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Food & Rural Affairs

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Marine strategy part two: UK marine monitoring programmes

Summary of responses

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Llywodraeth Cymru
Welsh Government



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Section 1: Introduction

1. This document contains the Government response to the consultation on the Marine Strategy Framework Directive (2008/56/EC) marine monitoring programmes, held between 8 January 2014 and 2 April 2014.
2. The Marine Strategy Framework Directive (MSFD) requires Member States to put in place the necessary management measures to achieve Good Environmental Status (GES) in their marine waters by 2020. Achieving GES involves protecting the marine environment, preventing its deterioration and restoring it where practical, whilst at the same time providing for sustainable use of marine resources. GES does not require the achievement of a pristine environmental state across the whole of the UK's seas.
3. The consultation covered proposals for marine monitoring programmes to assess progress against the targets and indicators set out in the Marine Strategy Part One (<https://www.gov.uk/government/policies/protecting-and-sustainably-using-the-marine-environment/supporting-pages/implementing-the-marine-strategy-framework-directive>). See Annex A for a list of consultation questions.
4. The UK Government and Devolved Administrations would like to thank everyone who contributed to our consultation. The proposals have been updated following the consultation exercise and the final UK monitoring programme has been published alongside this document and forms the UK Marine Strategy Part Two: UK marine monitoring programmes.
5. It is important to stress from the outset that the monitoring programmes are adaptive. If no issues are found after a suitable period, then monitoring programmes will be reviewed to see if sampling, frequencies etc. can be reduced. Similarly, should problems be identified, increased monitoring will be considered. For those areas where we are undertaking research to address knowledge gaps we will add, as necessary, further monitoring programmes as and when the research projects report.
6. A total of 65 responses to the consultation were received from a range of sectors including environmental Non-Government Organisations (eNGOs), marine industries, the fishing industry, the marine research community, Government Agencies and Non-Departmental Public Bodies (NDPBs). See Annex B for the list of respondents.

Section 2: Summary of responses on generic issues

7. A number of respondents commented on general issues, all of which have been noted and where relevant will be taken on board during any relevant future work. Any detailed comments on the drafting of the consultation document have been taken into account when producing the UK Marine Strategy Part Two. Responses to some of the general issues are set out below.

Issue 1: Quality Assurance, robust methodologies and the ability of monitoring programmes to detect change

8. The UK Marine Monitoring and Assessment Strategy (UKMMAS) evidence groups and the Monitoring Assessment and Reporting Group (MARG) have contributed significantly to the development of the MSFD monitoring programmes. The evidence groups ensure that the monitoring programmes that are deployed are carried out by laboratories operating within appropriate Quality Assurance systems and, where available, using methods that have been agreed at European level (e.g. the European Committee for Standardisation (CEN) standards) or that are accredited to ISO17025 (e.g. chemical analyses). Where appropriate the monitoring programmes are checked by statisticians to ensure that they are statistically robust and are able to detect meaningful levels of change. More detailed information will be available in the reporting sheets that will be submitted to the European Commission in October 2014.

Issue 2: Programmes of measures

9. Some respondents were concerned that the absence of information on measures made it difficult to comment on the monitoring programme. At this stage the marine monitoring programme is based around those monitoring programmes that will be used to assess progress against the UK's MSFD targets and indicators as set out in the Marine Strategy Part One. All decisions on which measures are taken to achieve GES (and any monitoring needed to assess their effectiveness) will be subject to a separate consultation process in early 2015.

Issue 3: Knowledge gaps and use of the precautionary principle

10. Several respondents commented on the number of knowledge gaps, data-poverty issues and areas requiring more research. Conversely, some industry respondents urged a proportionate use of the precautionary principle, as they felt industry suffered when the precautionary approach was used in cases where data were lacking.
11. Achieving GES needs to be consistent with sustainable use of the marine environment. Our approach is proportionate and in line with UK goals for achieving clean, safe, healthy, biologically diverse and productive seas. It avoids gold-plating the Directive and we believe it is sufficient to meet its requirements.

12. The monitoring programmes are risk-based and aligned to the targets and indicators set out in the Marine Strategy Part One. They deliberately reflect commitments set out in existing legislation agreed at an EU level (e.g. the Habitats Directive, the Water Framework Directive, and the Environmental Impact Assessment Directive (EIA) etc.). The monitoring programmes also closely adhere to the requirements set out in the Directive and the Commission Decision 2010¹ and will only cover elements not included in those documents if research programmes on gaps in knowledge show this is necessary.
13. The Government recognises that there remain a number of evidence gaps. Some of these were identified in Charting progress 2, and the OSPAR 2010 Quality Status Report, and this reflects the current level of understanding of what is a diverse and complex ecosystem. In most cases further work is being undertaken to address these gaps as quickly as possible through national, regional and European initiatives. The Directive recognises that there are some areas where more evidence is needed and this is reflected in the fact that implementation of the Directive is an iterative process which will be reviewed every six years.

Issue 4: Coordination with other countries

14. Several respondents highlighted the importance of coordinating UK monitoring with those of other Member States and in particular those that are Contracting Parties of OSPAR.
15. The Government agrees with this. There are a number of existing international commitments and conventions on the marine environment and the UK has and will continue to work actively within these fora to help achieve the goals of the Directive. For the MSFD, this is primarily achieved through our active and long-standing engagement in OSPAR and in particular through the OSPAR Joint Assessment and Monitoring Programme (JAMP) and the use and further development of OSPAR common indicators. Implementation of the JAMP commits each Contracting Party to provide an appropriate level of resources to achieve the common intention. It provides a framework for work to develop OSPAR's monitoring and assessment programmes, with a particular focus on supporting the work to implement the MSFD that needs to be done by Contracting Parties that are EU Member States.

Issue 5: Reliance on existing monitoring programmes that were established for other purposes (e.g. WFD, Conservation of Seals Act, OSPAR agreements etc.)

16. Many respondents agreed on the use of existing monitoring programmes to support implementation of the Directive although some felt that there was an over-reliance on these existing programmes and that on their own they would not be sufficient to assess GES.

¹ Commission Decision of 1 September 2010 on criteria and methodological standards on good environmental status of marine waters 2010/477/EU <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2010:232:0014:0024:EN:PDF>

17. The Directive makes clear that existing Directives and other international agreements need to be taken into account. The targets and indicators in the Marine Strategy Part One reflected this and it therefore follows that existing monitoring programmes should be used wherever relevant. Where existing monitoring does not cover the UK's MSFD targets and indicators, new monitoring programmes have been proposed or are being developed.

