

# Science Driving Better Maritime Governance

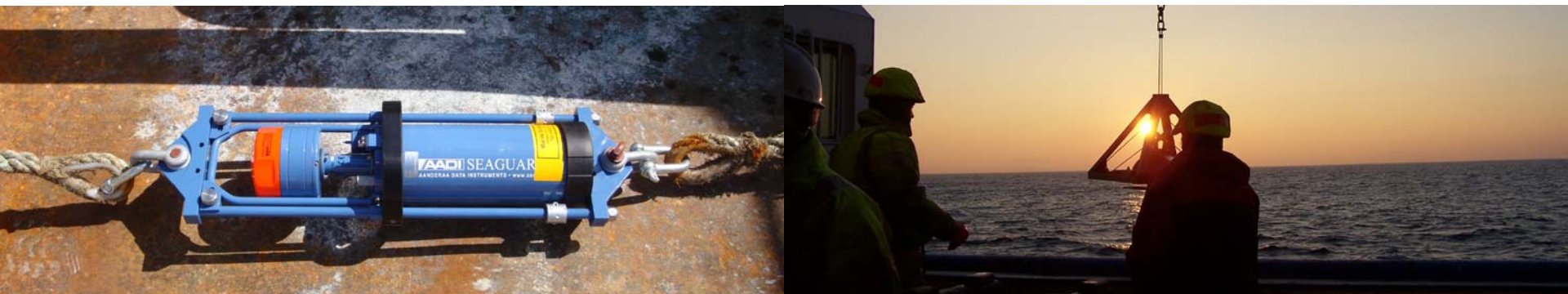
marine scotland  
science



Colin Moffat

# Outline

- Setting the scene
- Providing direction (to the scientists)
- Gathering the data - framework, programmes and tools
- Presenting the science
- Providing direction (to the decision makers)

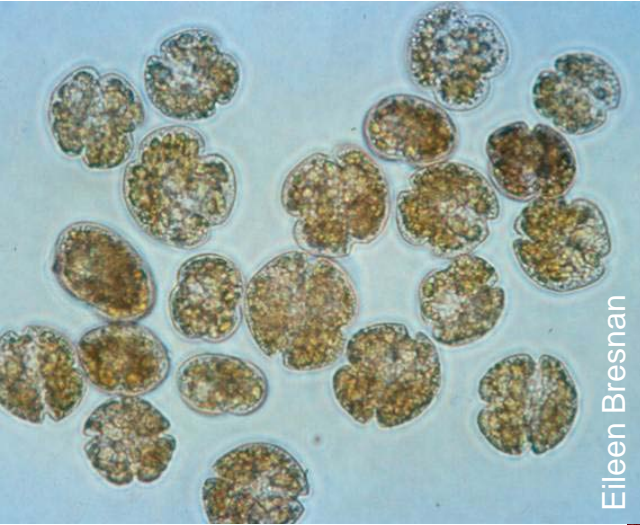




# Setting the Scene

# Our Marine Environment

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science



Eileen Bresnan



Simon Greenstreet



Marine Scotland

## A colourful, living and diverse ecosystem



JNCC



Craig Davis



OSPAR

# Pressures .... Pressures .... Pressures



Marie Russell



John Dunn



Matt Gubbins



# Questions?

How are these human pressures affecting the state of our seas?

What should our response be?

Are our responses working?





Providing Direction  
(to the scientists)

# Common Visions

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science

(Marine) Scotland:

“...**clean, healthy, safe,**  
**productive** and  
**biologically diverse**  
..... managed to meet  
the long-term needs of  
nature and people”

United Kingdom:

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

Europe:

“ .... **maintaining**  
**biodiversity** and providing  
diverse and dynamic  
oceans and seas which  
are **clean, healthy** and  
**productive.**”

OSPAR:



“ ..... **clean, healthy**  
and **biologically diverse**  
North-East Atlantic  
ecosystem.”



