

# Developing the UK Marine Monitoring Strategy

Beth Greenaway, Marine and Waterways, Defra  
Mike Waldock, CEFAS and MEMG Chair

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# Contents

- Government vision for monitoring within ecosystem context
- Where are we now
- Lessons from Action plans and State of the Seas
- Aims for Marine Monitoring Strategy

# Drivers

OSPAR

Defra Sustainable Development Strategy

EU Marine Strategy

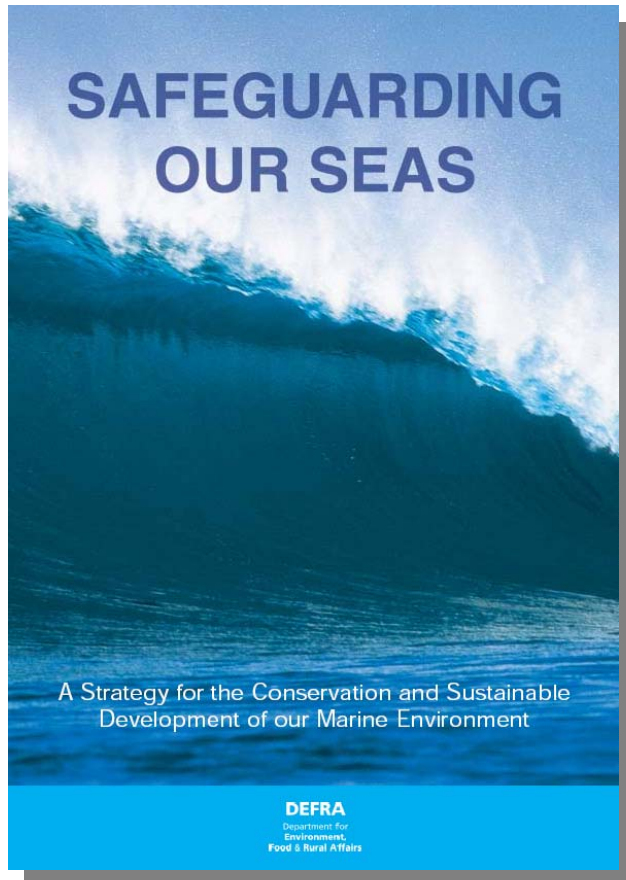
Water Framework Directive

Birds and Habitats Directive

World Summit on Sustainable Development:  
Global Marine Assessment

Etc etc

# Sustainable Development and Ecosystem Approach



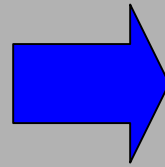
## Marine Stewardship Report

*"..clean, healthy, safe, productive and biologically diverse oceans and seas."*

*Within one generation we want to have made a real difference to tackling the threats that marine ecosystems face*

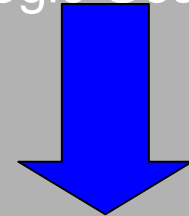
# Steps to Ecosystem Approach (Ideal)

Scope / review  
(assess ecosystem state,  
policies, human activities),



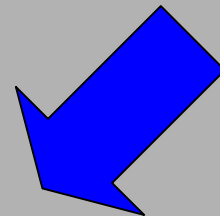
**Stewardship  
Report**

Vision, and  
Strategic Goals

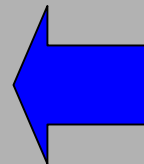


**State of the  
Seas**

Identify  
proper (baseline)