Issue 6: Targets and indicators

18. Some respondents commented on the adequacy of the UK's MSFD targets and indicators.
19. The targets and indicators are those set out in the UK's Marine Strategy Part One and that have been reported to the European Commission. Other than those areas where knowledge gaps and areas for further development have been identified, it is not the intention to revise the targets and indicators at this stage in the MSFD implementation process.

Issue 7: Detailed information on the monitoring programmes

20. Some respondents asked for more detailed, technical information on the monitoring programmes. The intention of the monitoring programme consultation was to provide a summary of the monitoring programmes to be used to monitor progress against the targets and indicators set out in the Marine Strategy Part One. Further information on the technical details will be available in the reporting sheets submitted to the European Commission in October 2014.

Issue 8: Links between MSFD and Water Framework Directive (WFD)

21. Some respondents had comments or queries about links between MSFD and WFD and in particular on the areas where they overlap.
22. There is a strong link between the WFD and the MSFD. As set out in the consultation document efforts have been taken during the development of the monitoring programmes to ensure alignment between the two Directives wherever possible. For issues that are covered both by WFD and MSFD (such as eutrophication and contaminants) we are confident that the WFD monitoring programmes have a key role to play in demonstrating whether the UK's MSFD targets and indicators are being achieved.
23. Government is also working closely with the relevant delivery agencies to ensure that there is close alignment between the development of the MSFD Programme of Measures and the next phase of River Basin Management Planning. The aim is that the programmes and plans developed under each Directive are consistent and complementary, with appropriate cross references to ensure links between the two processes are clear for developers and other stakeholders.
24. The WFD relates to improving and protecting the chemical and biological status of surface waters throughout a River Basin Catchment from rivers, lakes and groundwaters

through to estuaries (transitional) and coastal waters to 1 nautical miles out to sea (3nm in Scotland) and overlaps with MSFD in coastal waters (for chemical status the overlap between WFD and MSFD extends to 12 nautical miles). The MSFD includes coastal waters (as defined by the WFD) but does not include WFD transitional waters (e.g. estuaries, sea lochs, coastal lagoons). For estuaries, the boundary between the two directives is the “bay closing line” which is the seaward limit of “Transitional Waters” as defined under the WFD.

25. MSFD explicitly recognises the overlaps with WFD and makes it clear that in coastal waters, MSFD is only intended to apply to those aspects of GES which are not already covered by WFD (e.g. noise, litter, aspects of biodiversity).
26. Given the strong links between the MSFD and the WFD it is important for stakeholders interested in implementation of the MSFD to engage in the current WFD cycle 2 processes and associated consultations. The WFD will be used to monitor (and deliver) certain aspects of the MSFD (including contributing to the monitoring of pollution contaminants, eutrophication and benthic habitats) in coastal waters.

Issue 9: Prevailing conditions

27. Some respondents commented on the importance of taking into account changes in prevailing environmental conditions, including climate change.
28. The Directive explicitly acknowledges the dynamic nature of marine ecosystems and their natural variability, and that pressures and impacts on them may vary because of prevailing conditions and climate change. The UK marine institutes and research organisations have extensive monitoring programmes looking at sea temperature, acidification, and other climate-related variables and these will be used to help assess the influence of these pressures. The progress under the Directive has to be reviewed every six years and this will be an opportunity to consider whether there is a need for any updates due to any significant changes in prevailing conditions. These changes will need to be taken into account when assessing the achievement of GES.

Section 3: Summary of responses on Descriptor-specific issues

Descriptors 1, 4 and 6 Biodiversity

29. The comments on the monitoring programmes for Descriptors 1, 4 and 6 covered the following main issues. Where necessary the monitoring programme documentation has been modified.

Issue raised: Has there been sufficient co-ordination across the UK and regionally?

30. See general issues section. In addition the UKMMAS and in particular the Healthy Biodiverse Seas Evidence Group (HBDSEG) and the Joint Nature Conservation Committee (JNCC) ensures the Devolved Administrations and appropriate scientific advisors are involved in development and coordination of the MSFD biodiversity monitoring programme across the UK. The UK also takes a strong and proactive role at the regional level in OSPAR in the development of the OSPAR common biodiversity indicators. The recommendations and guidelines coming from these groups are fully considered in the development of our national marine biodiversity programmes.

Descriptors 1 and 4 Fish

Issue raised: The monitoring programme proposed under Descriptor 1 and Descriptor 4 for fish makes no mention of Descriptor 6 and benthic habitats which will play a role in fish health in the UK.

31. The intention is that data from different sources will be integrated as much as possible for the assessment of all indicators. The Descriptors do not work in isolation. A UK Marine Biodiversity Monitoring R&D Programme strategy, led and developed by JNCC, is looking to integrate monitoring activities in a manner that can increase the efficiency of gathering information relevant to all biodiversity-related Descriptors.

Issue raised: Concerns regarding gaps over the species the monitoring programme covers – particularly, sensitive, elasmobranch and diadromous species.

32. The consultation documents recognised that these are gaps and issues and that we will be working at both the national and regional level to consider how best to fill these gaps. The approach takes account of the fact that several species are not covered by routine monitoring programmes. The majority of monitoring on fish comes under Descriptor 3 as the dominant Descriptor and source of actions on fish. Management measures used to improve GES of demersal stocks will largely relate to fishing pressure. Our assumption is that if GES is achieved for the fish community that is sampled by the International Bottom Trawl Surveys (as a result of fisheries management) then it will also be achieved for other species not well sampled, but impacted by the same pressure.

Issue raised: A large number of comments relating to how diadromous species are covered under MSFD.

33. These species are an identified gap and this was recognised in the monitoring consultation proposals. We are working both nationally and regionally to consider how best to utilise the data available on these species and include them within our fish monitoring programme. In particular work is underway in the UK to investigate the possible use of existing freshwater monitoring stocks to assess the status and health of offshore stocks of certain diadromous species.

Issue raised: Further details requested on what species are to be covered by the targets.