# Legislation – Marine Strategy Framework Directive

25.6.2008

EN

Official Journal of the European Union

L 164/19

## DIRECTIVES

**DIRECTIVE 2008/56/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL**  
of 17 June 2008

establishing a framework for community action in the field of marine environmental policy (Marine Strategy Framework Directive)

THE EUROPEAN PARLIAMENT AND  
THE EUROPEAN UNION,

Having regard to the Treaty  
of the European Community, and in particular Article 175,

Having regard to the proposal from  
the Commission,

L 232/14

EN

Official Journal of the European Union

2.9.2010

**COMMISSION DECISION**  
of 1 September 2010

on criteria and methodological standards on good environmental status of marine waters

(notified under document C(2010) 5956)

(Text with EEA relevance)

(2010/477/EU)

THE EUROPEAN COMMISSION,

Having regard to the Treaty on the Functioning of the European  
Union,

with other Union legislation and policies. It is also appropriate to integrate later on in the process the forthcoming experience to be developed at national and regional level in the implementation of the preparatory stages of the marine strategies listed in Article 5(2)(a) of Directive 2008/56/EC.

# Regional Seas Conventions

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United Nations Environment Programme  
environment for development



OSPAR CONVENTION FOR THE PROTECTION OF THE MARINE ENVIRONMENT OF THE NORTH-EAST ATLANTIC

Decisions, Recommendations and Other Agreements Applicable within the Framework of the OSPAR Convention

## Introduction

1. The **Convention for the Protection of the Marine Environment of the North-East Atlantic ("OSPAR Convention")** was opened for signature in 1992 and entered into force on 25 March 1998. It replaces the former:

- Convention for the Prevention of Marine Pollution by Dumping from Ships and Aircraft, 1972 ("Oslo Convention");
- Convention for the Prevention of Marine Pollution from Land-Based Sources ("Paris Convention");

but Decisions, Recommendations and all other agreements adopted under those former Conventions will continue to be applicable, unaltered in their legal nature, unless they are terminated by new measures adopted under the 1992 OSPAR Convention.



Gathering the data - framework,  
programmes and tools

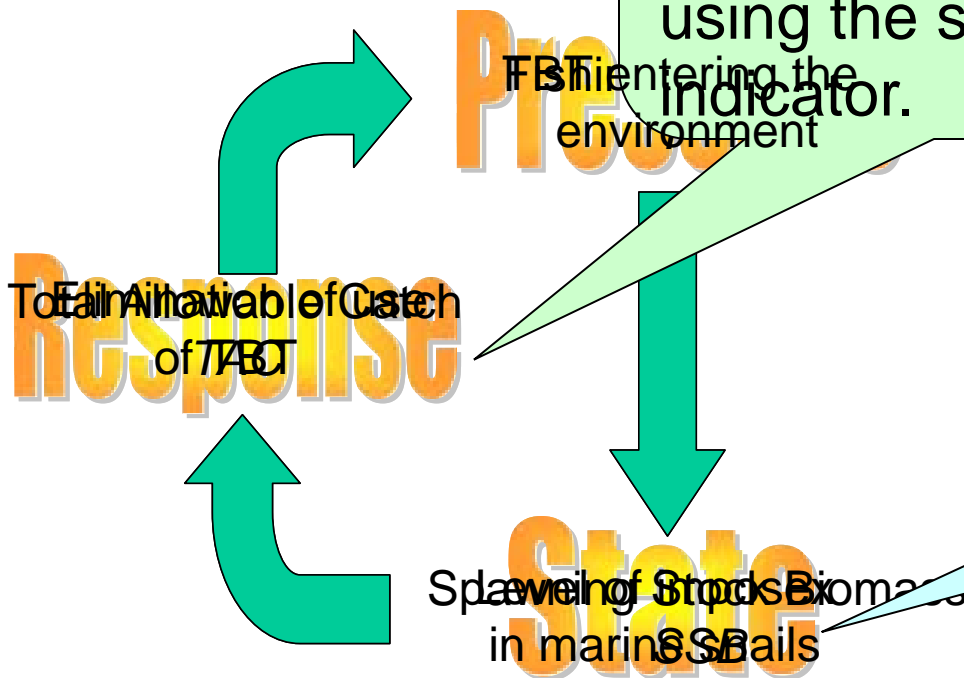
# Framework

- Ecosystem approach to manage human activities
  - Will rely on the use of indicators
  - Operated within an indicator-based management framework

**Pressure** indicators – measure the effect of a human activity on the ecosystem

**Response** – human action that follows the assessment of state using the state indicator.

**State** indicators – tell us about the status of an ecosystem component. Any change can be related to a change in the specific pressure.



