

**Local Record Centres
and marine data**

Guidelines on data management



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The National Biodiversity Network (NBN) is a partnership of local and national custodians of wildlife information providing access to all within a framework of standards.

These guidelines were prepared as a contribution to the development of the NBN as part of the NBN's Linking Local Record Centres (LRCs) Project. It is part of a range of guidelines prepared for LRCs and their partners.

The Wildlife Trusts are leading the Linking LRCs on behalf of the NBN. This project is funded by Countryside Council for Wales; English Nature; Scottish Natural Heritage; The Esmeé Fairbairn Charitable Trust and The Wildlife Trusts.

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1 Background

As with terrestrial data, users of marine biological data include bodies operating at UK, national and local levels. Important users of marine data include the statutory nature conservation agencies, local government and voluntary organisations. These guidelines have been produced in response to the need expressed by Local Record Centres for guidance on how they can engage in managing marine data and supplying information products and services to these users.

The guidelines consist of a series of recommendations on how LRCs may operate in this field. The recommendations cover core aspects of LRC activities including; data standards and management, the provision of services to volunteer recorders and relationships with the National Biodiversity Network and holders of UK data-sets. An analysis of current local uses of marine data and constraints experienced by their users is provided in Annex 1. The recommendations are for guidance only and the specific roles and functions of LRCs should be decided at the level of each individual LRC in consultation with its users.

When managing and disseminating marine data an LRC should apply all its standard policies and procedures. These guidelines are, therefore, only a summary of the issues to be considered. Further guidance on establishing LRCs is provided in *Developing a Local Record Centre*, The Wildlife Trusts / NBN, 1999 and guidance on running an LRC is provided in *Running a Local Record Centre*, The Wildlife Trusts / NBN, 2001.

The guidelines were produced in consultation with a wide range of organisations involved in collecting, managing and using data on marine species, biotopes and sites. Annex 2 lists the bodies and organisations consulted.

2 Data management and supply

2.1 Background

There is considerable and growing demand for data on marine biodiversity from a variety of users, many of whom are also users of data on terrestrial species, habitats and sites. There are currently many sources and managers of marine biological data. These data tend to be collected for specific purposes and few data-sets are very comprehensive. Many users of marine biological data currently experience considerable difficulty in accessing data and identify LRCs as part of the solution to this. The principal uses of marine biological data are set out in Annex 1.

Sectors that collect and manage marine data include:

- ◆ Government conservation and environment agencies
- ◆ regulatory and advisory bodies
- ◆ commercial sector
- ◆ academic bodies
- ◆ non-governmental organisations
- ◆ local and national public participation projects

LRCs can play a considerable role in improving access to local marine data that have been collected by professionals, such as government agencies, research institutes and consultants, and by voluntary recorders and the public.

Many professionally collected data-sets cover extensive geographical areas and their management will generally be beyond the capacity of individual LRCs. Such data include offshore fisheries data collected by government.

2.2 Recommendations

- ◆ LRCs should develop their capacity to collate, manage and supply data on marine species and biotopes from the High Water mark to a distance offshore determined by the needs of their users.
- ◆ Priorities for data management and the provision of information products and services should be determined at the local level by LRC users.
- ◆ As with data on the terrestrial environment, LRCs should aim to offer a professional data management service to users of marine data.
- ◆ Through collating and analysing marine data, LRCs should identify gaps in data and seek to influence data collection.
- ◆ Water quality and other non-biological data such as substrate conditions are required by some key LRC users and can provide useful context on biotopes. However, LRCs should consider their capacity to manage these data and the level of demand before doing so.

- ◆ LRCs should aim to make all data they manage available to all data users and should set out in written agreements with data suppliers any conditions that the owners of data place on their use.

3 Data processing and promoting standards

3.1 Background

Many marine data are held in scattered locations and many important data users experience considerable difficulty in locating data-sets. This is particularly true for data beyond 12 nautical miles, but even for coastal and near-shore data much time and effort is currently expended by users in simply trying to determine what data have been collected and then trying to locate them.

There have been attempts made at the UK level to catalogue data holders but much work also needs to be done at the local level in locating data and making them available.

Data are currently collected using widely varying standards and methods. This has resulted in incompatibility between data-sets and difficulties in determining data quality. All key users experience considerable difficulties in handling data that have been collected to different standards and that are managed in different formats.

Current problems include:

- ◆ variability in recording techniques and collection standards
- ◆ the occurrence of duplicate data-sets.
- ◆ data that have been verified to unknown levels.
- ◆ data formats that do not permit linking to GIS.
- ◆ different methods for specifying locations
- ◆ different standards for creating metadata
- ◆ use of non-standard species taxonomies and biotope classifications

All users of marine data require them to be verified. In many cases it is best that local people do this during the process of inputting the data.