34. The list of sensitive species will vary depending on the data. The suite of sensitive fish species covered, including both commercially targeted and non-targeted species are those which are least able to withstand additional mortality, and tend to be slow growing, large bodied species with low rates of reproduction. The species to be included in the assessment for these targets are chosen by identifying the 33% most sensitive species caught in existing research surveys and then excluding any for which data are too poor to allow robust statistical analysis (e.g. because they are so rare that they are not routinely caught in research surveys)². As the available data do not go back to periods when human activity was minimal, baselines will be set as the average value for each species throughout the entire time period. It is acknowledged that setting the targets in this way means that the rarest species (e.g. angel shark) will be excluded from the assessment of GES. However, it is not considered possible to set appropriate, technically defined indicators and targets for these species due to the lack of survey data to support assessments. The way in which the targets have been set ensures that a representative suite of sensitive species are assessed and they give an indication of the overall status of sensitive species. Dealing with these particularly rare and vulnerable species will continue to happen on a case by case basis in line with the Government and Devolved Administrations existing commitments to protecting vulnerable species. The method of determining these species was laid out in Charting Progress 2³ and the UK's initial assessment in the Marine Strategy Part One⁴.

35. Species lists are not required for the ecosystem structure and food webs targets under Commission reporting requirements for Article 11. In this case, species composition will depend on data quality.

² To support robust statistical analysis species are only carried forward into the assessment if they are recorded in 50% of the surveys undertaken.

³ Charting Progress 2: <http://chartingprogress.defra.gov.uk/>

⁴ UK Marine Strategy Part One: <https://www.gov.uk/government/publications/marine-strategy-part-one-uk-initial-assessment-and-good-environmental-status>

Descriptors 1 and 4 Mammals

Issue raised: Additional threats to cetaceans and seals should be included and need further investigation.

36. The aim of the monitoring proposals is to support the targets set out in the Marine Strategy Part One. These targets aim to ensure that marine mammal distribution is not significantly affected by human activities and that their abundance is not decreasing as a result of human activities, using baselines consistent with those used for the Habitats Directive. Specific targets have also been developed for the condition of marine mammals, looking at species productivity and the impacts from key pressures, such as by-catch. The monitoring programmes will allow progress against those targets to be assessed.

37. Full details and analysis of the threats to cetaceans and seals can be found in Charting progress 2 and the UK's initial assessment in the Marine Strategy Part One.

Issue raised: The five year monitoring programme for harbour seals is not sufficient.

38. Under the Conservation of Seals Act 1970⁵ the UK's Natural Environment Research Council (NERC) has an obligation to provide seal management advice. The monitoring programmes proposed are designed to meet these obligations. Scientists have advised us that they are also sufficient to assess the UK's MSFD targets.

Issue raised: Monitoring of seals for corkscrew injuries.

39. A risk-based approach to monitoring corkscrew injuries will be taken, as advised by the Government of Scotland where the majority of corkscrew injuries occur. Additional funding for post-mortem work in England is also currently being considered. The monitoring programmes do not address beach monitoring for corkscrew injuries as this does not directly relate to any of the UK's MSFD target or indicators.

Issue raised: Why is there a difference between the UK Initial Assessment which concludes that status of the five most abundant cetacean species in UK waters is favourable, whilst the European Environment Agency (EEA) finds that the status of only the bottlenose dolphin to be in a favourable status in NW European waters including UK waters, while the harbour porpoise and minke whale populations are assessed as unfavourable – inadequate, and white-beaked dolphin and fin whale assessed as unknown.

40. The EEA reports referred to are the collated 2007 Article 17 reports and have been identified as unreliable. The ICES Working Group on Marine Mammals Ecology (WGMME) has recommended that as a result of the inconsistencies and issues noted in the collation of Member State reports the database and/or the information available on the European Topic Centre website cannot be used for a reliable analysis of the distribution and abundance of marine mammals in European waters. For harbour porpoises, there are two major issues with the EEA report. The UK submitted the SCANS II estimate for European continental shelf waters and clearly stated this at the

⁵ Conservation of Seals Act (1970): <http://www.legislation.gov.uk/ukpga/1970/30/contents>

time. The EEA translated this into the UK abundance. Secondly, the original assessment for porpoises was favourable, but on the basis of one comment from the Netherlands the overall assessment was changed to unfavourable (inadequate) which is what is published in the EEA reports. The overall assessment of unfavourable (inadequate) ignores the data from the two SCANS surveys indicating that no significant change could be detected in abundance over the last decade over the majority of the European continental shelf. This fact was noted in the individual Member State reports by Belgium, Denmark, UK and the Netherlands but ignored when the individual Member State reports were collated. For the other species, WGMME noted the following inaccuracies:

- Bottlenose dolphin: favourable status from Ireland and the UK which cover the majority of the population.
- Minke whale - unfavourable (inadequate) status due to a report from Portugal, despite favourable reports from the UK and Ireland where the majority of population resides. SCANS surveys found no evidence for a change in abundance over the last decade.
- Fin whale – unknown status based on Spanish, French and Portuguese reports, despite favourable assessments from UK and Ireland where the majority of the population resides.
- White beaked dolphin – unknown status due to the assessments from France, Ireland and Netherlands, despite a favourable assessment by the UK. SCANS surveys found no evidence of change in abundance.
- White sided dolphin – unknown status due to the assessment from France and the UK, despite a favourable assessment by Ireland which provided the only abundance estimate.

Descriptors 1 and 4 Birds

Issue raised: Calls to enhance the birds monitoring programme to cover the impact of non-indigenous predators on island seabird colonies, seabirds dying from entanglement in nets, or on long lines and habitat pressures.

41. Currently, only a limited number of islands are regularly monitored for the presence of non-indigenous mammalian predators on island seabird colonies. This is in support of the target on the risks to island seabird colonies from non-native mammals. This indicator will be used to inform measures to prevent or alleviate major impacts from non-native and invasive native mammalian predators on island seabird colonies. Further research is required to identify options for improving the scope of the monitoring currently in place and to develop a set of standard monitoring methods.
42. Fishing bycatch monitoring is under investigation and the cumulative impact of all pressures will be reflected in the abundance indicator.

Issue raised: Concerns regarding the gaps in data for waterbirds and seabirds and that the programme focuses on estuaries and wetlands.

43. The monitoring programme for MSFD builds on that already underway for the Birds Directive. To add the monitoring already being carried out in transitional waters to the MSFD monitoring programme would in effect be double counting/reporting on these populations.
44. Scientists advise that monitoring programmes that will be used are sufficient for assessing progress against the UK's MSFD indicators. Going forward, options for whether there is scope to improve the ability and confidence in assessing progress towards GES, including the need for and practicality of any additional monitoring requirements is being explored. Research is underway, as part of a JNCC-led Marine Biodiversity Monitoring R&D Programme, to investigate the feasibility of monitoring, beyond 2014, inshore and offshore aggregations of seabirds and waterbirds. This may mean more species of marine bird could be included in the next assessment of GES in 2018.