# Tools for a co-ordinated programme



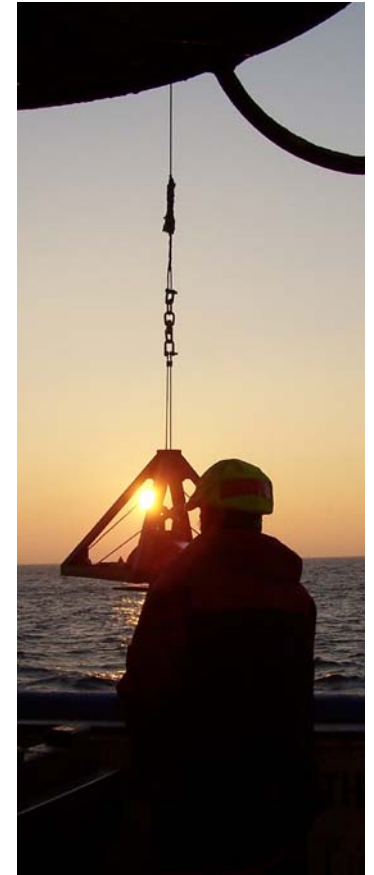
**OSPAR**  
**COMMISSION**

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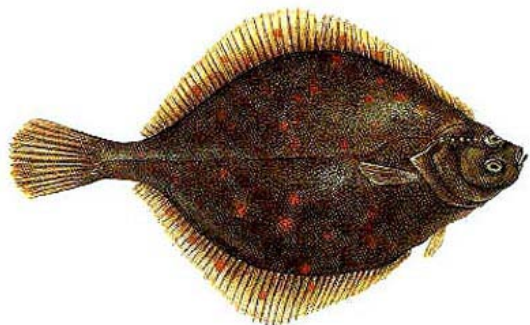
Three elements are essential for the realisation of monitoring under the OSPAR CEMP:

