

Marine Monitoring Handbook
March 2001



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Caroline Turnbull and Malcolm Vincent



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Joint Nature Conservation Committee
English Nature
Scottish Natural Heritage
Environment & Heritage Services (DoE NI)
Countryside Council for Wales
Scottish Association for Marine Science

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Preface

The 1990s saw a ‘call to action’ for marine biodiversity conservation. The global Convention on Biological Diversity, the European Union’s Habitats Directive, and recent developments to the Oslo and Paris Convention have each provided a significant step forward. In each case marine protected areas are identified as having a key role in sustaining marine biodiversity.

The Habitats Directive requires the maintenance or restoration of natural habitats and species of European interest at favourable conservation status, with the management of a network of Special Areas of Conservation (SACs) being one of the main vehicles for achieving this. Among the habitats and species specified in the Annexes I and II of the Directive, several are marine features and SACs have already been selected for many of these in the UK. But to manage specific habitats and species effectively there needs to be clear understanding of their distribution, their biology and ecology and their sensitivity to change. From such a foundation, realistic guidance on management and monitoring can be derived and applied.

One initiative now underway to help implement the Habitats Directive is the UK Marine SACs LIFE Project, involving a four year partnership (1996–2001) between English Nature, Scottish Natural Heritage, Countryside Council for Wales, Environment and Heritage Service, Joint Nature Conservation Committee, and Scottish Association for Marine Science.

The overall goal of the Project is to establish management schemes on 12 of the candidate marine SAC sites. A key component of the Project is to assess the interactions that can take place between human activities and the Annex I and II interest features on these sites. This understanding will provide for better management of these features by defining those activities that may have a beneficial, neutral or harmful impact and by giving examples of management measures that will prevent or minimise adverse effects.

Task 3.2 of the UK Marine SACs project set out to ‘identify and develop appropriate methods for recording, monitoring and reporting natural characteristics and conditions of Annex I/II interests and relevant environmental factors’. A key output of Task 3.2 is a ‘published book on monitoring methods and procedures’ to be used as guidance by the UK government’s statutory nature conservation agency staff and their key partners in drawing up monitoring schemes for European Marine Sites. The *Marine Monitoring Handbook* fulfils this requirement.

The *Marine Monitoring Handbook* addresses the principles behind, and the procedures for, monitoring Annex I habitats, and selected Annex II species, within marine SACs in British waters to assess their condition in accordance with the relevant requirements of the Directive and the UK’s common standards for site monitoring.

The *Marine Monitoring Handbook* provides guidance on the different options and their relative costs and benefits and describes the current best practice for monitoring Annex I habitats and for the bottlenose dolphin, grey seal and common seal within marine SACs, to assist in the assessment of their condition. It draws on the information provided by the field trials undertaken under Task 1.2 of the UK Marine SACs project to ensure all advice has a sound practical basis. The Handbook is intended to provide a toolkit for marine site monitoring, enabling those carrying out monitoring to select and use appropriate methodologies. It is not prescriptive about the nature of the monitoring required but enables good monitoring decisions to be taken in the light of resource availability and other practicalities.

Dr Malcolm Vincent
Projects Director
Joint Nature Conservation Committee

Acknowledgements

Many people have assisted in the production of the Handbook.

Dr Keith Hiscock (Marine Biological Association) initiated the project and oversaw the production of the first version in 1997. Eleanor Murray (English Nature) further developed the Handbook during the first two years of the UK Marine SACs Project.

The Marine Monitoring Group (Martin Bradley, Environment and Heritage Service Northern Ireland; David Connor, JNCC; Janet Khan, - Scottish Natural Heritage; Eleanor Murray, English Nature; and Bill Sanderson, Countryside Council for Wales) put considerable time and effort into the whole production of this Handbook.

John Torlesse, the UK Marine SACs project co-ordinator, and Malcolm Vincent (JNCC) provided comments on earlier draft texts, and much-needed encouragement throughout the preparation and production of this volume.

The following people provided comments on the draft text: Eamonn Kelly and Ian Reach (JNCC), Paul Brazier, Rohan Holt and Mandy McMath (Countryside Council for Wales), Paul Gilliland (English Nature), and John Baxter, Ben James and Alexander Downie (Scottish Natural Heritage).