Issue raised: More detail was requested on how the existing monitoring will be tailored to measure the achievement of GES or otherwise.

45. A JNCC-British Trust for Ornithology (BTO) report on the use of data from existing schemes, e.g. Wetland Bird Survey (WeBS) and the Breeding Bird Survey (BBS) is scheduled to be published in 2014 and will help.

Descriptors 1, 4 and 6 Pelagic habitats

Issue raised: More detail of station numbers, positions, what constitutes a regular interval (hourly, daily, weekly, monthly, etc.), and what other environmental variables are measured would be required to judge whether this monitoring was sufficient.

46. The monitoring programme consultation contained summaries of our proposals. For pelagic habitats it will use data from a combination of 15 sample stations in conjunction with the Continuous Plankton Recorder (CPR)⁶. Full details of the monitoring programme, showing station locations, plankton component sampled and water types will be made available in the detailed reporting sheets that will be submitted to the European Commission in October 2014.

Issue raised: Do all the plankton programmes have adequate metadata and quality control/assurance procedures?

47. Yes. Both the CPR and fixed point stations have documented metadata and quality control/assurance procedures.

⁶ CPR run by the Sir Alister Hardy Foundation for Ocean Science: <http://www.sahfos.ac.uk/>

Descriptors 1 and 6 Benthic Habitats

Issue raised: Sufficiency of habitat mapping and the development of the JNCC-led marine monitoring programme.

48. The JNCC-led Marine Monitoring R&D Programme is developing the strategy for future monitoring to fulfil the needs of MSFD and other drivers. The options for Marine Protected Areas (MPAs) and Habitats are in development and are complex and inter-related, and involve coordination with many organisations. Partial options will be delivered late this financial year. Part of the development of the options is to review the adequacy of current monitoring programmes for that element of biodiversity.

Descriptor 2 Non-Indigenous Species

49. The comments on the monitoring programmes for Descriptor 2 covered the following main issues. Due to the current status of work it is unsurprising that the majority of comments reflected the need for more work to be done in this area. There were a number of useful suggestions about what should be considered as we continue to develop the Non-Indigenous Species (NIS) monitoring programme. We are grateful for these suggestions and will consider all of the points raised as we develop our approach further.

50. The monitoring programme has been refined to take on board some of the comments received, mainly around points of clarification. However at this time there are no substantive changes to the proposals.

Issue raised: The proposals are at an early stage in development and therefore lack detail, so they cannot be considered sufficient to meet requirements of the Directive.

51. The monitoring consultation proposals acknowledged that work on the monitoring programme for this Descriptor was on-going. This work has now been completed and the options for a monitoring programme are currently being considered.

Issue raised: Are the existing monitoring programmes for NIS sufficient to meet the requirements of the Directive?

52. As stated above, we are in the process of developing the NIS monitoring programme. The work we have commissioned to help develop the monitoring programmes has looked at existing monitoring programmes to assess their suitability to detect NIS. The results of this work are being evaluated.

53. The monitoring programmes mentioned for Northern Ireland marine areas will be maintained and repeated.

Issue raised: There were suggestions that links with WFD, Ballast Water Convention and the forthcoming EU Regulation on the control of alien invasive species need to be made in the monitoring programme.

54. All relevant existing monitoring is being considered as part of the work to develop the NIS monitoring programme. Links with the WFD will be important, as will be links with

other marine monitoring programmes. The list of target species list developed by WFD UK-Aliens technical advisory group on NIS could be a useful starting point for the development of a species list for MSFD monitoring. There are also a number of WFD monitoring programmes which record NIS.

Issue raised: It was suggested that Descriptor 2 needed to align with the invasive species proposals under the birds Descriptor.

55. Efficiencies will be made where possible. However, monitoring for the birds Descriptors is not relevant for the NIS monitoring for Descriptor 2. This is due to the fact that Descriptor 2 applies only to NIS found in the marine environment, whereas under Descriptor 1 the target is intended to reduce the risk to island seabird colonies from terrestrial non-indigenous mammal species (e.g. rat and mink).

Descriptor 3 Commercial fish and shellfish

56. The comments on the monitoring programmes for Descriptor 3 covered the following main issues. Where necessary the monitoring programme has been modified.

Commercial Fish

57. The monitoring proposals summary table included in the consultation has been amended to clarify some of the issues which were made, in particular in relation to the stocks that will be covered, the status of the EU Data Collection Framework (DC-MAP) and the UK position on criterion 3.3.

Issue raised: Support for the use of ICES assessments; however there were a number of concerns about the species which were data poor and the use of proxies in the long term.

58. ICES has released advice on its draft recommendations for the assessment of MSFD Descriptor 3, the document outlines proposed use of reference points.
http://www.ices.dk/sites/pub/Publication%20Reports/Advice/2014/Special%20Requests/EU_Draft_recommendations_for_the_assessment_of_MSFD_Descriptor3.pdf.

59. For data poor stocks, information on fishing activity (F) and spawning stock biomass (SSB) in relation to maximum sustainable yield (MSY) reference points is not generally available. In these cases, trends in indicators (survey, catch rates, etc.) and/or expert judgement can in some cases be used to provide a qualitative estimation of the exploitation status and biomass against reference point proxies. This information can be used in the Descriptor 3 assessment, when available.

60. Both Cefas and Marine Scotland Science continue to be involved in developing assessment approaches, other than age based analytical assessment, that provide a proxy for MSY.

Issue raised: Clarity was requested over which stocks are currently assessed with primary indicators (fishing mortality) and which with secondary indicators (ratio between catch and biomass index).

61. The ICES advice for each stock explains the indicators against which stock status in terms of exploitation rate and biomass or their proxies for MSY reference levels are determined, if available or how advice for management is achieved if they are not (ICES stock advice <http://www.ices.dk/community/advisory-process/Pages/Latest-advice.aspx>).

Issue raised: It was stated by one respondent that there was no consideration of monitoring of the sandeel priority main features (PMF) (which includes both *A. marinus* and *A. tobianus*). Therefore the current monitoring regimes would be insufficient for Scottish waters.

