



ENGLISH
NATURE

Getting the best from Marine Monitoring under the Habitats Directive

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Presentation Structure

- Marine monitoring work currently in progress
- Looking to the future: maximising contribution to Sustainable Development

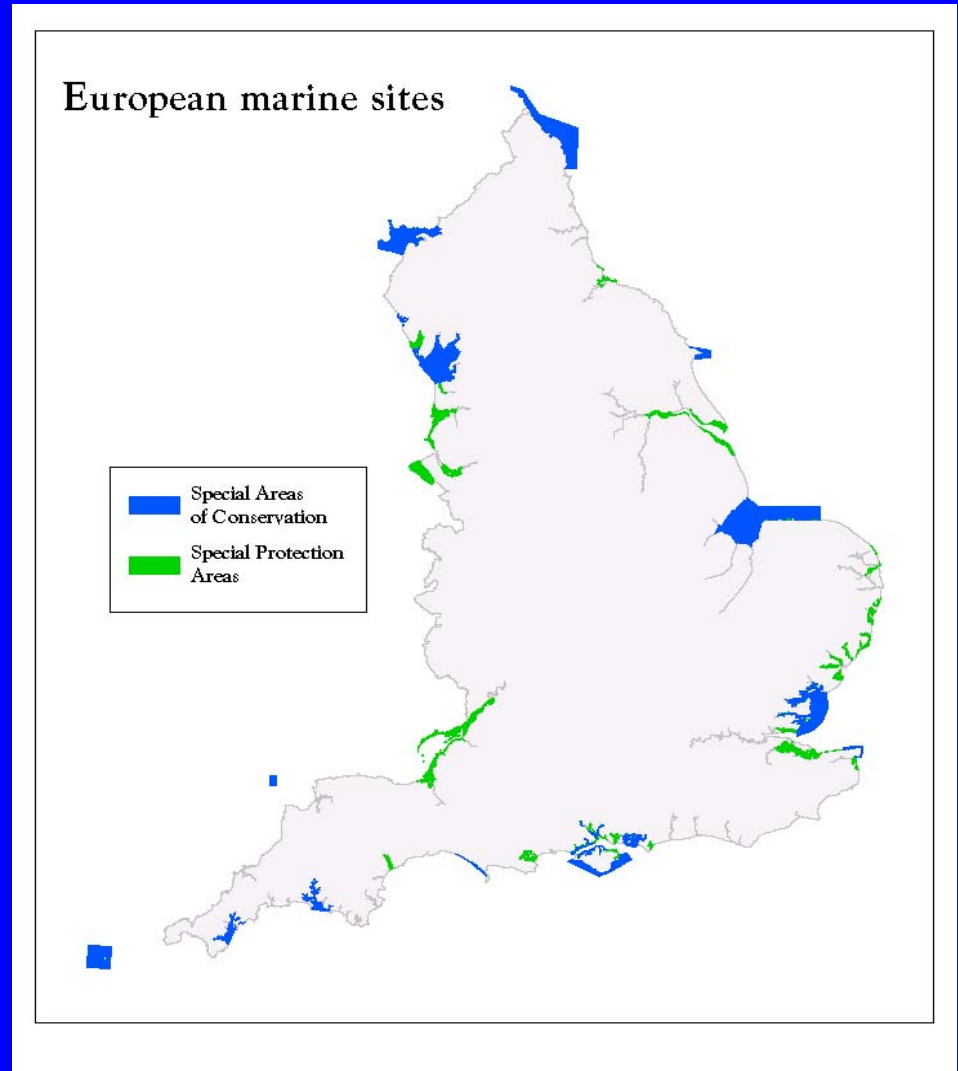
Why monitor?

- The Habitats and Birds Directives require:
 - Designation of sites
 - Monitoring of features within sites
 - Regular reporting of condition
- The Directives also make allowance for management schemes

European Marine Sites

- Total of 39 N2k sites

- Differ in size and complexity



Plymouth Sound



Lundy Island cSAC



Monitoring Requirements

- To inform members of management scheme about condition of wildlife
- To enable reporting to Europe through JNCC

Tools available

- List of features
- Advice on sites: Regulation 33 packages
- Advice on how to proceed
- Advice on methods

Typical Attribute Table

(Sub) Feature	Attribute	Measure	Possible technique

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Reef	Extent	Area	Acoustic Survey

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Reef	Distribution & range of communities	Biotope Composition (richness)	Drop down video

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Reef	Species composition of main biotopes	Species richness	Detailed diver surveys

