

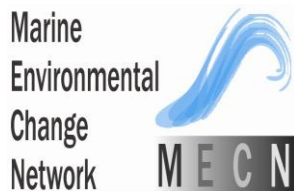
SOFI Workshop Report WS 08 03

UK MARINE OBSERVATORIES AND ECOSYSTEM-BASED TIME SERIES: CURRENT STATUS, SCIENCE LINKS AND CONTRIBUTION TO POLICY

A report on a workshop organised by
the Marine Environmental Change Network,
the UKMMAS Healthy & Biologically Diverse Seas Evidence Group
and the NERC Oceans 2025 strategic research programme
held at the Marine Biological Association of the UK
10 -11 June 2008

Nova Mieszowska, Matt Frost, Jane Hawkridge and Phil Williamson

September 2008



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Executive summary

This multi-partner workshop brought together a wide cross-section of the longterm marine monitoring and research communities with agency representatives and policymakers. It established many new channels of communication between various research teams and lead authors for the second Charting Progress (CP2) assessment. The marine research community is now more widely aware of the remit of CP2; in addition, researchers provided relevant scientific information for inclusion in the Feeder Report, and suggested links with additional members of the scientific and NGO communities who may have data appropriate for inclusion in the report. There was a realisation that research findings need to be translated up to the food-web and ecosystem levels to be of most use in informing government policy and legislation. Dialogue initiated at the workshop between members of the science community and government agency staff and policymakers should be maintained and enhanced in order to facilitate reporting required now (i.e. CP2 and OSPAR assessment strategies) and in the future (e.g. EU Marine Strategy Framework Directive, MSFD).

Background

Tracking and understanding changes in the marine environment has never been more important, and the need to maximise the cost-effectiveness of data gathering, data management and data analysis has never been greater than at the present time. Whilst much has been achieved through the Defra-led UK Marine Monitoring and Assessment Strategy (UKMMAS), there are opportunities for additional mutual benefit to be gained by closer working between different communities engaged in policy-directed and science-directed marine observations.

This workshop was therefore convened to bring together marine scientists from three organisational perspectives: the UKMMAS Healthy & Biologically Diverse Seas Evidence Group (HBDSEG); the NERC-supported Oceans 2025 programme; and the Marine Environmental Change Network (MECN), involving a wider range of time series and long-term research programmes, including university-based work. Liverpool University has additional involvement due to Professor Frid’s role as Chair of the MECN Scientific Steering Group. Further details of these organisations can be found in Appendix 1.

The UK Government’s vision of having “clean, healthy, safe, productive and biologically diverse oceans and seas” has been firmly incorporated into a number of UK marine strategies and programmes, including the formation of the HBDSEG evidence group within UKMMAS. NERC’s multi-Centre Oceans 2025 strategic programme also seeks to support this vision. Within Oceans 2025, Theme 10 (*Integration of sustained observations in the marine environment*) is concerned with obtaining meaningful information on environmental changes and their causes, primarily to provide underpinning capability for other themes within the Oceans 2025 programme. MECN is represented on HBDSEG and has been tasked with coordination and editing of the CP2 feeder report being prepared by HBDSEG. It is also linked to NERC via its role as co-ordinator of long-term marine time series collected by UK research institutes and HEIs, and has responsibility for knowledge transfer from the Western Channel Observatory, and for funding the UK benthic time series Network. The role of MECN as a two-way conduit between scientists and policymakers worked well in the workshop setting, facilitating the provision of information on marine assessments (such as CP2) to scientists, and the direct delivery of fit-for-

purpose science to those policy and agency staff responsible for the authorship of the HBDSEG CP2 Feeder Report.

The meeting was jointly convened by Matt Frost and Nova Mieszkowska (MECN/MBA), Chris Frid (MECN/Univ of Liverpool), Phil Williamson (Oceans 2025) and Jane Hawkridge (HBDSEG), and it was coordinated by Nova Mieszkowska (MECN; Marine Biological Association of the UK, The Laboratory, Citadel Hill, Plymouth PL1 2PB; nova@mba.ac.uk). A list of workshop attendees is attached in Appendix 2.