62. In the sandeel areas where there is currently an annual analytical assessment, commercial fishery data are used together with data from a sandeel dredge survey that provide a tuning index. In this case the tuning index is where data from a scientific survey are included to help inform assessments of stock size using commercial fishing catch data. In the one remaining commercial fishery area in Scottish waters, (identified as SA4), the dredge survey Marine Scotland Science undertakes in December does have extensive coverage but it cannot be used as a tuning series due to the very limited commercial activity in the area. Part of SA4 has been closed to all but a group of commercial vessels for a monitoring fishery since 2000. However, even this monitoring fishery has not taken place in some years. As a result, ICES has only advised very limited precautionary total allowable catches (TACs) for SA4 and fishing activity in SA4 is currently insufficient to provide enough data for an analytical assessment. If regular fishing activity resumes across SA4 an analytical assessment should be possible using the annual dredge survey index provided by Marine Scotland Science. No monitoring takes place in area SA7 (the only other relevant sandeel fisheries area) because there is virtually no fishing activity in that area.

63. Therefore, since sandeels in area SA4 and SA7 are exposed to little exploitation, we do not think that it is necessary to include them in the monitoring programme. If and when commercial activity increases in SA4 the need to conduct an assessment of sandeels in relation to the UK MSFD targets would be reviewed.

Issue raised: It was pointed out that there is inconsistency between text for target for fishing mortality in the Marine Strategy Part One and in the monitoring consultation document.

64. The target has not changed. The target for Fishing Mortality is “The exploitation rate of each stock is either at or below FMSY, or within the range of plausible fishing mortalities consistent with FMSY. Where data does not allow FMSY, or FMSY proxies, to be calculated exploitation of each stock will be based on the precautionary approach with limits defined by agreed proxies for sustainable exploitation.” The Marine Strategy Part One included additional text to reflect related commitments under the Common Fisheries Policy.

Issue raised: There was a suggestion that industry may be able to play a role in monitoring the status of the stocks.

65. We welcome this suggestion and would be ready to consider any proposals with our scientific advisors on a case by case basis. A recent review indicated that there is limited scope for industry to carry out regular monitoring that would add value to existing science-led stock surveys, but one such project is continuing in the South West of England as part of a wider fisheries science partnership programme. In addition, monitoring by industry can provide important and timely input for the scientists responsible for stock assessment and there have been some promising multi-stakeholder discussions on the potential for the fishing industry to help monitor wider marine biodiversity.

Shellfish

66. The monitoring proposals summary table included in the consultation has been amended slightly to take on board some of the comments received about shellfish monitoring, mainly to provide clarity over what stocks will be covered and to include details about Inshore Fisheries and Conservation Authority (IFCA) monitoring.

Issue raised: There was a general feeling of concern about the adequacy of the available data.

67. The Government recognises a number of the issues raised on this point. The majority of stock assessment models available were derived for fin-fish stocks and are not necessarily appropriate for the assessment of shellfish stocks. Defra is working with Cefas to explore alternative assessment methodologies for shellfish. These will be adopted if appropriate.

Issue raised: Do the crab and lobster stock assessments only cover fishing grounds and if so, will they only indicate status at the most productive areas.

68. The stock monitoring programme for the crustacean fisheries is based upon the EU's Data Collection Framework (as is the case with the fin-fish). These data are supplemented by additional catch sampling undertaken by IFCAs. The data sources available to Cefas for the shellfish stock assessments are derived solely from the commercial fishery and therefore can only assess the fished portion of the stocks.

Issue raised: There was concern about the role of MPAs not being included which was thought to be relevant especially shellfish such as scallops.

69. Defra will be considering with Cefas the impacts that spatial management measures (including MPAs) may have on monitoring, particularly for scallops. Where necessary the monitoring programmes will be amended accordingly.

Issues raised: There was a suggestion that industry may be able to play a role in monitoring the status of the stocks.

70. For shellfish, Cefas are seeking further collaboration with industry and other parties such as IFCAs to improve the monitoring programmes.

Descriptor 5 Eutrophication

71. The comments on the monitoring programmes for Descriptor 5 covered the following main issues. Where necessary the consultation documentation has been modified.

Issue raised: Questions on the frequency of measurements needed to provide data to address trend targets particularly regarding chlorophyll measurements.

72. Experts are following this up as the detailed Descriptor 5 monitoring programme is drawn up by the Clean and Safe Seas evidence Group. The aim is that there will be sufficient regular monitoring in eutrophication problem areas to carry out the required trend analysis. For eutrophication non-problem areas chlorophyll data are needed only if nutrient concentrations increase from anthropogenic sources. Experts indicate that satellite data and buoy measurements could also be used to provide suitable data for trend assessments.

Issue raised: One respondent suggested that fish farms cause eutrophication in Scottish waters.

73. While fish farms are a source of nutrients along Scotland's west coast and islands, they are regulated not to cause eutrophication. This is achieved through limitations imposed through the Scottish Environmental Protection Agency Controlled Activity Regulations, and the EIA. Wide scale monitoring of sea lochs for evidence of eutrophication was conducted 2001 – 2006 (salmon production has not increased since that period) and found all areas monitored to be "non-problem").

Issue raised: Issues relating to the coverage of the proposed monitoring programmes.

74. Monitoring of eutrophication-related parameters over many years has provided a good understanding of where eutrophication problems occur, which is largely in coastal waters. Coverage has been enhanced by the use of remote sensing technology which can show where chlorophyll levels are elevated over large spatial areas at a regional scale and by smart buoys, which can make continuous measurements in targeted areas. Coordination of monitoring of eutrophication-related parameters will be carried out by our Clean and Safe Seas Evidence Group which has a mandate to integrate the various eutrophication monitoring programmes that will be needed to show we are meeting our relevant MSFD targets.

Issue raised: How will the information from MSFD eutrophication monitoring be used to inform the assessment of pressures on Natura 2000 estuaries?

75. This issue will be addressed by a general action for the UKMMAS Monitoring and Assessment Reporting Group to achieve better coordination to deal with cross-cutting issues within and between the various organisations in the UKMMAS Evidence groups.

Descriptor 7 Hydrographical conditions

76. The description of the monitoring programme has been edited in response to some of the consultation comments; these are points of clarification. At this time there are no substantive changes to the proposals.

Issue raised: Support for the hydrographical condition monitoring programme.

77. The UK government gratefully acknowledges the high level of support expressed by many respondents for the current approach to monitoring of hydrographical condition.

Issue raised: How will baseline assessments and prevailing conditions be determined?