3.2 Recommendations

- ◆ LRCs should hold metadata on the data they do not actually manage and provide this information to their users.
- ◆ LRCs should implement and promote standards, including those set by the National Biodiversity Network, that permit effective data sharing.
- ◆ LRCs should play a significant role in inputting marine data, particularly in transferring paper records to digital form.
- ◆ LRCs should ensure that all associated data have been supplied by the data collector (e.g. location, recorder, biotope).

- ◆ LRCs should ensure that all data are verified to consistent standards.
- ◆ LRCs should promote the use of NBN data access terms as these are developed.

4 Supporting voluntary recording

4.1 Background

There are far fewer volunteer recorders and recording schemes active in the marine environment than in the terrestrial, but many of the issues are similar.

There is considerable agreement among data collectors and users that LRCs can provide a valuable and important role in supporting volunteer recording and in improving the quality of data collected.

Principal data users recognise that there is a need to promote marine recording locally and to improve communications between recorders, particularly between local recorders and national recording schemes.

4.2 Recommendations

LRCs should:

- ◆ provide support for amateur recording activities, such as Seasearch
- ◆ supply information on data gaps and encourage recording targeted at data needs
- ◆ offer services to marine recorders, such as data input and management
- ◆ give advice on training opportunities
- ◆ promote consistent data collection standards
- ◆ promote national and UK recording schemes
- ◆ assist in developing verification procedures
- ◆ maintain contact with relevant specialists

5 Making information available to the public

5.1 Background

LRCs have the potential to provide information services to the public. The statutory conservation agencies recognise that they can provide a mechanism for making information more widely available. However, there is currently no mechanism at the UK level for resourcing LRCs to provide public information services and any involvement will depend on the priorities of local LRC users.

5.2 Recommendations

- ◆ LRCs should promote their capacity to play a key role in helping the environment and conservation agencies and other LRC partners, including

local government, to meet their obligations to make information widely available and their objectives to educate and inform the public.

- ◆ LRCs should indicate to their users the resource implications of providing public information services on their behalf.

6 LRCs and the National Biodiversity Network

6.1 Background

The NBN is being developed as an integrated network of holders and users of biological data with the primary purpose of making data easily available to all data users. These include marine data and the Marine Life Information Network (*MarLIN*) is providing the NBN lead at the UK level. (Further information on *MarLIN* is provided in Annex 3).

Setting standards

The implementation of standards is a key component in enabling the efficient sharing of data and the NBN is working to set standards for the collection and management of marine data. Standards are required that cover many aspects of data collection, such as; verification, species and biotope names, taxonomies and definitions, handling position data, terms of access to data and charging policies. Standards may be set and agreed at UK level but their implementation will often be at the local level.

Links to UK data-sets

Many marine data-sets are collected and managed at the UK level, particularly those for offshore areas. Many of these data-sets are collected by government agencies and research bodies and *MarLIN* is engaged in cataloguing these and in making metadata available through the NBN.

6.2 Recommendations

- ◆ LRCs should provide a local point of access to contextual and other information held by *MarLIN*.
- ◆ LRCs should work with *MarLIN* on making local data available more widely.
- ◆ The NBN should work with LRCs, *MarLIN* and other data holders to ensure that responsibilities for data management are clear and that effort is not duplicated.
- ◆ The NBN should work with LRCs, *MarLIN* and other interested parties to set UK standards for the management of marine data.

7 Setting a geographical limit to data held

7.1 Background

There is currently no consensus amongst data collectors and users on whether LRCs should set a limit, beyond which it is inappropriate for them to collate,

manage and supply marine data. All LRCs should manage data on coastal sites, habitats and species down to the Low Water Mark. This fits in with the needs of many of their core users, such as local authorities. However they will need to evaluate whether or not they should hold data beyond this limit.

Many collectors and users of marine data recognise 12 nautical miles (nm) as a division between certain of their activities and functions. However, the environment agencies are concerned only with the marine environment to 3 nm and the conservation agencies have responsibilities to 200 nm with 6 nm providing the division between near and offshore areas.

Twelve nautical miles provides a useful marker to steer local discussions on data management responsibilities and to avoid difficulties over boundaries between adjacent LRCs. However, there is demand for data beyond this distance from local, national and UK users: these data may include cetacean, turtle, sunfish, shark, fishing and bird records.