NERC support via the Strategic Ocean Funding Initiative (SOFI) is gratefully acknowledged.

Aims and objectives of workshop

The overall goal was to improve the flow of scientific ideas and information between organisations and individuals in different institutional and funding frameworks (primarily government agencies, NERC-supported centres and universities). The workshop also sought to identify ways to increase the efficiency of knowledge transfer and optimise the way in which UK scientific knowledge and expertise is used to underpin marine policy at the national and regional level. In addition, the workshop provided a forum wherein all relevant research and monitoring data available for UKMMAS-coordinated assessment exercises, such as Charting Progress 2 (CP2) and the OSPAR Quality Status Report for the North Atlantic was directly communicated to the persons charged with delivering sections of these reports.

The specific objectives of the workshop were to:

- present and discuss the range of sustained observations supported through the NERC Oceans 2025 programme
- present and discuss the status of other relevant ecosystem-based time series and long-term research programmes
- enhance synergies between the two groups of activities and associated research, particularly investigate links between long-term observations and short term investigations and process studies e.g. short-term studies to look at causes of change identified from long-term investigations
- Increase community-wide involvement in data-gathering and interpretation for CP2 and OSPAR
- Identify and review how the science presented is being used to support policy and inform assessments and to make recommendations on how this process may be improved for future assessments.

Workshop overview

The workshop agenda and issues for breakout sessions are attached (Appendix 3).

Introductory talks provided an overview of current and future policy drivers and government assessments, followed by a review of the Marine Climate Change Impacts Partnership (MCCIP) and how the organisation is engaging with the scientific research community.

A session outlining the structure and scope of the Charting Progress 2 HBDSEG Feeder Report was led by relevant CP2 lead authors and their representatives. This enabled other researchers to begin to see where their work might fit in; it was also useful for chapter authors in identifying potential commonalities and overlap.

A second session of presentations outlined work being undertaken by the NERC scientific community on the long-term observations under Theme 10 (and associated science outputs). At the end of this session a breakout session entitled “making the connections – sustained observations and CP2 feeder reports” examined links between NERC science programmes and CP2 (see Appendix 3).

The final session of presentations highlighted relevant scientific findings from key researchers in the fields of oceanography, habitats and species (ranging from microbes to cetaceans) that could inform the CP2 chapters. At

the end of this session another breakout session entitled “making the connections – Scientific research and CP2 feeder reports” examined links between research and CP2.

In order to address wider questions of using science to inform policy and assessments and examining those links, a final breakout discussion was held entitled “Future assessments – best approaches for utilising research”.

Key workshop recommendations and other outcomes

1. It was agreed that clear, continuing communication was needed between scientists and CP2 Lead Authors to maintain the flow of relevant scientific information throughout the Feeder Report writing process.
2. A gap analysis was suggested for the HBSDEG CP2 Feeder Report to identify topic areas that still need to be covered after this workshop.
3. Scientists and research / NGO monitoring programmes with relevance to CP2 that were not represented at the workshop were identified by workshop participants, as additional potential contributors to CP2 themes. This information is given in Annex 4.
4. The lack of involvement of the wider scientific community in the first Charting Progress report was noted, and recommendations to prevent this shortfall for CP2 and future reporting exercises included; stronger encouragement by NERC for researchers to engage in knowledge transfer to policymakers¹, alteration of academic accreditation to engage more researchers in non-peer review publications for UK government, and engagement of EOF.
5. A follow-up meeting was proposed to gather together relevant members of the science community to trial a methodology for assessing the state of habitats for the CP2 Habitats Chapter and the OSPAR Regional Assessments. This workshop was held from 16-18 July 2008 in Edinburgh. A further workshop has been proposed in late November, at which the actual assessments will be undertaken and case-studies finalised. Authors involved in the species assessments for CP2 and OSPAR will be holding a similar workshop in September to determine whether the methodology being used for habitats can also be applied to species, and thus provide some consistency of approach.
6. Potential linkage of trends between disparate datasets from different geographic areas should be attempted in order to provide regional-scale assessments. This issue is of importance in connecting UK and wider-scale assessments, e.g. in the context of the EU Marine Strategy Framework Directive.
7. Scientific groups such as those undertaking research on benthic habitats would benefit from greater communication in order to facilitate habitat assessment and monitoring. A greater dialogue between policy makers and scientists would also enhance the UK capability for undertaking these exercises.
8. The workshop has been a significant first step in bringing together those with an interest in understanding and reporting on the UK Marine Environment. The dialogue initiated at the workshop between members of the science community and government agency staff and policymakers should be maintained and enhanced in order to facilitate reporting required now (i.e. CP2 and OSPAR assessment strategies) and in the future (e.g. EU MSD).