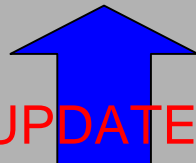


Set ecological objectives  
(no gaps or redundancy),



Identify indicators  
and reference points,

UPDATE

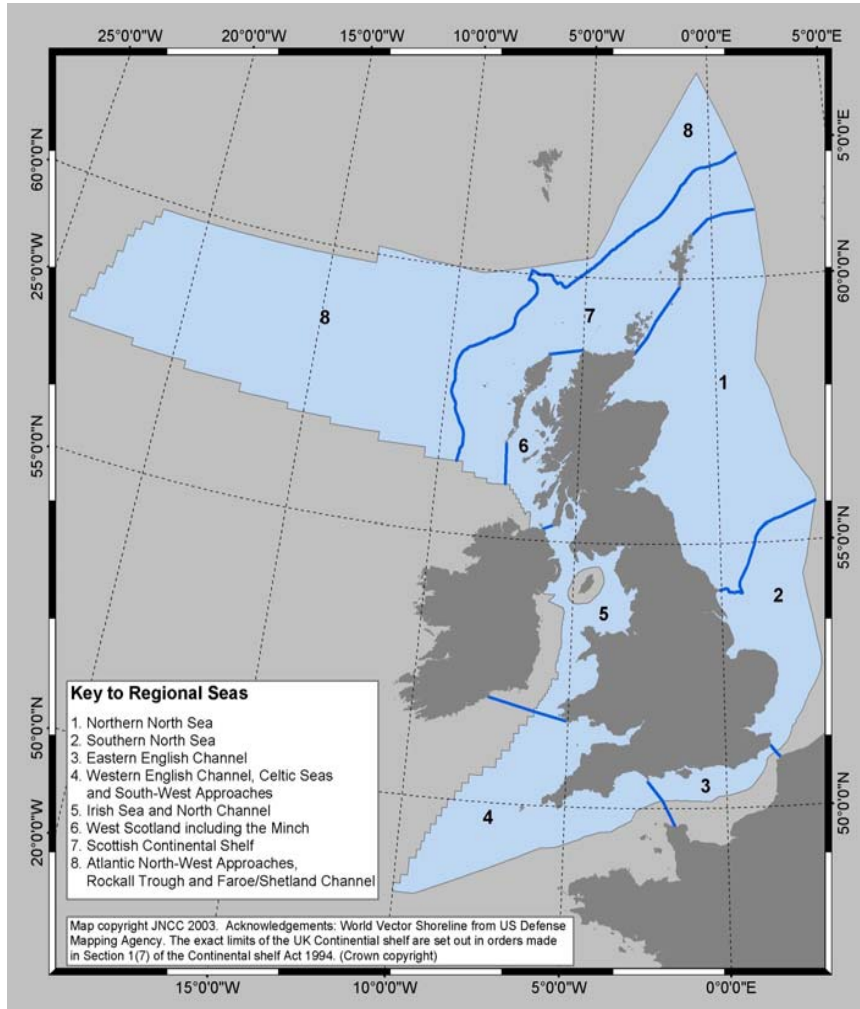


**UK  
Monitoring  
Strategy**



Monitor  
achieve

# State of the Seas Report:



What we understand about the state of the 8 regional sea areas.

How are we moving towards our target of

***‘Within one generation we want to have made a real difference to tackling the threats that marine ecosystems face’***

# State of the Seas

## Where are we now?

- The 'evidence'- reports in final stages
- Overall report – being drafted now
- Lessons learnt from process and ability to integrate knowledge important part of how marine science underpins policy and management
- The direction of UK marine monitoring and research (particularly on indicators and ecosystem based approach)

MEMG  
(Human Impacts  
inc pollution)