7.2 Recommendations

- ◆ LRCs should manage data should manage data on coastal sites, habitats and species down to the Low Water Mark. They should set a geographical limit for data they will manage which is beyond the Low Water Mark in consultation with their users and following a full assessment of data requirements.
- ◆ LRCs should decide whether there are exceptions to this limit for certain classes of data.
- ◆ LRCs should understand what systems are in place for the management of data that are not managed locally but for which they have identified a demand and should aim to provide information on these data to their users.

Annex 1

The principal uses of marine biological data

1 Coastal zone planning and coastal development control

The implementation of Integrated Coastal Zone Management (ICZM) has increased the demand for marine and coastal information to aid decision-making. Demand for data in support of this comes principally from the statutory conservation and environment agencies and from local government. Data are particularly needed on priority habitats and species

Data are needed for:

- ◆ Integrated Coastal Zone Management (ICZM)
- ◆ producing Shoreline Management Plans (SMPs)
- ◆ Marine Environment High Risk Areas (MEHRAS, England and Wales only)
- ◆ management schemes for marine SACs and SPAs

2 Emergency planning

Emergency planning is the responsibility of local government and national agencies. It requires data, including assessments of environmental sensitivity, on scheduled, important and sensitive marine sites and species.

Data are needed for:

- ◆ contingency planning
- ◆ sensitivity atlases
- ◆ identifying MEHRAs

3 Conservation

There is demand from many sectors and organisations for data in support of marine conservation. Users include voluntary organisations as well as the agencies responsible.

Data are required to support:

3.1 Biodiversity planning and reporting

- ◆ identification and monitoring of Biodiversity Action Plan (BAP) species and habitats
- ◆ identification of other listed habitats

3.2 Protected areas / sites

Designation, management and monitoring of:

- ◆ marine and coastal Natura 2000 sites (SACs and SPAs)

- ◆ inter-tidal Sites of Special Scientific Interest (SSSIs)
- ◆ statutory and voluntary Marine Nature Reserves

3.3 Other

- ◆ populations and trends in non-BAP species and biotopes (including strandings, impacts of gill netting)

4 Environmental Impact Assessment (EIA)

EIAs are required for a wide range of activities that impact on the marine environment and many interested parties are now regularly consulted on EIAs.

Information on species and habitats are essential to the EIA process and there is a need to identify marine areas, species and biotopes with high sensitivity to environmental damage.

The main classes of activity covered by EIA regulations are:

4.1 Discharges and emissions: licensing, measuring, monitoring and predicting impacts

- ◆ impact assessments on species and biotopes require data on occurrences and sensitivities to disturbance
- ◆ data on water quality are needed for assessing and monitoring environmental impacts

4.2 Aquaculture licensing and monitoring

- ◆ data on marine biotopes and key species are needed for fishfarm and shellfish licensing and for monitoring the effects of fish pens and cages in coastal waters

4.3 Offshore activities (e.g. for oil and gas)

Biological information is needed to minimise the impacts of offshore production and exploration terminals on sensitive and important wildlife

- ◆ many companies collect and manage their own datasets
- ◆ many oceanographic data can now be accessed through the British Oceanographic Data Centre (BODC) and the European Directory of Marine Environmental Data (EDMED)

4.4 Transport and dredging

- ◆ oil and other transport
- ◆ transfer facilities
- ◆ dredging

4.5 Aggregate extraction

4.6 Offshore wind proposals

5 Fisheries

Fisheries regulators, including Ministry of Agriculture, Fisheries and Food (MAFF) and the Sea Fisheries Committees (SFCs), need marine information to inform their decision-making. These agencies collect and use species information, including catches of rare and unusual fish. The SFCs are increasingly including the conservation of wildlife in bylaws.

Fisheries regulators require data for:

- ◆ stock assessments in the European Economic Zone
- ◆ developing fisheries policies that minimise impacts on sensitive / important wildlife
- ◆ monitoring fisheries
- ◆ developing policies and regulating new fisheries (e.g. deep water, new species)

6 Recreation

There is increasing public use of the marine environment: recreational diving, sailing and kayaking are all increasingly popular, as are wildlife activities such as rockpooling and whale watching.

Recreational use of the marine environment may require management. One management technique is the use of voluntary recreational zoning as part of ICZM so that sensitive areas are avoided (see above).

Recreational activities also provides an opportunity to raise public awareness of marine conservation issues. A number of organisations are involved in promoting responsible recreation and require data for providing information to improve public understanding and behaviour.

