Comments from the natural environment research council on 'our seas – a shared resource'

Introduction

The Natural Environment Research Council (NERC) is one of the UK's seven Research Councils. We fund and carry out impartial scientific research in the sciences of the environment, and train the next generation of independent environmental scientists. Our mission is to gather and apply knowledge, create understanding and predict the behaviour of the natural environment and its resources, and communicate all aspects of our work.

In preparing these comments NERC consulted with its Marine and Earth Sciences community. NERC's Research and Collaborative centres which contributed input include the British Geological Survey (BGS), the National Oceanography Centre Southampton (NOCS), the Plymouth Marine Laboratory (PML) and the Proudman Oceanographic Laboratory (POL). Further details of NERC's Research and Collaborative Centres are available at www.nerc.ac.uk.

Comments

NERC welcomes the publication of 'Our Seas – A Shared Resource' and the opportunity to comment on the areas highlighted. The vision is very ambitious and, if it can be achieved, is something that UK society will be proud of.

1.0 Why we need marine objectives

1.1 We welcome and support the concept of high level objectives as a framework, and agree that they provide a start to the process of preparation of integrated marine policy statements across the UK.

1.2 There is a risk that they are so generic that it will be difficult to judge how useful they may be in active decision making and prioritization of issues.

1.3 Although it is stated that they will *'underpin the UK approach to negotiation and implementation of European and international marine policy'* the objectives do not give enough emphasis on European Regional Seas and international waters.

1.4 We welcome the reference to pulling together a list of commitments, and add that this should also include legal responsibilities and who is responsible for them.

1.5 Will the objectives also cover British Overseas Territories? If so there are considerable financial implications in ensuring that these objectives can be implemented and enforced in remote locations.

2.0 What success would look like

2.1 We endorse the objective of clean, safe, healthy, productive and biologically diverse oceans and seas within the context of a thriving offshore economy. We welcome moves to integrate the management of our seas across the devolved administrations, and indeed, think it imperative that we integrate with our neighbours across the adjacent seas – we can bolster the international dimension by saying that the UK will have taken an active role in international monitoring programmes through, for example the Global Earth Observation System of Systems (GEOSS) and Global Monitoring for Environment and Security (GMES).

2.2 The statement 'Carbon capture and storage will be underway' is a very cautious vision for something that is urgently required as a cornerstone of international attempts to mitigate climate change and ocean acidification due to high CO2. We believe the scientific community would hope that this technology would be demonstrated in the next 5-10 years and widely implemented within the next 20 years in a sustainable way. What we mean here is that we must ensure that the marine resources and ecosystem services are taken into account during site selection (as well as geological and economical factors) to ensure minimal leakage risk. However, should there be a leak, government must ensure that it can be detected and that the impact and recovery of the ecosystem is understood.

2.3 The statement 'Ecosystems will be resilient to environmental change…' seems rather strange. What is the definition of 'ecosystem' in this context? If defined at the broad level of the whole of the UK marine area, then it is a good but perhaps meaningless aspiration. Ecosystems are made up of different habitats and groups of organisms, some of which are naturally resilient but some are not, and no change in management will make them resilient - especially with the onset of climate change, ocean acidification and the impacts of hazardous chemicals. Others are vulnerable to, or impacted by different anthropogenic pressures and are no longer resilient. There is an assumption that ecosystem recovery will happen because of the protection mechanisms that will be in place. This may not be sufficient – recovery may have to be pro-actively managed, new ownership models of fish stocks may be required to encourage stock abundance. Presumably the intention of this statement was to introduce management strategies to aid recovery and restore resilience so some rewording would make this clearer to the reader.

2.4 We would add that there should be in place a comprehensive National Seabed Database that is used to underpin planning decisions.

3.0 Marine Objectives

3.1 Achieving a sustainable marine economy – This is a welcome objective for an island nation, but cannot be done in isolation – the UK and devolved Governments will have to work closely with one another and our European neighbours because bad practice in one area of ocean can damage resources further away. We endorse the increased development of our marine resources, and look forward to a strong marine renewable energy programme and extensive carbon capture and storage. We would also expect increased extraction of marine aggregates, which will probably form a vital and growing

resource for onshore developments and coastal defences. We will also expect to see increased aquaculture production, and would highlight the success in Norwegian waters in developing increased productivity and decreased environmental impact by basing developments on detailed studies of the marine physical and chemical environment. The statement could read "Long-term wealth is generated by the responsible *and sustainable* use of the marine environment and its resources."