78. Baseline assessments will continue to be agreed with regulators within the existing screening and scoping process. Global changes such as climate change, sea level rise and acidification will be captured under prevailing conditions. To characterise prevailing (baseline) conditions a combination of high-quality, well-validated modelling tools and sustained observations will be used, against which we can assess whether anthropogenic activities other than climate change may compromise GES. A cascade of models from open ocean to shelf seas through to local scale models will be used, validated by many field projects and monitoring programmes. Initially these will be only hydrographic models but in the near future will also include ecosystem models. The prevailing conditions monitored and captured in Descriptor 7 are relevant to other Descriptors.

Issue raised: Concerns about additional burdens or costs and uncertainty for developers.

79. It is envisaged that existing types of monitoring required as part of the UK Marine Coastal Access Act, Marine Scotland Act and Marine Act (NI) 2013 legislation licensing conditions will fulfil the majority of the requirements for the Descriptor 7 monitoring programme. Only large infrastructure projects have the potential to impact on GES of hydrographical condition due to the assessment scale being the Celtic Sea or the North Sea. For instance, impacts from offshore renewables (wave, wind, tide) are already modelled as part of the conditions. Work on whether there is a need for additional licensing, monitoring, or assessment requirements to account for cumulative impacts is currently underway. Until such work is complete, it is not possible to comment on whether any additional requirements will be necessary.

Issue raised: Guidance for regulators and developers is needed.

80. Clear guidance for regulators and developers on how the relevant regulatory regimes will manage monitoring has been drafted. This relies on existing guidance and best practice approaches already in place and has been developed collaboratively with the Devolved Administrations.

Issue raised: Concerns that the large-scale approach will not be sufficient.

81. Small-scale alterations of hydrographical conditions are possible but these are considered within the present licensing process. Small scale changes are unlikely to have an impact on an entire MSFD regional sea (e.g. the Celtic Seas). Activities such

as aggregate extraction will have licence conditions along with cumulative and in-combination assessments.

Issue raised: Are programmes coordinated and collaborative?

82. A large number of national and international collaborative programmes collect data that can be used to monitor the back-ground hydrographical conditions. However, whilst some research programmes may provide important information they are not long-term monitoring programmes for determining trends. We welcome the suggestion to adopt international standards for monitoring that will enable cross-border comparisons. Wherever possible, data storage, management, quality control and quality assurance will adhere to international standards.
83. Detailed assessment criteria are still in development by the European Joint Research Council and will be taken into account in due course.

Issue raised: Use of the term “hydrographical condition”.

84. The term ‘hydrographical condition’ was decided by the European Commission and cannot be changed in the UK documentation.

Issue raised: Will cumulative impacts be considered?

85. Work is underway to determine how cumulative impacts will be considered because it is possible that a number of developments may collectively have an incremental effect. It is anticipated that cumulative impacts are most effectively assessed and monitored via existing licensing procedures (e.g. assessed via EIAs, or Strategic Environmental Assessments). Such assessments should identify whether the proposed project is likely to fundamentally change the hydrographic conditions either on its own or cumulatively with other developments. The need for additional assessment and monitoring over-and-above existing requirements will be determined proportionately.
86. The methodology for assessing cumulative impacts is currently under development. This will identify whether additional monitoring or assessment (e.g. through modelling) requirements may be needed.

Descriptor 8 Contaminants

87. The comments on the monitoring programmes for Descriptor 8 covered the following main issues. Where necessary the consultation documentation has been modified. Several specific questions have been followed up directly by telephone as the questions either needed clarification, or were best addressed by this approach.

Issue raised: Questions on the scope of imposex monitoring around the UK and whether it was still necessary now that TBT has been banned as an antifoulant.

88. The description of the Descriptor 8 monitoring programme has been modified to show that imposex monitoring is also being carried out in Scotland. It is felt necessary to carry out one final imposex survey to confirm the current evidence that the measures taken to enforce the ban on TBT as an antifoulant have worked effectively.

Issue raised: Applicability of particular standards, indicators and background concentrations for the monitoring of contaminant concentrations in sediments and biota.

89. The standards, indicators and background concentrations used in the UK programmes will be those agreed by the OSPAR Joint Assessment and Monitoring Programme, or the EU Environmental Quality Standards Directive.

Issue raised: Proposal to use bird egg monitoring in the North Sea (as done in the WILDCOMS programme) to improve the understanding of contaminant distribution and trends.

90. The feasibility of this proposal will be discussed by the Clean and Safe Seas Evidence Group.

Descriptor 9 Contaminants

91. The comments on the monitoring programmes for Descriptor 9 covered the following main issues. Where necessary the consultation documentation has been modified.

Issue raised: There needs to be provision within Descriptor 9 for designated shellfish monitoring and classification.

92. The Food Standards Agency carries out some shellfish testing for chemical contaminants in Scotland and Northern Ireland, and is currently planning to extend this to England and Wales. Links between the MSFD and designated shellfish monitoring and classification have been set out in a specific MSFD fact sheet 6.

<https://www.gov.uk/government/policies/protecting-and-sustainably-using-the-marine-environment/supporting-pages/implementing-the-marine-strategy-framework-directive>.

Issue raised: Coordination of methods between national and international programmes needed for efficiency and to avoid duplication of effort.

93. We believe that coordination aspects are already well covered. The description of each Descriptor's monitoring programme has a section on coordination with other organisations and countries, and how most of the indicators are being monitored using common monitoring methods and standards through the OSPAR joint Assessment and Monitoring Programme. For Descriptor 9, OSPAR has discussed the feasibility of coordinated monitoring of seafood, and whilst some countries considered that there was scope for further cooperation, it was felt that this could best take place in the context of on-going EU projects such as the Joint Monitoring Programme.

Issue raised: Concerns expressed about contaminants entering the environment around fish farms and the food chain via aquaculture.

94. Recent studies show that contaminants arising from fish farms and aquaculture are not a significant problem. Copper and Zinc concentrations are elevated only very locally in relation to salmon cages. Whilst the scale of salmon aquaculture is predicted to expand and thus the area of contaminated sediment may increase, the likelihood of additional copper and zinc getting into commercial food chain is thought to be negligible. Shellfish

production does not involve the input of feed (the main potential source of contaminants), and thus the predicted increase in production should not result in increased environmental concentrations of contaminants. For more details, see Russell et al. (2011)⁷.

Issue raised: Questions on the frequency and compliance rate of the proposed programmes.

95. The monitoring frequencies will be based on the findings of a number of existing and planned surveys of seafood from various representative fishing grounds around the UK designed to establish the risks of regulatory food standards being exceeded.
96. Where concentrations exceed regulatory levels, further investigations will take place and appropriate action taken.

