

'Investigating the oceans': an IACMST view

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Chairman
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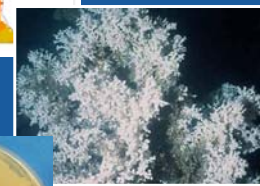
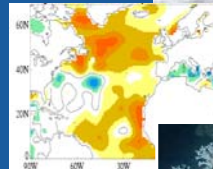
Why marine R&D is twice as important as it was 10 years ago

1. **Increasing rate of sea level rise**
underestimated by IPCC? East Anglia was lucky on 9 Nov; Bangladesh wasn't a week later
2. **Need to fast-track marine renewable energy** *60% carbon reduction can't be achieved otherwise*
3. **There will soon be a new ocean**
ice-free Arctic likely in our lifetimes
4. **Marine life faces the acid test**
how was acidification missed? Adds to pressure on over-exploited fisheries



A few more reasons (all requiring research effort)

5. Ocean uptake of CO₂ is slowing
10% reduction in Atlantic and Southern Ocean - and we don't know why
6. Marine data improve our weather forecasts
sub-surface temperatures off Florida determine UK weather
7. The UK needs to develop Marine Protected Areas
a key requirement of the Marine Bill
8. Drugs from the deep
opportunities for novel bioactives from the largest gene pool on the planet

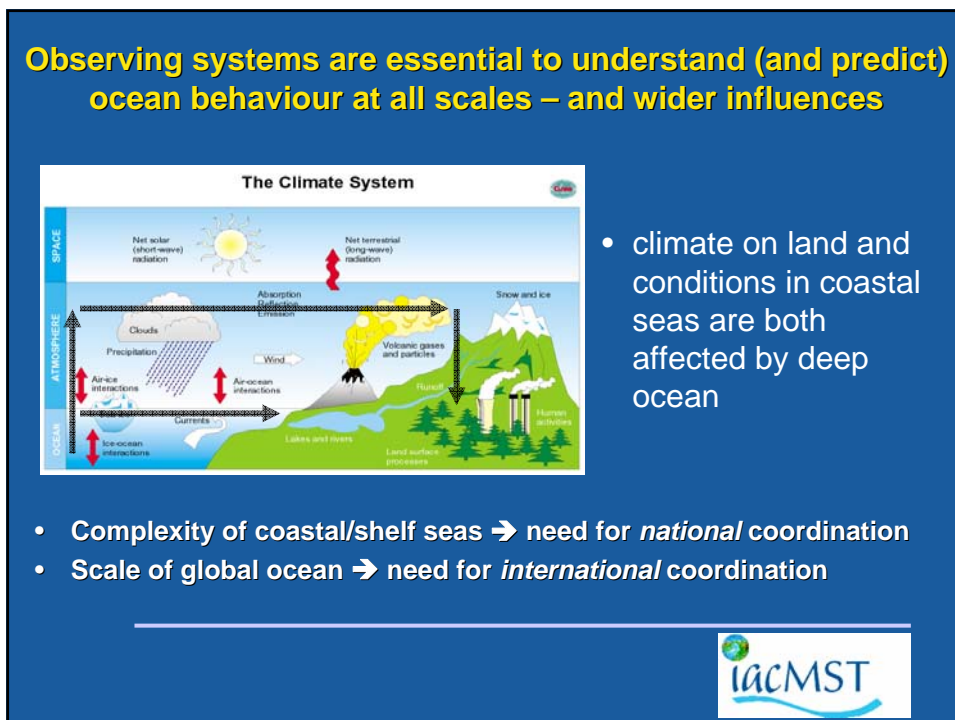
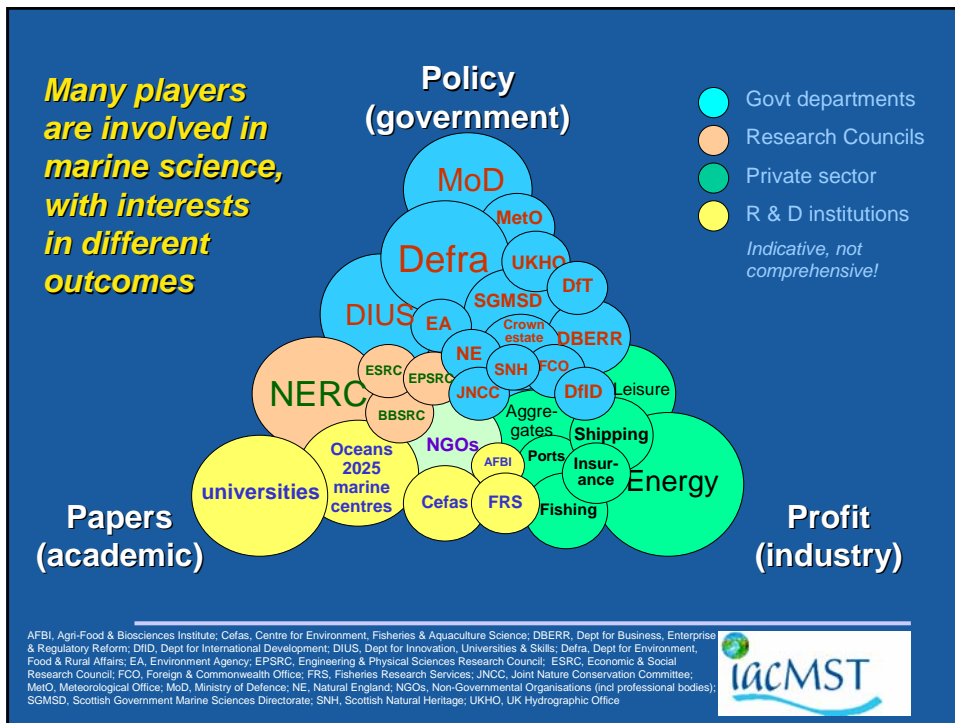