¹Knowledge Exchange plans are now (since 1 July 2008) required for NERC responsive mode grant proposals. See www.nerc.ac.uk/funding/application/keplans.asp

Appendix 1. Background information on organizing bodies

Marine Environmental Change Network

MECN has been responsible for coordinating and promoting the value of long-term time series and research since 2002. Its main aim is ‘*to ensure that information from the network is provided to policy makers and other end-users to enable them to produce more accurate assessments of ecosystem state and gain a clearer understanding of factors influencing change in marine ecosystems*’”. MECN provides a knowledge transfer mechanism for Theme 10, as well as providing links to time series and long-term research funded by other mechanisms and agencies, in universities and other research laboratories. For further details, see: www.mba.ac.uk/mecn.

Healthy and Biologically Diverse Seas Evidence Group

HBDSEG is one of three evidence groups established as part of UKMMAS to improve the coordination of UK marine monitoring and to gather scientific information for UK government reports and assessments. Preparation has recently started on “Charting Progress 2” (CP2), an integrated assessment of the quality of UK seas to be published in 2010. A key recommendation from reviews of the first Charting Progress report (2005) was that any follow-up initiative should involve greater participation by the marine research community.

CP2 chapters cover biological groups, communities and their physical environment, as follows: Plankton; Fish; Cetaceans; Seals; Turtles; Seabirds and waterbirds; Habitats and benthic communities; Microbes; Ocean processes, weather and climate; Inshore hydrographic processes, topography and bathymetry of the seabed. For further details, see: www.defra.gov.uk/environment/water/marine/uk/science/ukmas-hbdseg.htm
www.defra.gov.uk/environment/water/marine/uk/stateofsea/.

Oceans 2025

This NERC-supported strategic research programme is carried out at seven marine centres (NOCS, PML, POL, MBA, SAMS, SMRU and SAHFOS) over the period 2007-2012. Within the programme, “Integration of sustained observations in the marine environment” (Theme 10) provides support or co-support for fourteen sustained observations in UK and non-UK coastal waters and the open ocean. As follows: Atlantic Meridional Transect (SO 1); Porcupine Abyssal Plain observatory (SO 2); Meridional Overturning Circulation (SO3); Extended Ellett line (SO 4); Argo profiling floats (SO 5); Antarctic circumpolar current (SO 6); GLOSS sea level network (SO 7); Surface marine observations (SO 9); Western Channel Observatory (SO 10); Irish Sea-Liverpool Bay Observatory (SO 11); Tiree Passage time series (SO 12); Arctic shelf time series (SO 13); Marine mammal population dynamics (SO 14); and Continuous Plankton Recorder survey (SO 15).

These activities provide information and underpinning capability for other themes within Oceans 2025, and are linked to university-based work through the Strategic Ocean Funding Initiative (SOFI). For further details, see: www.oceans2025.org.