Descriptor 10 Litter

97. Marine litter is a new area of monitoring and assessment for the UK and there is research and development taking place for many aspects of it. Surveillance monitoring will gather baseline data to inform future development of the monitoring programmes. The description of the monitoring programme has been edited in response to some of the consultation comments; these are points of clarification. At this time there are no substantive changes to the proposals.

Issue raised: Support for the Marine Conservation Society's (MCS) and OSPAR beach litter programme citizen involvement.

98. The UK government gratefully acknowledges the level of support expressed by many respondents for the MCS beach litter programme. It is important to note that only the OSPAR beach survey data will be used for MSFD purposes, which is a sub-set of the MCS database.

Issue raised: Several comments were made that there are limitations in the monitoring programmes, e.g. insufficient geographical coverage or the methods are not fully developed.

99. For beach litter the selection of UK OSPAR-designated beaches has been based on a set of defined criteria so as to be representative and indicative for beach litter trend assessments in the OSPAR region. The beach litter survey has been developed scientifically and has been undertaken for many years. The assessment methods have been defined and agreed by OSPAR Contracting Parties. The overall assessment is based on (a) a trend in specific items, and (b) a state assessment using total abundance. The trend assessment is considered to be sensitive and will also give clear information for management purposes on specific items that can be managed to reduce the total amounts of marine litter and the results of any measures taken. This will aid the

⁷ Russell et al. (2011) Persistent organic pollutants and trace metals in sediments close to Scottish marine fish farms. *Aquaculture*, 319, 262–271

reduction in total abundance of litter. The current programme is seen as a starting point. The selection and number of beaches could be improved if this is considered necessary in the light of results achieved and where the collection of additional data can be shown to add sufficient value to our understanding.

100. For litter in the water column this surveillance target has only been set for the North Sea because this is the distribution and natural range of northern fulmar species. Sampling programmes for beached dead fulmars have been established in a number of locations all around the North Sea, most of them as part of existing long-term Beached Bird Surveys. The data that are gathered from surveillance monitoring will help inform what, if any, future research projects or changes to monitoring are necessary, e.g. investigating the uptake of litter by fish or invertebrates. There are investigations in OSPAR looking at ingestion of plastics by other species/functional groups (e.g. fish) in addition or as an alternative to fulmars, to increase the geographic relevance of the common indicator.

Issue raised: There are gaps in knowledge, proposals and supporting information.

101. It is recognised that there are gaps in knowledge for marine litter and several programmes are being funded to fill the gaps. Some of the key areas of investigation for these programmes are: sources of litter, inputs, distribution, monitoring methods, public behaviour changes and potential impact of litter. Furthermore there are EU-wide projects looking at trans-boundary issues, 'ghost'-fishing and wider aspects of the marine litter issue, e.g. the MARLISCO⁸ project is improving public awareness, dialogue and responsibility. There are also pilot projects underway in the UK and Europe considering sources, monitoring and impacts of micro-litter. Once results are available a cost-effective risk-based judgement will be made in relation to micro-litter monitoring.

Issue raised: How will GES be met when two of the indicators have only surveillance targets?

102. Two of the indicators, benthic litter and stomach contents of fulmars, have surveillance targets because of the lack of one of the following: baseline data, agreed methods, documented protocols, assessment criteria, or regional harmonisation. Whilst the OSPAR programmes for these indicators are in development the UK proposes to only use these as surveillance indicators. The surveillance programmes are designed to gather the necessary data and information to progress the targets. Once there is good consensus on methodologies and a body of baseline data has been collected for each programme it may be possible to consider more precise targets.

Issue raised: Is there sufficient coordination within the UK and regionally?

103. The UK Marine Litter Group (which is part of the UKMMAS) ensures the Devolved Administrations and scientific advisors are involved in coordinating the MSFD marine litter monitoring programme across the UK. The UK is represented and leading on most of the Descriptor 10 indicators in the EU Technical Sub-Group and the OSPAR Marine Litter group. The recommendations and guidelines coming from these groups are fully considered in the development of our national marine litter programmes.

⁸ <http://www.marlisco.eu/>

104. Data storage and access are also coordinated. Data collected for this programme in England, Wales and Scotland are held within a database at the MCS and in Northern Ireland by Keep Northern Ireland Beautiful. Data are reported from these repositories to OSPAR. Information about the programme administered by the MCS is logged in the UK Directory of Marine Observing Systems (UKDMOS).

Issue raised: What will be done about marine litter?

105. This is a separate issue from the monitoring programmes. A programme of measures is currently being developed by experts, Devolved Administrations and the UK government. This will determine what cost-effective measures might be needed to reduce levels of marine litter.

Issue raised: Suggestions that existing initiatives that could contribute data.

106. The Fishing For Litter campaign is considered a measure for reducing marine litter. This and volunteer-based schemes have been considered but have been found to have too many variables to provide sufficient level of continuity to constitute a scientific monitoring programme. Other suggestions for monitoring programmes have been noted and will be considered depending on the extent to which the planned monitoring programmes are found to be sufficient and cost-effective.

Descriptor 11 Underwater noise

107. The description of the monitoring programme has been edited in response to some of the consultation comments; these are points of clarification. At this time there are no substantive changes to the proposals.

Issue raised: Support expressed for the proposed monitoring programmes.

108. The UK government gratefully acknowledges the support expressed by several respondents for the proposed approach to monitoring underwater noise.

Issue raised: How will sound data be stored?

109. The Noise Registry is under construction and will comply with international data standards. The design of the registry has been a collaborative process so that it will best meet the needs of regulators and data-holders. The spatial scale at which the data will be aggregated is set at oil licensing block level (these are sub-divisions of the sea measuring approximately 10 x 20 km, forming part of a quadrant), with adjustments to account for complexity near the coast. The registry will be linked to the UK Department of Energy and Climate Change (DECC) oil and gas activity database. The registry may become the model used by other Member States through the UK's involvement in EU Technical Sub-Group on Noise (TSG-Noise) and the OSPAR Noise Group.

110. A database is required for ambient and its location remains under consideration. An international location may be more appropriate given the requirement in the Directive to cooperate regionally with other member states, through international bodies.

Issue raised: How will the data be used?

