth Uni	Chris Leakey St Andrews Uni	James Lawrence Imperial	Gina Reinhardt Essex Uni	Leonie Robinson Liverpool Uni	Oliver Patrick Carbon Trust
Richard Caldow Natural England	Trevor Telfer Stirling Uni	Brendan Godley Exeter Uni	Ruth Callaway Swansea Uni	Corinne Whitby Essex Uni	Ingrid Kelling Heriot Watt Uni
Natalie Hicks Essex Uni	Luca Giuggioli Bristol Uni	Sian Rees Plymouth Uni	Ana Queiros PML	Kam Tang Swansea Uni	Jaren Wilson Marine Scotland Science
Leanne Cullen-Unsworth Cardiff Uni	Axel Rossburg QMUL	Kirsten Ramsey Welsh Gov't	Anthony Gallagher Evolved Research & Consulting Ltd	Luca Borger Swansea Uni	Teresa Fernandes Heriot Watt Uni
Yves Plancherel Imperial	Chris Hauton Southampton Uni	Laurent Amoudry NOC	Leslie Mabon SAMS	Emma Ransome Imperial	Beth Scott Aberdeen Uni
Pippa Moore Aberystwyth Uni	Magnus Johnson Hull Uni	Katherine Bowgen BTO	Peter Jones UCL	Ruth Parker CEFAS	Tim Stojanovic St Andrews Uni
Emma Shehan Plymouth Uni	Richard Stillman Bournemouth Uni	Carol Cotterill BGS	Mike Elliot Hull Uni	Simone Martino York Uni	Amaya Albalat Stirling Uni
Elena Garcia-Martin NOC	Sarah Brown C2W	Tom Bradwell Stirling Uni	Aisling Lannin MMO	Tim Acott Greenwich Uni	Tara Hooper PML
Robyn Inglis York Uni	Richard Barnes Hull Uni	Caroline Chambers GoBe Consultants	Kirsty Lindebaum Welsh Gov't	Sofiya Stoyanova DEFRA	Clare Postlethwaite MEDIN

Tiziana Luisetti CEFAS	Paul Fernandes Aberdeen Uni	Lesley Henderson Brunel Uni	Emma McKinley Cardiff Uni	David Bailey Glasgow Uni	George Lees SNH
Charlotte Hopkins Hull Uni	Martin Lewis Bangor Uni	Katherine Yates Salford Uni	Ian Selby Plymouth Uni	Elizabeth Masden ERI, UHI	
Nicola Rimmington NRW	Matthew Spencer MSC	Matt Frost MBA	Clive Fox SAMS	Francis Daunt CEH	
Stephanie Nolte UEA	Ian Ashton Exeter Uni		Sue Barr Marine Energy Council	Mike Heath Strathclyde Uni	
Cathy Tilbrook SNH			Robert Arthur MRAG	Paul Somerfield PML	
Wiebke Schmidt Environment Agency			Rachel Mulholland CEFAS	Jan Hiddink Bangor Uni	
			Julie Urquhart Gloucestershire Uni	Jason Holt NOC	
			Louisa Evans Exeter Uni	Vicky Morgan JNCC	
			David Ong Nottingham Trent Uni	Suzanne Henderson SNH	

SESSION TWO (1430-1530)

Restoration of coastal and marine habitats and implementing net gain (contributing to balancing carbon levels and/or biodiversity)	**Innovative methods of fisheries/aquaculture management**	**Interventions (e.g. MPAs; Coastal protection)**	**Governance & Planning**	**Understanding marine ecosystems, their components and the ecosystem services provided**	**Understanding the productivity of our seas and the impact of human and other activities**
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Nicolas Malone	Sui Phang	Oliver Patrick	Kam Tang	Richard Caldow	Leanne Cullen-Unsworth

Environment Agency	Portsmouth Uni	Carbon Trust	Swansea Uni	Natural England	Cardiff Uni
Corinne Whitby Essex Uni	Leonie Robinson Liverpool Uni	Gina Reinhardt Essex Uni	Chris Leakey St Andrews Uni	Natalie Hicks Essex Uni	Yves Plancherel Imperial
Ruth Parker CEFAS	Emma Shehan Plymouth Uni	Ana Queiros PML	Luca Borger Swansea Uni	Ruth Callaway Swansea Uni	Trevor Telfer Stirling Uni
Simone Martino York Uni	Brendan Godley Exeter Uni	Emma Ransome Imperial	James Lawrence Imperial	Pippa Moore Aberystwyth Uni	Richard Stillman Bournemouth Uni
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Laurent Amoudry NOC	Robyn Inglis York Uni	Charlotte Hopkins Hull Uni	Ingrid Kelling Heriot Watt Uni	Elena Garcia-Martin NOC	Kirsty Lindebaum Welsh Gov't
Sofiya Stoyanova DEFRA	Elizabeth Masden ERI, UHI	David Bailey Glasgow Uni	Sian Rees Plymouth Uni	Louisa Evans Exeter Uni	Clive Fox SAMS
Ian Selby Plymouth Uni	Robert Arthur MRAG	Mike Elliot Hull Uni	Teresa Fernandes Heriot Watt Uni	Leslie Mabon SAMS	Carol Cotterill BGS
Tim Stojanovic St Andrews Uni	Amaya Albalat Stirling Uni	Nicola Rimmington NRW	Beth Scott Aberdeen Uni	Jaren Wilson MSS	Mike Heath Strathclyde Uni
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Tara Hooper PML	Jan Hiddink Bangor Uni	Rachel Mulholland CEFAS	Richard Barnes Hull Uni	Magnus Johnson Hull Uni	Ian Ashton Exeter Uni
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Caroline Chambers GoBe Consultants	Martin Lewis Bangor Uni	Lesley Henderson Brunel Uni	Paul Somerfield PML	Emma McKinley Cardiff Uni	
Katherine Yates Salford Uni	Matthew Spencer MSC		Clare Postlethwaite MEDIN	Paul Fernandes Aberdeen Uni	
			David Ong Nottingham Trent Uni	Sue Barr Marine Energy Council	
			Matt Frost MBA	Jason Holt NOC	
				Tim Acott Greenwich Uni	

Contacts List

We are working with our policy colleagues to provide resources and single points of contacts, so emails of those individuals who attended the workshop have been removed for now.

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