... and more

9. Need for early warning of changes in Atlantic conveyor
10. Methane hydrates – may worsen problem of global warming, or may provide exploitable energy source
11. Tsunami risk for UK and western Europe?
12. High resolution seafloor maps required for coastal management – and for shelf-edge territorial claims

Marine science has potential for billion £ positive benefits (avoiding negative impacts), yet not clear ownership for research investment responsibilities





IACMST achievements

Focus on three key areas:

- Ocean observing systems and state of our seas
- Data and information management
- Promoting multi-sector, science-policy dialogue. Example: Report on underwater sound and marine life



UK GOOS* Strategic Plan

- overview of GOOS and international context
- examples of achievements and benefits to UK from international collaboration
- catalogues UK's current contributions, identifies shortfalls, and recommends priorities for increased resources
- shows how UK should deliver contributions at European and international levels
- Mostly to be implemented via UKMMAS, priorities costed and used to inform CSR bid



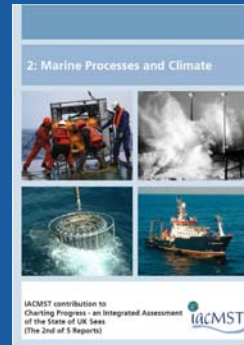
*Global Ocean Observing System



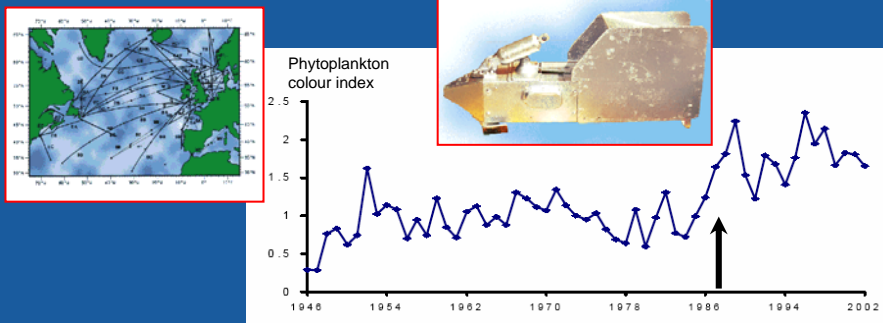
Marine Assessments

Marine Processes and Climate contribution to 'Charting Progress' Report - published March 2005