- Technical guidelines
- Quality assurance tools
- Assessment tools

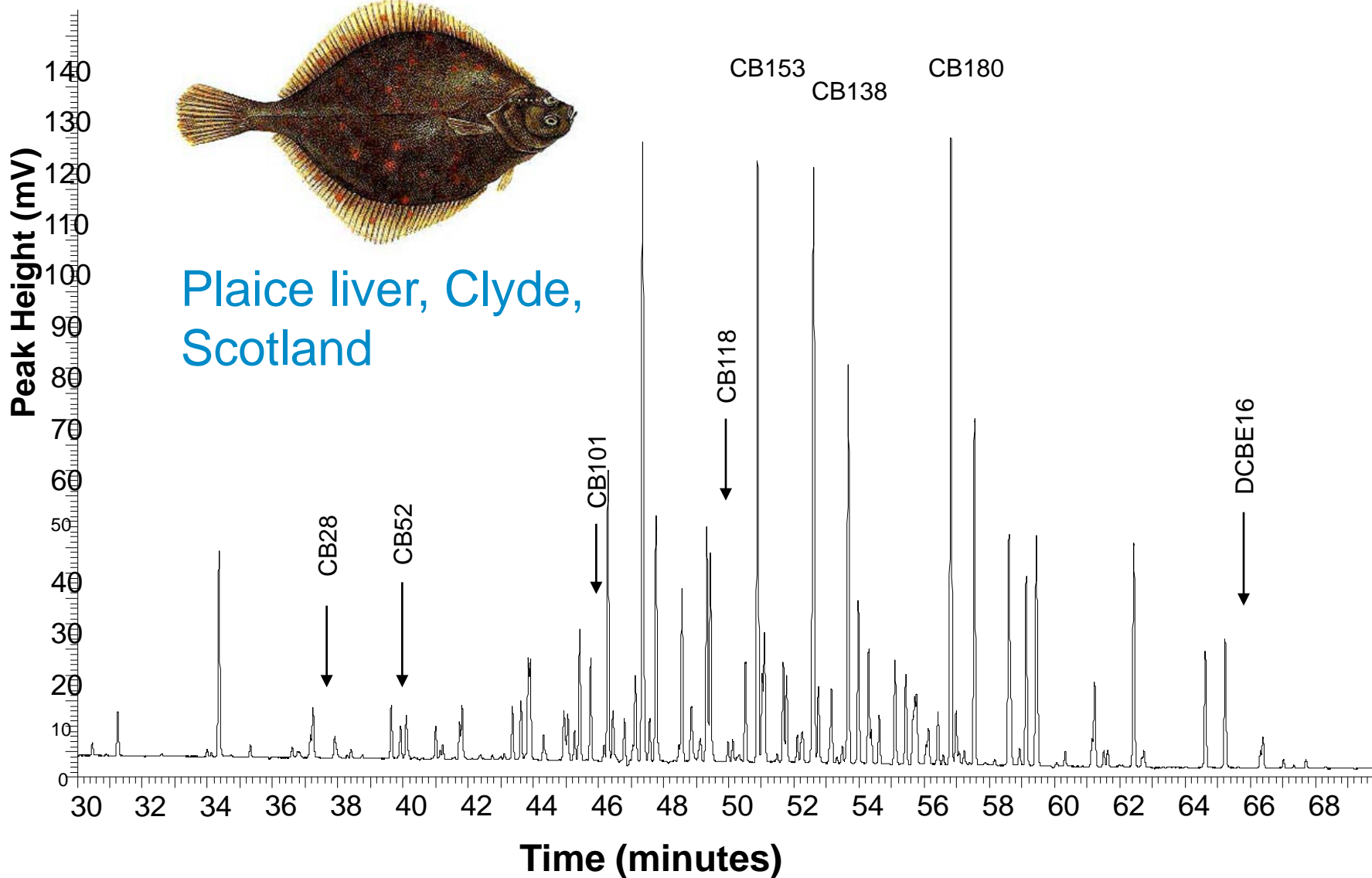
**Well trained and dedicated staff**



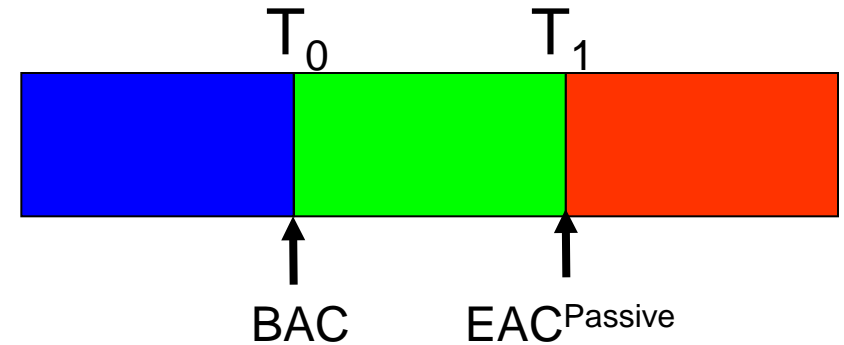
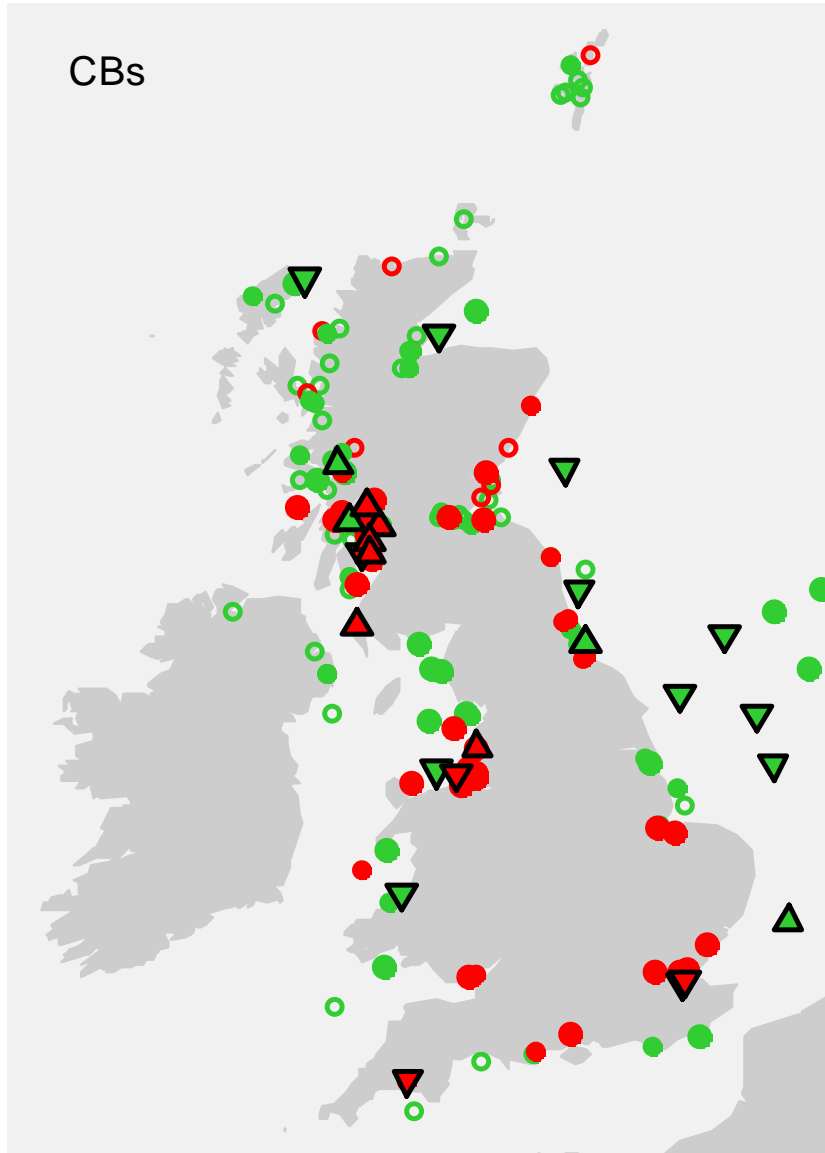
# Assessment – CBs in Biota