Emily Strong (English Nature) started the revision of the procedural guidelines and did much of the initial literature research. Kate Bull (JNCC) copy-read the text and provided considerable assistance with the final production.

Contact points for further advice

The source of advice will depend on the nature of the query. In general:

- For clarification of any points in the text in this Handbook, queries should be addressed to the authors who are listed under each section, including the Procedural Guidelines;
- General queries, queries of a UK nature, or advice on common standards monitoring for marine SACs should be addressed to Jon Davies (JNCC); or
- Any query specific to one of the countries of UK should be addressed to the relevant person on the Marine Monitoring Group (see Acknowledgements above).

Preamble

Development of the Marine Monitoring Handbook

While the monitoring of terrestrial protected areas in the United Kingdom has a long history, the monitoring of protected marine areas has been limited to a very few localities. As a result there has, to date, been no single volume available which provides guidance on the monitoring of marine protected areas. The selection and, in due course, designation of marine Special Areas of Conservation (SACs) under the EC Habitats Directive, has highlighted the need for comprehensive guidance on the monitoring of the marine environment.

The Marine Monitoring Handbook is a stage in the development of such comprehensive guidance, and has been developed by the *UK Marine SACs project* through a series of literature reviews, workshops and practical trials. The overall approach to monitoring taken in the Handbook is that adopted by the UK nature conservation agencies in their Common Standards for Monitoring of designated sites. The Handbook utilises this approach to analyse the possible monitoring requirements of marine protected areas designated as SACs, summarises the principles of good monitoring practice, and analyses the appropriateness of available monitoring techniques. In addition, Procedural Guidelines have been prepared for a wide range of techniques to assist practitioners to carry out monitoring.

The Handbook has been organised in sections at different levels of detail designed to offer assistance to a range of users, from those who need to be aware of the general approach to be taken in marine monitoring, to those who will need to design, commission, or undertake the monitoring. This organisation of the Handbook is summarised in Figure i.

The Handbook is a toolkit for the monitoring of marine SACs. It does not attempt to prescribe monitoring programmes for particular features listed on Annex I or Annex II of the Habitats Directive. The optimum type and level of monitoring on sites across the SAC network has still to be determined, and this is likely to be an important component of future work within the UK.

Furthermore, as our practical knowledge of monitoring increases, and the marine monitoring requirements are addressed in greater detail within the European Union, the guidance set out in the Handbook is likely to change. The Handbook should, therefore, be considered as a ***live working document***.