- one of 4 sector contributions



Importance of long-term observations

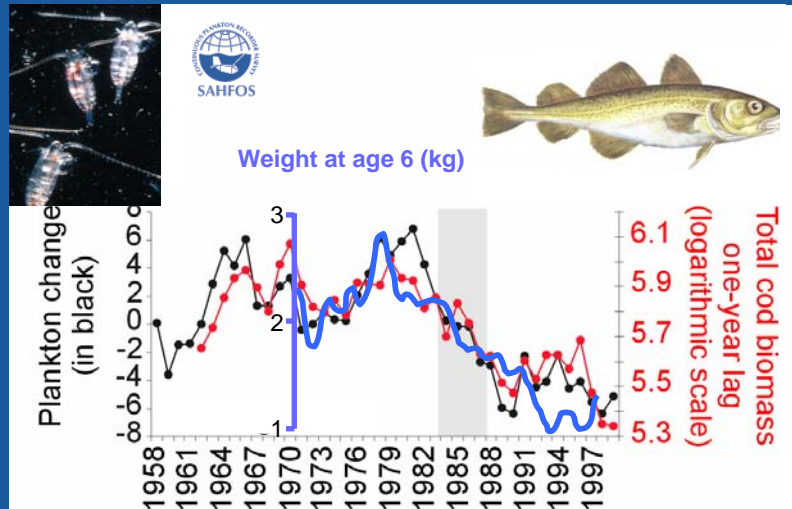


- Regime shift in 1987
- Changes in composition of dominant phyto- and zoo-plankton species
- Changes in distribution and abundance of some fish and bird species



– with changes in zooplankton closely correlated with abundance and growth rate of cod

Beaugrand *et al*, Brander *et al* 2002

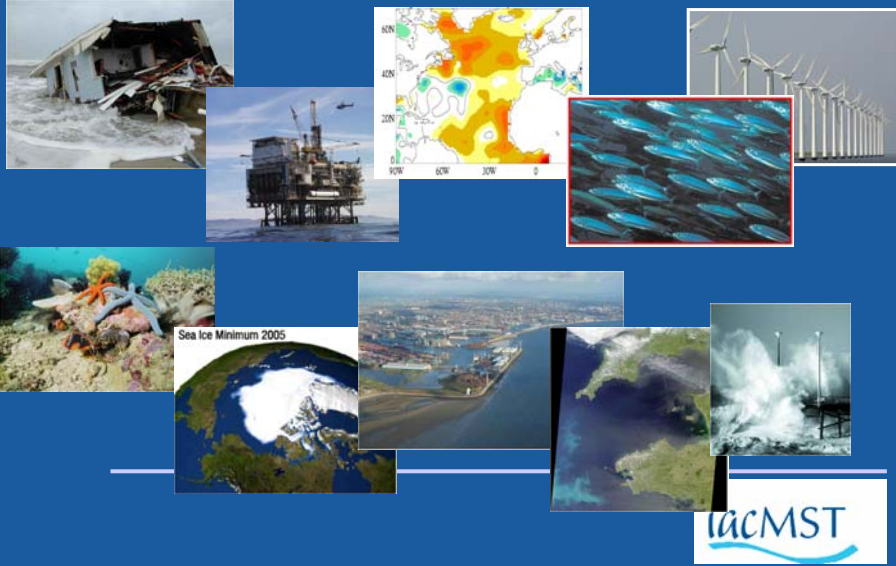


Funding long-term monitoring

- IACMST has played key role in keeping Argo and Jason-2 funding alive
- Identified need for new cross-departmental funding mechanism for monitoring (still to be resolved)