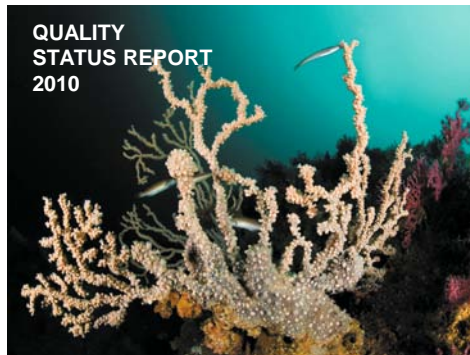
Plaice liver, Clyde,  
Scotland



# Assessment – CBs in Biota



- ▲ Significant upward trend
- ▼ Significant downward trend
- No trend (5+ years data)
- Trend not investigated (only 3 – 4 years data)
- Insufficient data to assess trend

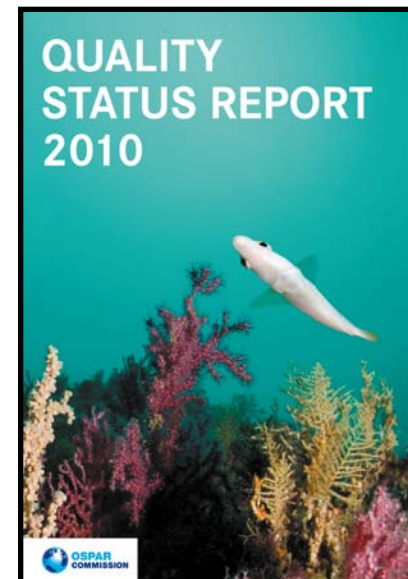
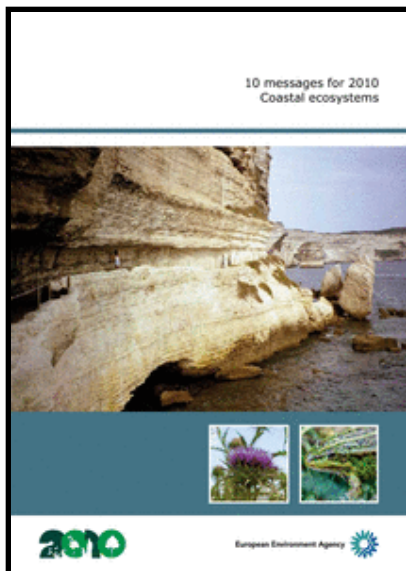
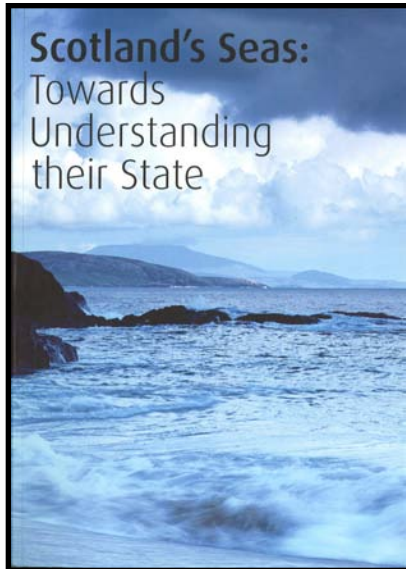