Appendix 2. Attendance list

Name	Organisation	Role / Research relating to CP2
Icarus Allen	PML	O2025/ National Centre for Ocean Forecasting
Steven Benjamins	JNCC	CP2 Chapter Author
Keith Davidson	SAMS	Plankton
Stephen Dye	Cefas	MCCIP science coordinator
Martin Edwards	SAHFOS	O2025 Theme 10 activity leader
Gaynor Evans	BODC	CP2 Chapter Author
Matt Frost	MECN / MBA	MECN Coordinator/Policy Co-ordinator
Ailsa Hall	SMRU	O2025 Theme 10 activity leader
Jane Hawkrigde	JNCC / HBDSEG	HBDSEG Chair
Paul Hayes	University of Bristol	Phytoplankton, microbes
Graeme Hays	University of Swansea	Turtles, zooplankton
John Howarth	POL	Ocean processes, weather & climate
Kerry Howell	University of Plymouth	Deep sea benthic habitats
Stuart Jenkins	University of Bangor	Benthic habitats
Mike Kendall	PML	Ocean acidification, benthic habitats
Liz Kent	NOCS	O2025 Theme 10 activity leader
Stephen Malcolm	Cefas	CP2, OSPAR & MSFD assessments; eutrophication
Krysia Mazik	University of Hull	Benthic habitats
Nova Mieszkowska	MECN	MECN Science Co-ordinator, intertidal habitats
Ian Mitchell	JNCC	CP2 Chapter Author
Richard Moxon	Defra	CP2, OSPAR & MSFD assessments
John Pinnegar	Cefas	CP2 Chapter Author
Roger Proctor	POL	CP2 Chapter Author, O2025 Theme 10 activity leader
Jane Read	NOCS	O2025 Theme 10 activity leader
Andy Rees	PML	O2025 Theme 10 activity leader
Lesley Rickards	BODC	CP2 Chapter Author
Declan Schroeder	MBA	CP2 Chapter Author
David Sims	MBA	O2025 Theme 10 activity leader
Tim Smythe	PML	O2025 Theme 10 activity leader
Denise Smythe-Wright	NOCS	CP2 Chapter Author; O2025 Theme 10 activity leader
Heather Stewart	BGS	CP2
Phil Williamson	NERC	O2025 Science Co-ordinator

Appendix 3. Workshop agenda

Tuesday 10th June

0930: CP2 lead authors meeting (Chaired by Matt Frost)

1030: Coffee

Overview: stakeholders and policy drivers

CHAIR: Matt Frost

1100: Introduction and workshop aims – Matt Frost (MBA & MECN)

1110: Charting Progress 2 – Stephen Malcolm (CEFAS)

1120: CP2 alignment: OSPAR and other policy drivers – Stephen Malcolm (CEFAS)

1130: The Marine Climate Change Impacts Partnership – Stephen Dye (CEFAS)

1140: Questions

CP2 HBDSEG feeder report chapter overviews by lead authors (8 minutes + 2 for questions)

CHAIR: Jane Hawkrige

1150: Plankton – Alistair Lindley (SAHFOS)

1200: Fish – John Pinnegar (CEFAS)

1210: Cetaceans – Steven Benjamins (JNCC)

1220: Coffee / comfort break

1230: Habitats and benthic communities - Stephen Benjamins (JNCC)

1240: Seals – Ailsa Hall (SMRU)

1250: Turtles – Ian Mitchell (JNCC)

1300: Seabirds and water birds – Ian Mitchell (JNCC)

1310: Microbes – Declan Schroeder (MBA)

1320: Ocean processes, weather and climate – Roger Proctor (POL)

1330: Sediment processes and morphology – Heather Stewart (BGS)

1340: Lunch (MBA common room)

Oceans 2025 Theme 10 sustained observations (8 min + 2 for questions)

CHAIR: Roger Proctor

1410: Introduction to Oceans 2025 Theme 10 – Phil Williamson (NERC)

1420: SO15 CPR Survey - Martin Edwards (SAHFOS)

1430: SO10 Western Channel Observatory and NCOF - Tim Smyth (PML)

1440: SO10 Western Channel Observatory – David Sims (MBA)

1450: SO11 The Liverpool Bay Observatory – John Howarth (POL)

1500: SO1 Atlantic Meridional Transect - Andy Rees (PML)

1510: Ecosystem Modelling – Icarus Allen (PML)

1520: SO14 Marine mammal population dynamics – Ailsa Hall (SMRU)

1530: General questions

1540: *Coffee / comfort break*

CHAIR: Phil Williamson

1550: SO2 Porcupine Abyssal Plain ocean observatory (PAP) – Richard Lampitt (NOCS)

1600: SO12 Tiree Passage time series – Keith Davidson (SAMS)

1610: Extended Ellet Line - Jane Read (NOCS)

1620: SO9 Climate-quality marine surface observations – Liz Kent (NOCS)

1630: SO5 Argo profiling float system – Brian King (NOCS)

1640: RAPID programme - Craig Wallace (NOCS)

1650: Ferrybox and acidification Research - Denise Smythe-Wright (NOCS)

1700: BREAKOUT SESSION (coffee provided): *Making the connections – sustained observations and CP2 feeder reports*

1745: Feedback from breakout.