# Evidence

FISH

Based on 4 sector monitoring programmes

Habitats and Species

Marine Processes  
and Climate  
GOOS

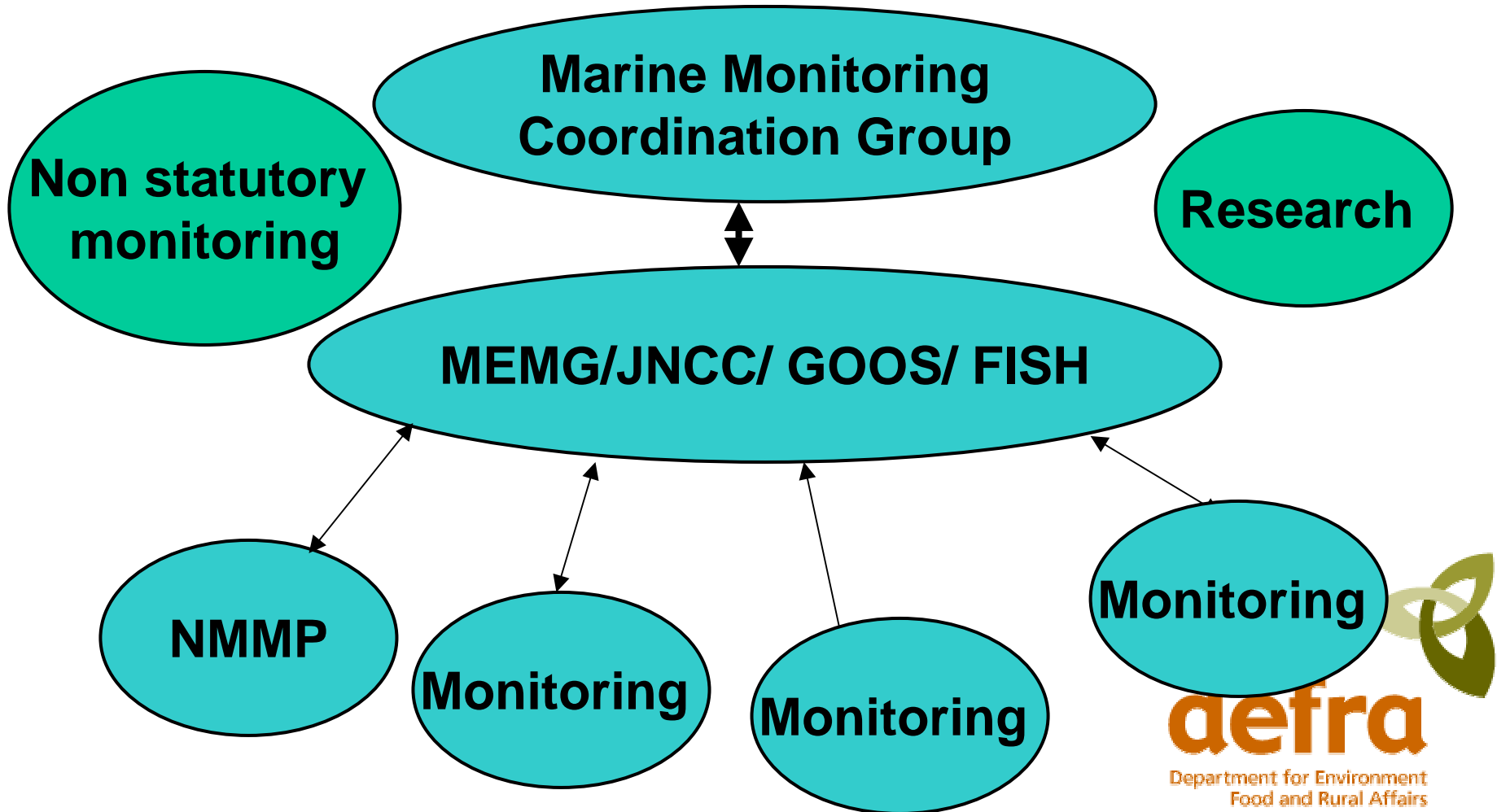
# 2001 Stocktake

- MEMG asked to work with other groups to review monitoring in UK waters and develop proposals for comprehensive monitoring

## •Conclusions

- Management by 4 sectoral groups but the drivers are changing – all sectors need to answer the bigger questions of ecosystem health/ is change natural or anthropogenic?
- Suggested high level responsibility/leadership/ integration via chairs of the sectoral groups
- Development of a performance matrix – indicators
- Development of actions plans for each group with exchange of draft plans in an iterative fashion to prevent duplication
- Set at least 5-6 year horizon
- Integrate outputs in a performance-based State of the Seas report