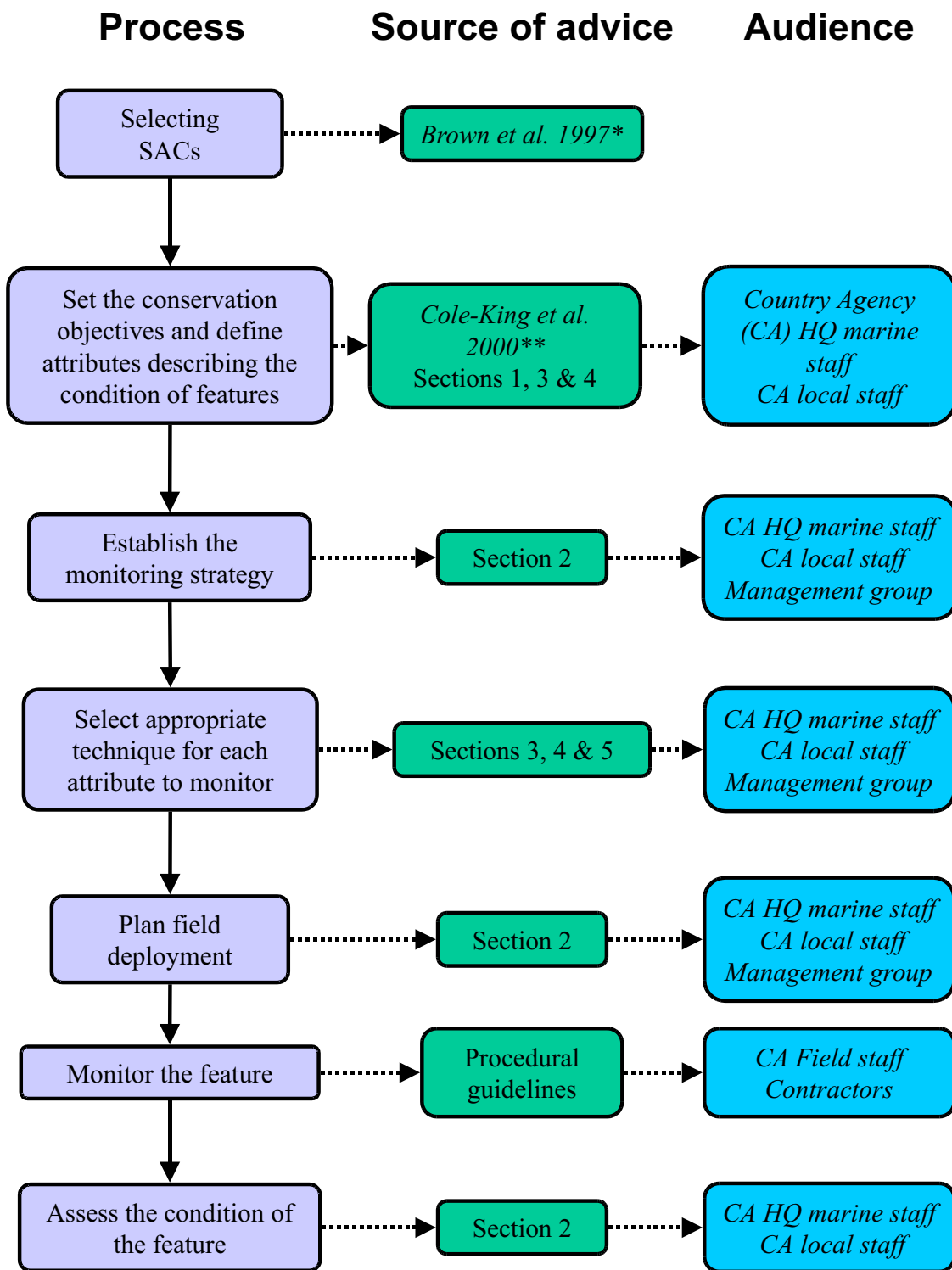
Future progress of the Marine Monitoring Handbook

During 2001, further work will be carried out to improve the coverage and content of the Handbook. In particular:

- we will increase the number and range of Procedural Guidelines to cover all the techniques listed in Section 6 of the Handbook;
- we will revise Sections 3 and 4 of the Handbook, taking account of further work to identify the most cost-effective design of monitoring programmes for particular Annex I habitats and Annex II species, and the level of skills needed to carry out the work;
- we will improve the level of guidance in relation to Annex II species;
- we will provide a glossary of terms and a bibliography divided by topic.

The Marine Monitoring Handbook will be maintained on the JNCC Internet site (<http://www.jncc.gov.uk>), and this electronic version will be the most up-to-date copy available. Modifications to the Handbook, following the further work referred to above, will be incorporated into this version. We will provide a 'notice board' on this website to enable users to provide feedback on the Handbook. A mechanism, probably e-mail, will be established to alert users when new material, or revision of existing material, is published.

Comments on this text, and suggestions for improvement, will be welcomed. All comments should be sent to Dr Jon Davies at JNCC (Jon.Davies@jncc.gov.uk) and, if necessary, they will be incorporated into later electronic versions.



* Brown, A E, Burn, A J, Hopkins J J and Way, S F (1997) *The Habitats Directive: selection of Special Areas of Conservation in the UK*. JNCC Report 270. Joint Nature Conservation Committee, Peterborough.
 ** Cole-King, A (In prep.) *UK Marine SACs Project: Setting Conservation Objectives for marine SACs*.

Figure i An overview of marine SAC monitoring, showing the relevant sources of advice in the Marine Monitoring Handbook (together with other published texts) and the anticipated readership. Country Agency - CA: UK Government's Conservation Agencies. Management group: most marine SACs will have a co-ordinating group of representatives from local relevant authorities.