# Presenting the Science



# Common Visions

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# QSR 2010 - Making the Point marinescotland science



- **Key Findings**
- **Conclusions and Recommendations**
- **Action Needed**

JAMP  
Fisheries  
Shipping  
Climate

WGs  
Eutrophication  
Haz Subs

WGs  
Specific  
Assessments

Special  
'Utrecht'  
EcoQOs

Data collection (e.g. CAMP, RID, CEMP) & Quality Assurance

# QUALITY STATUS REPORT 2010



## Successes

- Inputs of pollutants have reduced
- Fisheries management has improved
- Tested Ecological Quality Objectives
- Collective and innovative assessment approaches



# QUALITY STATUS REPORT 2010



## Many challenges remain

- Many monitored sites are of an unacceptable status with respect to concentrations of PAHs and Hg
- Loss of biodiversity continues
- Climate change and ocean acidification
- Increasing and new activities





Providing Direction

# QUALITY STATUS REPORT 2010

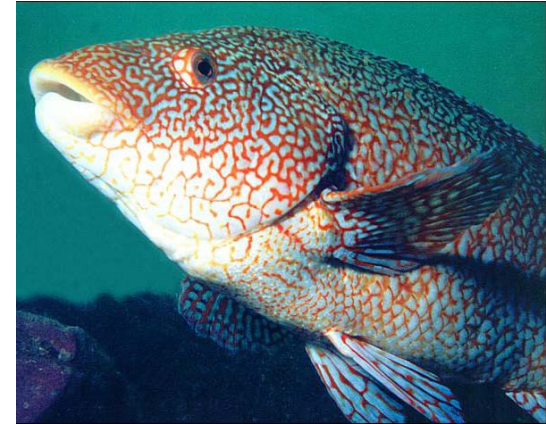
## Recommendations and Actions

- The QSR Recommends setting targets to reduce nutrient inputs to individual problem areas and urgently implementing existing measures to reduce them.
- OSPAR Contracting Parties should cooperate to improve and extend OSPAR's monitoring framework and better link it with the understanding of biological effects and ecological impacts [of hazardous substance].



# QSR 2010 has:

- Given clear direction to revision of the OSPAR Strategies and the OPSAR Joint Assessment and Monitoring Programme
- Highlighted OSPAR's attempts to integrate the ecosystem approach, inherent difficulties and data gaps
- Provided a platform for national 'Initial Assessments' under the EU Marine Strategy Framework Directive
- Shown best practice vis a vis Assessment of Assessments



# Conclusions

- Significant progress has been made to interface the policy and science
- Assessments are being made and clear messages presented
- Implementation of the recommendations and formulation of new strategies based on the assessments is happening
- There remain some (scientific) challenges:
  - Need to understand the issues of scale in respect of assessments
  - Need to understand the deviation between observed and target conditions
  - Need for improved assessment criteria
  - Need the methodology to allow integration/ aggregation of data





**Secure the vision of:**

**Maintaining biodiversity and providing diverse and dynamic oceans and seas which are clean, healthy and productive.**