# Management of Monitoring Programmes in the UK



# The Action Plans

- 4 Sectors – looked at
  - main international and national drivers
  - players
  - parameters/determinands
  - protocols

# The Marine Environment Monitoring Group plan

- Main drivers for the work
  - OSPAR (hazardous substances, eutrophication)
  - Water Framework Directive
  - National science needs for assessment of hazardous substances, eutrophication and physical disturbance
- Technical working groups on the thematics leading into the National Marine Monitoring Programme redesign group



# NMMP

- Network of estuarine, inshore and offshore sampling points focused on specific determinands, sampling frequency and improved methodology
- Based on Chemistry, Biological Effects and (Benthic) Ecology
- Operating manual is the Green Book
- Set up AQC groups

- 30 ug/kg ww (lower BRC)
- 70 ug/kg ww (upper BRC)
- 140 ug/kg ww (close to background)

Mercury in fish tissue

# Conservation Sector Plan

- EC Habitats and Birds Directive etc
- Collection of data by dispersed groups in one off surveys / research
- Data issues
- Common standards
- Monitoring progress report due 2007



# GOOS Action Plan

- Global Ocean Observing System – National input
- Operational marine forecasting (dominant driver) but what do the other sectors need?
- Gaps – academically collected MPC data and data from other sectors e.g. Temp and Salinity
- Recommend – multi agency use of platforms and secure funding of long term/ multi use data e.g. SAHFOS/Jason
- AQC not defined and many various methods and technologies
- Existing technologies particularly GIS could be more readily used
- Data issues

## Marine Process and Climate Parameters

- Weather and Climate
- Sea Temp
- Salinity
- Sea Level
- Waves
- Plankton
- Coastal Change



**defra**

Department for Environment  
Food and Rural Affairs

# Marine Fish Sector Plan

- Commercial fisheries – Fishery Agencies
- Offshore - Internationally coordinated by ICES
- Research surveys inc fish and physical habitat conditions (T, Salinity) could be used by others or extended to assess habitats
- Potential for resource sharing inshore?
- Ecosystem approach monitoring?

# Proof of the Pudding

- The State of the Seas report was a challenge - can we do it?
- Currently being polished but.... has identified the gaps in the performance indicator matrix and shortcomings in the overall monitoring programme