111. The basic premise of the noise registry is the collation of information on the distribution and timing of impulsive sound pressures from multiple sectors, as a prerequisite to estimating environmental risk. Following the guidelines of the TSG-Noise an integrated approach involving data management, impacts, methodologies and technologies used to monitor and reduce underwater noise will be adopted to ensure that GES is achieved. For locations where the registry suggests 'hotspots' of impulsive sound (singularly or cumulatively) the data lend themselves for evaluation alongside data on the distribution and abundance of sensitive species (where such data are available). It is likely that such distributions will be modelled and calibrated with data collected for any particularly critical parts of the model; no further biological data will be collected concurrently.

Issue raised: Ambient noise is less well defined than impulsive sound.

112. The UK is developing a monitoring and modelling programme to characterise trends in ambient noise in seas around the UK. It is difficult to monitor ambient noise from permanent moorings because self-noise and flow noise are a problem on many buoys and therefore ambient noise will be modelled based upon measurements. The UK is working with its neighbours to ensure efficiency in this work. If operational noise proves to be a significant source at the two 1/3 octave bands, to which the relevant MSFD indicator applies, then it will be considered alongside other sources. These octave bands are based on the bands at which shipping noise dominates and manufacturers of renewable devices are well aware of the 1/3 octave bands of relevance. It is not the plan to assess the ambient noise levels of a region outside the specified bands. No operational noise monitoring is planned for MSFD by the UK or Devolved Administrations. There is no EU requirement for industry to monitor ambient noise.

Issue raised: Why have particular sound levels and ranges been chosen?

113. Certain parameters have been determined by the European Commission Decision⁹. For example, the frequency range 1 kHz–10 kHz was set by the Commission with the reasoning that higher frequencies do not transmit as far and the TSG-Noise was looking for indicators, not a comprehensive description. Similarly for trends in ambient noise, the Commission determined that the 1/3 octave bands 63 and 125 Hz (centre frequency) (re 1µPa RMS; average noise level in these octave bands over a year) should be measured. The Commission Decision currently limits Descriptor 11 to noise monitoring only, and not other sources of energy introduced into the marine environment such as thermal energy, light or electromagnetic fields.

Issue raised: What about thresholds, targets and management measures?

114. The UK is basing its ambition around the agreed content of the TSG-Noise Guidance, which has also been adopted by OSPAR and as such forms the basis for regional sea scale considerations for MSFD-related underwater noise issues. The UK will set targets once it is clear that there is a need, but firstly we need to determine what the current conditions are (i.e. the impulsive sound registry and the outline for ambient

⁹ Commission Decision of 1 September 2010 on criteria and methodological standards on good environmental status of marine waters 2010/477/EU <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2010:232:0014:0024:EN:PDF>

noise monitoring) so that the nature and scale of the problem can be defined to inform the need, definition, feasibility and level of such thresholds. It follows that it is also too early to determine at this stage whether management measures will be needed.

Issue raised: What about the effects of particle velocity?

115. Particle velocity is only an important factor in the near field around noise sources. Beyond that, it can be directly related to sound pressure. The near fields around sources are small in comparison to the area affected by sound pressure. It is therefore not a priority for consideration by the UK in implementing the MSFD. The various European groups concur with this view. There is EU funded work investigating levels of underwater sound, particle motion, vibration and electromagnetic fields, and the UK will consider the outcomes.

Issue raised: There is a need for standardisation of noise monitoring.

116. The UK government recognises the need for standardisation in several aspects of the noise monitoring process, but great care is needed to avoid taking a poor standardisation decision and inhibiting further development of thinking. Standardisation comes with maturity and is not wise to impose on immature systems. The UK will use the TSG Guidance and the National Physics Laboratory guidelines for the in-situ measurement of underwater noise (<http://www.npl.co.uk/upload/pdf/gpg133-underwater-noise-measurement.pdf>) which includes advice on standardisation and UK scientists are currently working to ensure underwater noise measurements are standardised.

Annex A – List of consultation questions

Question 1:

- Are the proposed monitoring programmes for this Descriptor sufficient to meet requirements of the Directive, bearing in mind the current limitations in our knowledge base?

Question 2:

- Are the proposed monitoring programmes for this Descriptor sufficient to guide progress towards the achievement of GES, and the related targets, as set out in UK Marine Strategy Part 1?

Question 3:

- Subject to the answer to Question 2, are any additional monitoring programmes needed in order to achieve GES and the related targets for this Descriptor?

Question 4:

- Do you have any suggestions for additional or more effective monitoring programmes?

Annex B – List of respondents

- ABPmer
- APEM Limited
- Atlantic Research Coalition
- Atlantic Salmon Trust
- Bass Anglers Sportfishing Society
- BIF
- British Ports
- British Sub-Aqua Club
- City and County of Swansea
- Conwy County Borough Council
- Cornwall Seal Group
- Danish Nature Agency
- Department of Agriculture and Rural Development, Fisheries & Environment Division
- Department of Agriculture, Food & the Marine
- EDF ENERGY
- English Heritage
- Firth of Clyde Forum
- Gardline Environmental
- Institute for Archaeologists
- International Fund for Animal Welfare
- International Navigation Association (PIANC)
- Isle of Man Government Department of Environment, Food and Agriculture
- Marine Biological Association
- Marine conservation Northern Ireland
- Marine Management Organisation
- Marine Planning Consultants (a Gardline company)
- MARINELife
- National Federation of Fishermen's Organisations
- National Museums Northern Ireland
- National Oceanography Centre
- Natural England
- Natural Environment Research Council (NERC)
- Natural Resources Wales
- North Eastern Inshore Fisheries & Conservation Authority
- Northern Ireland Marine Task Force
- Northumberland Inshore Fisheries & Conservation Authority
- Oil & Gas UK.
- ORCA
- Plymouth Marine Laboratory
- Port of London Authority
- Royal Yachting Association
- RSPB

- Scottish Environment Protection Agency
- Scottish Fishermen's Federation
- Scottish Marine Institute
- Scottish Natural Heritage
- Scottish Renewables
- Scottish Salmon Producers Organisation
- Scottish Water
- Seagull Fishing Tackle
- Shellfish Association of Great Britain
- Sir Alister Hardy Foundation for Ocean Science (SAHFOS)
- Southern Water
- Tara Seal Research
- Taw Torridge Estuary Forum
- The Crown Estate
- The Wildlife Trusts
- Trinity House
- UK Chamber of Shipping
- United Kingdom Hydrographic Office
- University of Hull
- Welsh Water
- Wildlife and Countryside Link, Scottish Environment LINK, Wales Environment Link and the Northern Ireland Marine Task Force
- World Society for the Protection of Animals WSPA UK
- WWF-UK