3.2 Ensuring a strong, healthy and just society –. Increased public awareness and understanding of the marine environment, including the current benefits that people already derive from it, is required. The current emphasis is very strongly on gaining new benefits; these should be in addition to a greater understanding and perception of the current benefits, e.g. economic and recreational, and the potential increased benefits that would accrue naturally from a cleaner and healthier marine environment. We would also welcome a stronger statement on the need for marine science education. The final bullet on defence could add a reference to international safety, security (referring to GMES) and stability.

3.3 Living within environmental limits – It is an ambitious and probably unachievable goal to halt the loss of biodiversity in the context of a changing environment in response to the impacts of climate change. Indeed, within the context of 20 plus years considered in this document, it may be unrealistic to try to maintain biodiversity and habitats in the light of potentially high sea level rise, coastal erosion, temperature changes and ocean acidification. Biodiversity, if it recovers, will be different to the ecosystem that existed in the past. We need to be able to promote the development of marine resources even, in some cases, at the expense of some local habitats and heritage, particularly where the lack of uniqueness and general quality are factors. There needs to be a stronger emphasis on recovery and restoration of biodiversity and of pristine habitats or ecosystems. The statement could read:

- "Biodiversity is protected, conserved and recovered where appropriate ***and wherever possible."***

3.4 Promoting Good Governance - This should encompass a local, regional and international dimension. The government will need to continue to exert influence and pressure to rationalise existing policies, legislation and management across Europe so that anomalies between existing and new policies can be readily resolved e.g. legally binding conservation commitments in UK waters can conflict with CFP priorities and provisions. Marine ecosystems are extremely dynamic; planning human use of the marine environment needs to take this dynamism into account and incorporate a temporal as well as spatial perspective. The environmental costs and benefits of human use of the marine environment must be identified and balanced against social and economic costs and benefits. Marine spatial planning can only be effective if we have a sound knowledge of our marine resources. At this stage we believe that we do not have the detailed information in all areas to make effective development decisions, and it is likely that poor decisions to develop

or not develop may be made on the basis of poor information. For example, wind farm approval may be given on a sand or gravel bank that precludes the development of major aggregate resources, or a development may be rejected because we do not know the significance of an historic site, which may be far from unique.

3.5 Using sound science responsibly – Reference should be made to 'sound evidence and *continuous* monitoring' to underpin effective marine management and policy development. It is getting clichéd to talk about how we know more about the surface of the planets than we do about our own seabed. However, in many areas it is certainly true, as satellite technology has yet to penetrate the oceans. We believe that without a sound understanding of our marine environment, and knowledge of the resources and biodiversity of our seas, we cannot hope to develop our marine resources efficiently and sustainably. For this reason we consider it essential that we undertake a National seabed survey using modern techniques, such as multibeam, to provide the important baseline data that is a pre-requisite to the objectives.

3.6 A bullet could be added on seeking international consensus and cooperation.

4.0 Delivering the objectives

4.1 We agree that the approach taken to deliver high level marine objectives will vary in different parts of the UK according to national priorities and situations, but it is important that there is some level of coordination so that incompatible activities can be managed and discussed across borders. This could be a role for the Marine Science Coordination Committee (MSCC).

4.2 If the Scottish and UK Marine Bills turn out to be quite different, the requirement for a body able to reach compromise solutions is reinforced.

4.3 Future European legislation may require Regional Seas management systems that cut across UK member-nation borders.

4.4 Can the interaction between the MSCC and the UK Marine Monitoring and Assessment Strategy (UKMMAS) be clarified?

5.0 Gaps in the Objectives

5.1 We would like to see a clear marine objective to undertake a multidisciplinary National Seabed Survey to underpin sustainable development of our marine resources.

5.2 We would like to see an increased emphasis on marine science within the national curriculum at schools.

5.3 Returning to the question of British Overseas Territories – how will objectives be delivered? The proposed UK and Scottish Marine Management Organisations have limited geographical remits.

Natural Environment Research Council
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