1800: Close of session

Wednesday 11 June

0840: Coffee

Scientific research relevant to assessments (8 min + 2 for questions)

Chair: Stuart Jenkins

0900: Introduction – Phil Williamson (NERC)

0910: Fish – David Sims (MBA)

0920: Microbes - Keith Davidson (SAMS)

0930: Seals – Paul Thompson (University of Aberdeen)

0940: Turtles – Graeme Hays (University of Swansea)

0950: Seabirds and water birds – Ian Mitchell (JNCC)

1000: Questions

1010: *Coffee / comfort break*

CHAIR: Stephen Malcom

1040: Habitats & benthic communities: rocky intertidal - Nova Mieszkowska (MBA)

1050: Habitats & benthic communities: soft sediment - Stuart Jenkins (Bangor University)

1100: Habitats & benthic communities: soft sediment - Krysia Mazik (University of Hull)

1110: Habitats & benthic communities: soft sediment – Chris Frid (University of Liverpool) [talk given by Matt Frost]

1120: Habitats & benthic communities: deep sea - Kerry Howell (University of Plymouth)

1130: Habitats & benthic communities: impacts of ocean acidification - Mike Kendall (PML)

1140: Irish Sea long-term time-series – Richard Gowen (AFBI) [talk given by David Mills]

1150: European perspective on the ecosystem (EMECO) – David Mills (Cefas)

1200: Questions

1210: Lunch

1300: BREAKOUT SESSION: *Making the connections – Scientific research and CP2 feeder reports*

1345: Feedback from breakout

1400: Coffee

1410: BREAKOUT SESSION: *Future assessments – best approaches for utilising research*

1455: Feedback from breakout and final comments - Jane Hawkrigde (JNCC).

1515: Close.

Breakout sessions (questions).

Session 1: *making the connections – sustained observations and CP2 feeder reports*

Each group will be provided with a clipboard with chapter headings in columns. Please use the post-its provided Add post-its with details of research (and contact details) to relevant chapters to answer the questions below.

Q 1: Which of the Theme 10 research projects are relevant to the CP2 HBDESG report; map to relevant chapters and indicate (where known) whether they have already been considered for inclusion in the chapter(s)?

Q 2: Are there any research findings that should be included in multiple chapters?

Q 3: This is a national report working at relatively large scales, using many different data types of varying quality and quantity. Can the results of individual sustained observation programmes be extrapolated to different scales, if so, how easy would this be to do and would the results be meaningful? Could the information be supplied to lead authors in the required timescale?

Q 4: If you have identified information that would be useful to include in the CP2, is this going to be an easy process or are there difficulties with this?

Session 2: *making the connections – Scientific research and CP2 feeder reports*

Q 1: Which of the research projects are relevant to the CP2 HBDESG report; map to relevant chapters and indicate (where known) whether they have already been considered for inclusion in the chapter(s)?

Q 2: Are there any research findings that should be included in multiple chapters?

Q 3: This is a national report working at relatively large scales, using many different data types of varying quality and quantity. Can the results of individual research projects be extrapolated to different scales, if so, how easy would this be to do and would the results be meaningful? Could the information be supplied to lead authors in the required timescale?

Q 4: If you have identified information that would be useful to include in the CP2, is this going to be an easy process or are there difficulties with this?

Q 5: Are there researchers / research groups that you think are carrying out work relevant to UK Assessments such as CP2 who have not yet been consulted? If so, then please write down contact details and their area of research so they can be added to the marine research stakeholders database.

Session 3: *Future assessments – best approaches for utilising research*

CP2 is just one of a number of assessments being carried out or due to be undertaken in the future. Do you feel that marine assessments do incorporate the relevant science (i.e. are scientifically robust)? If not, then do you have ideas on ensuring that future assessments are informed by the most relevant up-to-date research?