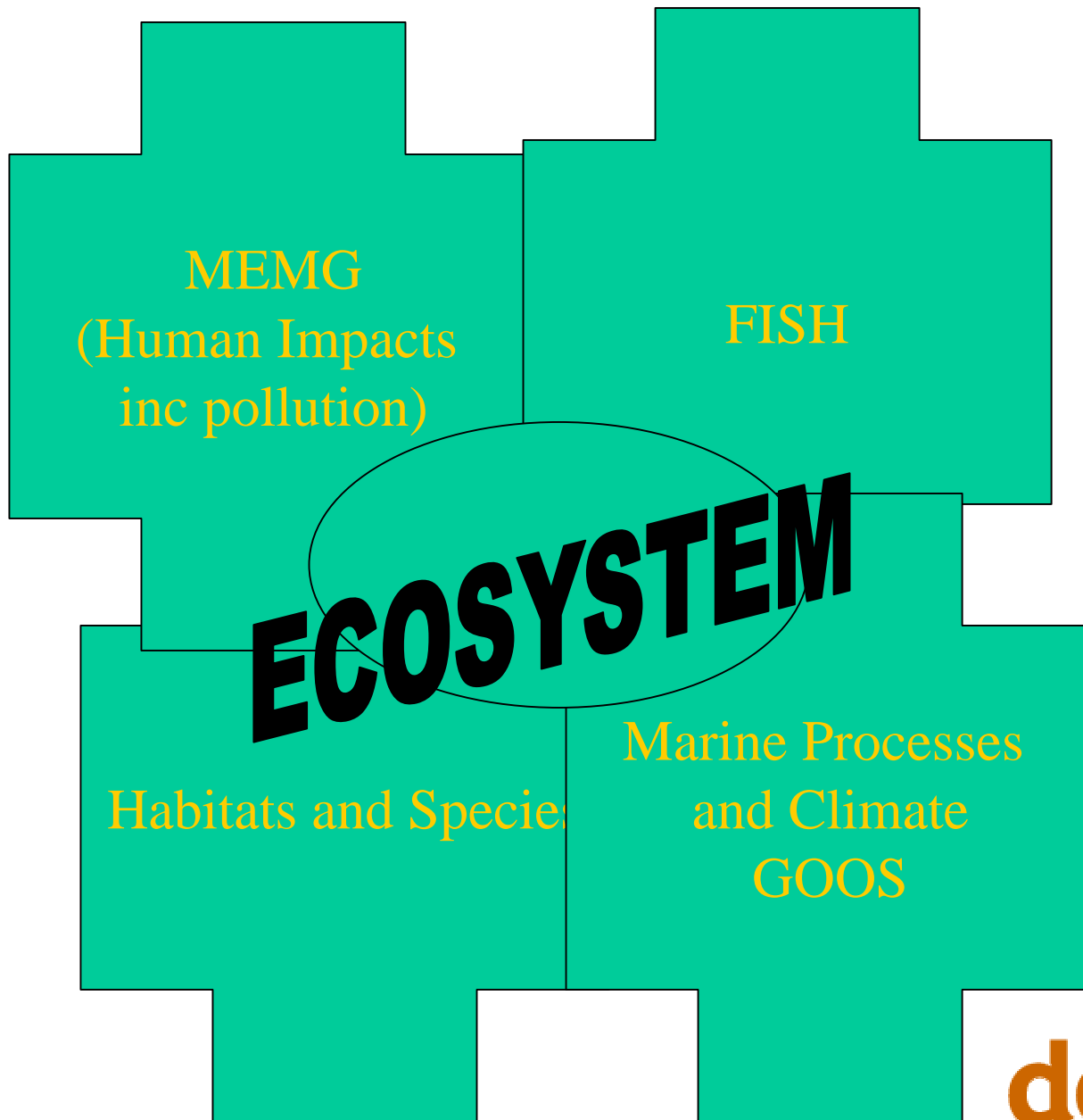
# State of the Seas lessons

- Measuring 'health' of ecosystem still major challenge
- **Information** shortfalls (trends/spatial scales) and the power of the programme to detect change
- **Coordination** (e.g. some issues outside of MMCG sectors, some no national coordination)
- **Indicators** (targets not agreed, tools for data integration not established)
- **Background** and contextual information missing

## What next?

The four sector action plans will be integrated to give an overall strategy and identify what changes are needed to continue the development of an ecosystem approach.

Immediate actions:

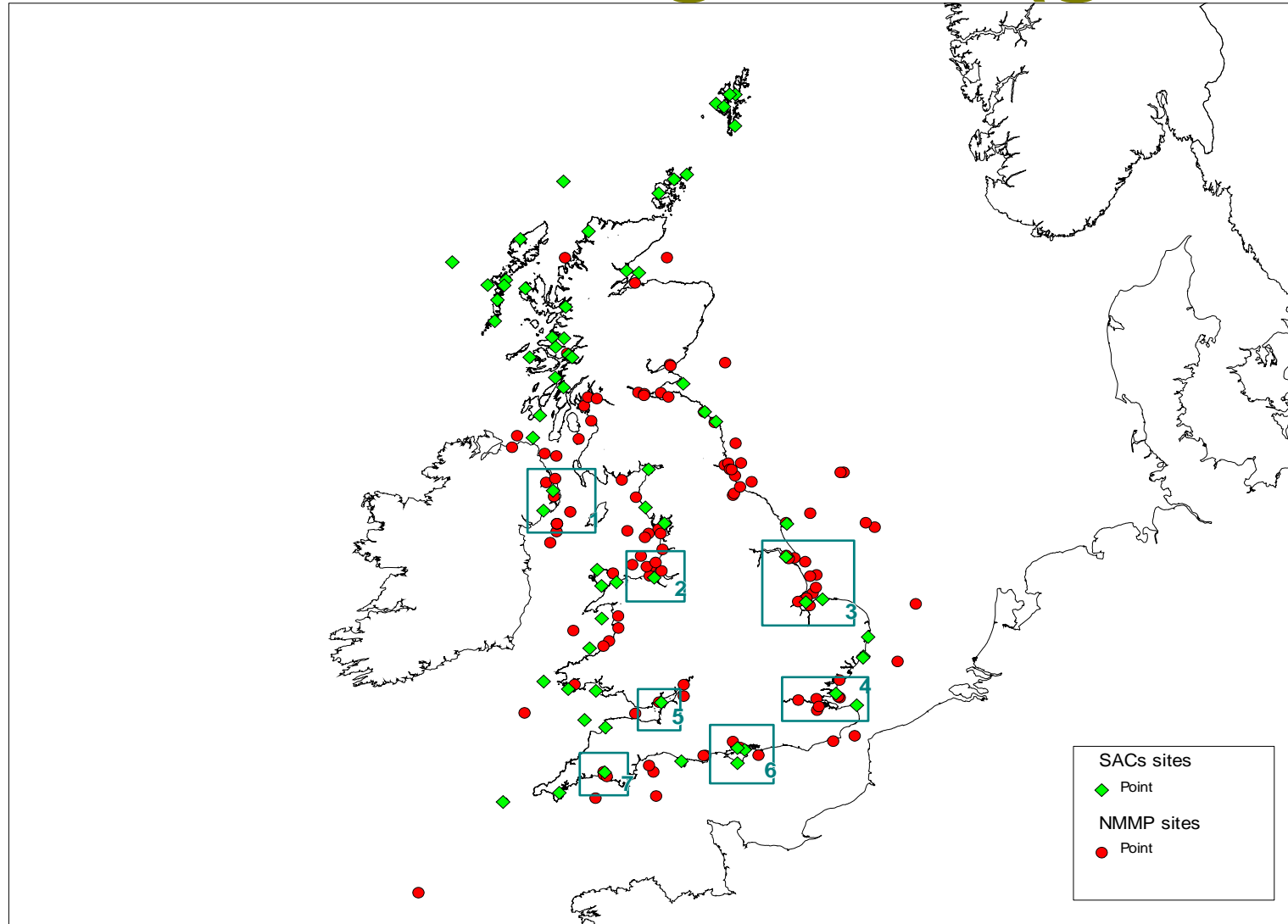




# Spatial Coverage

- All sectors recommend mapping survey sites and positions

# NMMP (red) / JNCC Monitoring Sites (green)



# DATA

- Common priority across all sectors which requires consistent approach
- Trend (lack of time series sufficient for)
- Spatial scales suitable for state of region?
- Absence – not collected/ monitored
  - **Not accessible**

# Marine Data and Information Partnership

- Marine Community have endorsed a concerted action which Defra and IACMST are working on to make it a reality
- Building on existing initiatives – high level commitment
- Long term vision .... plus short term goals
- Requires cultural changes first then IT solutions

# The Monitoring Strategy (The 3 Rs)

- Aims
  - To optimise marine monitoring
- Key issues to include:
  - Roles and responsibilities
  - Reporting results (inc. data)
  - Repetition/refinement (sustainability/  
quality assurance)