7 Education

As understanding of marine species and habitats is incorporated into national curricula there is an increased demand from schools for information. Education also takes place outside the formal sector and a number of local and UK agencies have policy objectives to raise awareness and improve public understanding.

8 Research

Pure and applied research generate large quantities of data on the marine environment, many of which are published but can be difficult to locate and access. Users of research data include government bodies, academic institutions and recording societies concerned in factors such as distribution, biogeography and ecology.

There is a growing demand amongst data users for data to:

- ◆ identify species and biotopes of marine natural heritage importance
- ◆ locate nationally rare or scarce species and biotopes

- ◆ identify species declining in abundance or range
- ◆ identify biotopes declining in extent or frequency of occurrence
- ◆ monitor change and identify trends e.g. as a result of climate change

9 Environmental monitoring and reporting

The Water Framework Directive, international conventions (e.g. The Oslo and Paris Convention) and government policy all require the setting and monitoring of various environmental indicators and the reporting by government bodies to the UK government, the EU and the secretariats of the conventions. Some marine indicators are based on physical and chemical data; others contain biological elements.

Annex 2

Bodies and organisations consulted in producing these guidelines

The following organisations were consulted both formally and informally during the consultation process to draw up these guidelines. A two-stage process was adopted that sought expert input during the initial scoping of the issues. These issues were then presented to a wider range of bodies during the full consultation exercise.

Government bodies

Countryside Council for Wales
English Nature
The Environment Agency
Joint Nature Conservation Committee
MAFF Fisheries (CEFAS)
Scottish Environment Protection Agency
Scottish Natural Heritage

Local Record Centres

Devon Biological Records Centre
Dorset Environmental Records Centre
Environmental Record Centre for Cornwall and the Isles of Scilly
Fife Nature
Orkney Biological Records Centre
RECORD, the Biodiversity Information System for Cheshire, Halton, Warrington and Wirral
Sussex Biological Records Centre

NGO's and Academic institutions

Biological Recording in Scotland (BRISC)
Cheshire Wildlife Trust
The Conchological Society
Devon Wildlife Trust
Dorset Wildlife Trust
Manx Wildlife Trust
Marine Biological Association and Marine Life Information Network (*MarLIN*)
The Marine Conservation Society
Marinet, Marine Information Network, Friends of the Earth
The Phycological Society
Scottish Wildlife Trust
SeaWatch Foundation
The Wildlife Trusts

Annex 3

The Marine Life Information Network (*MarLIN*)

The Marine Life Information Network is being established by the Marine Biological Association of the UK in collaboration with the Joint Nature Conservation Committee and major holders and users of marine biological data and information in Britain and Ireland.

MarLIN will:

- ◆ Provide a structure for linking available data on marine life around Britain and Ireland.
- ◆ Improve the access, display and interpretation of information in support of environmental management, protection and education.
- ◆ Be the most comprehensive and easily used source of information about marine habitats, communities and species around Britain and Ireland and their sensitivity to natural events and human activities.

MarLIN undertakes to:

- ◆ Develop a Network for the location, cataloguing, collation and exchange of information on marine biodiversity in the coastal and shelf seas of Britain and Ireland.
- ◆ Provide the marine node to the National Biodiversity Network (NBN) and adopt and help to develop and promote its standards.
- ◆ Work within the NBN to link with and develop recording centres, which will agree and use compatible data entry methods to optimise the utility of the information resource.
- ◆ Develop facilities to access information from the Network of databases so that data on habitats, communities and species can be manipulated and displayed geographically and as text and pictures.
- ◆ Link biodiversity information from the Network interactively with taxonomic, biological and sensitivity information derived from material held in the National Marine Biological Library and other sources to increase its value for environmental decision-making.
- ◆ Develop accessible 'front-end' dissemination media for research and educational use, including Internet and 'local' versions.
- ◆ Link data from various sources in a standardised format to facilitate common access to locational data on habitats, communities and species.
- ◆ Manage marine biological information supplied from a variety of sources and on behalf of a variety of organisations to aid those concerned with environmental protection and management.
- ◆ Develop the tools to analyse information so that it is more directly useful for environmental decision-making required under a wide range of statutes, directives and conventions.

There is a Core Network Team and three sub-programmes within MarLIN

1. The Seabed Data Acquisition and Interpretation Sub-programme
2. The Biology and Sensitivity Key Information Sub-programme
3. The Biological Recording Centres and Education Sub-programme

This sub-programme links especially to the National Biodiversity Network. It will develop marine biological recording through local recording centres and using volunteer recorders. It will realise the educational opportunities that access to images and descriptions of biology of biotopes and species and their geographical distributions offer.

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