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Reef	Presence of regionally important species	Individual species – e.g. Ptilota gunneri, Odonthalia dentata	Diver surveys / direct observation

Typical Attribute Table

Decreasing Scale
↓
Increasing Resolution

(Sub) Feature	Attribute	Measure	Possible technique
Reef	Extent	Area	Acoustic Survey
	Distribution & range of communities	Biotope Composition (richness)	Drop down video
	Species composition of main biotopes	Species richness	Detailed diver surveys
	Presence of regionally important species	Individual species – e.g. <i>Ptilota gunneri</i> , <i>Odonthalia dentata</i>	Diver surveys / direct observation

Using this Framework

- We have a relatively detailed record of marine communities
- Next task is to use this & other data to maximise understanding of sites and features

Development of Monitoring

- Habitats Directive

“.....makes a contribution to the general objective of sustainability”

- Maximising contribution of monitoring to Sustainable Development

What is Sustainable Development?

“development to meet the needs of the present without compromising the ability of future generations to meet their own needs”

Three pillars of Sustainable Development:

- Social sustainability
- Economic sustainability
- Environmental sustainability

Marine Framework for Implementing SD

- Aim to integrate and manage demands placed on environment to achieve sustainability
- The Ecosystem Approach is primary tool
- Based on maintaining fully functioning ecosystems
- Various scales appropriate

Economic Sustainability

- The recognition of the goods and services provided by the environment
- For monitoring an initial requirement to establish economic objectives for SACs
- Examples of indicators would include:
 - bathing water quality
 - visitor numbers to hotels
 - number of mussel or cockle beds open
 - amount of standing spat available
 - number of fishing boats in harbour

Social Sustainability

- Greater range of stakeholders
- Better involvement of stakeholders
- Management schemes represent a significant progression

Environmental sustainability

- Monitoring indicates levels of sustainability
- History lessons show value of monitoring work
- Ecological indicators reflect direct impacts:

Eutrophication

Physical Disturbance

Sub-lethal / Synergistic effects

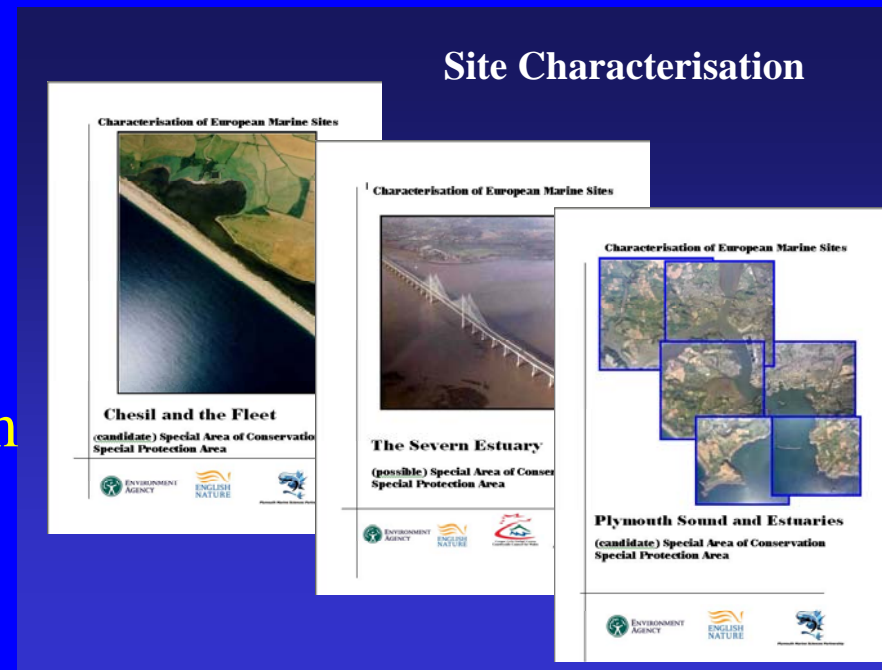


Ecological Sustainability

- A need for greater integration

Specific examples include:

EA site characterisation work
WFD assessment tools
Biomarkers – ECOMAN
Climate change – SAHFOS / MarClim
Physical damage – Wildlife Trusts
Suites of indicators - CEFAS



The Way Forwards

- Equitable reporting from economic, social and environmental deliverables
- Represents a system to report sustainable use in context of biodiversity gains
- Parallels initiatives being developed in other countries

Summary

- Current SAC monitoring is structured around an ordered assessment of communities on features
- Monitoring at scale of N2k sites is an excellent opportunity to record extent of implementation of SD