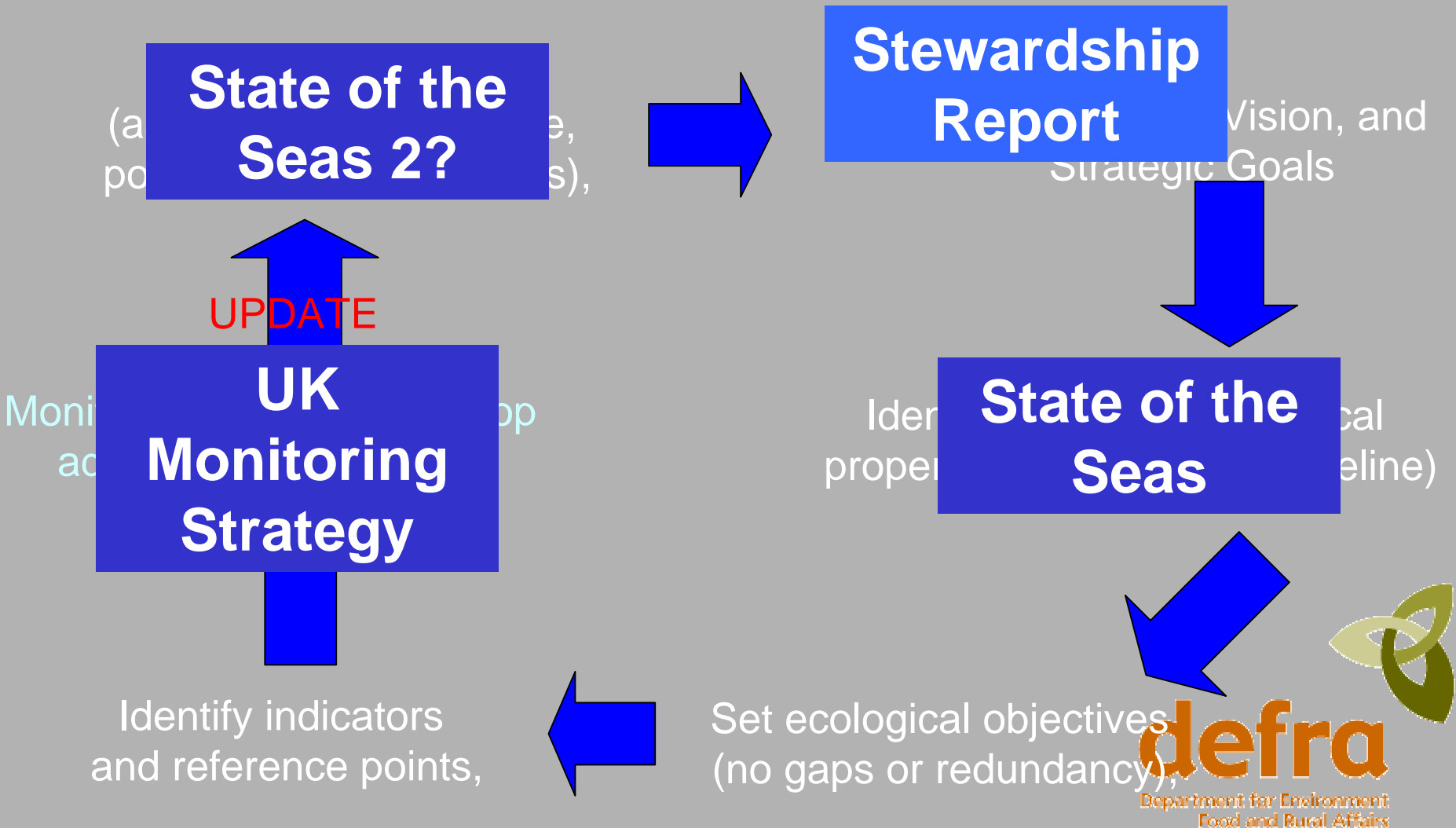
# Goals for Marine Monitoring

- Co operation and integration
- Actions plans (iterative and 5-year)
- Ensure compliance with international monitoring obligations
- To document ecosystem trends
- Encourage stakeholder contributions (research and technological innovation)
- Ensure data availability

# Conclusions

- Effective Stewardship of the sea requires objectives (indicators) and monitoring
- State of the Seas process has produced the first integration of our sector oriented data collation activities
- Government is moving forward with ideas of how to achieve its marine monitoring goals

# Steps to Ecosystem Approach (Oct 04)



Any Questions?