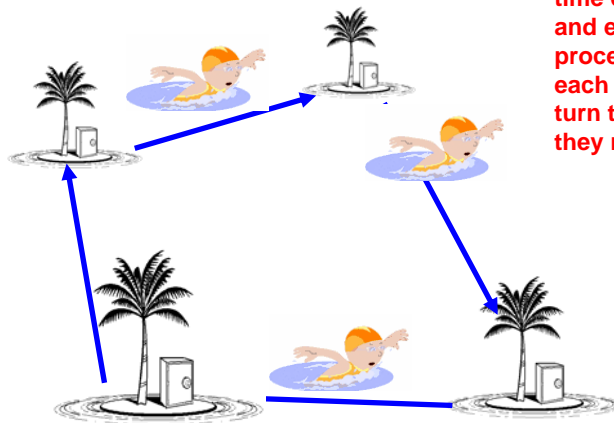


Data management to meet multiple needs and evolving challenges



Islands of data, gathered independently, for different purposes, of different standards and quality...

With a succession of initiatives repeating the same time consuming and exhausting process of visiting each data set in turn to get what they need

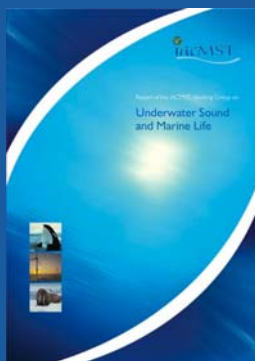


The Marine Data and Information Partnership (MDIP)

- A collaborative and open partnership, addressing the need to harmonise and coordinate the management of marine data and information in the UK.
- Sponsors (see below) + additional public and private sector involvement (~30 organisations in all)
- Pilot phase nearing completion
- Now securing (increased) funding for main implementation phase



Short-life working groups



- Hot topic of underwater sound & marine life
- Cross-sectoral approach i.e. not just naval sonars
- 9 recommendations for Government (spanning research to policy)
- Forum established under IACMST to progress recommendations
- Broad membership:
 - Defra, MoD, BERR, FCO, DfID, SEERAD, NERC (SMRU, NOCS, BODC), EA, Met Office,
 - oil/gas industry, QinetiQ, WorleyParsons Komex
 - IMarEST, Marine Connection (NGO)
 - Southampton and Plymouth Univs)



- **Many IACMST achievements have come from bottom-up approach**
- **Resources: member subscriptions + in-kind effort**
- **...but why has top-down coordination been so weak?**



How IACMST came to be

“UK marine science is poorly co-ordinated, fragmented and underfunded” *House of Lords Science & Technology Committee, 1986*

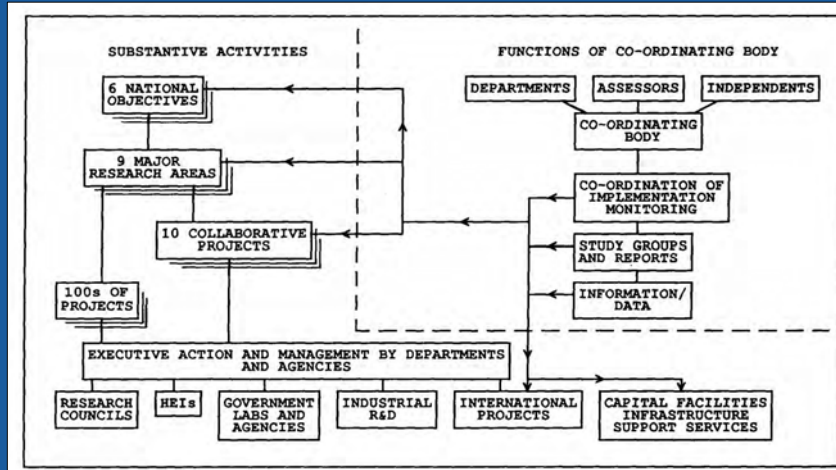
Government response: Establishment of Co-ordinating Committee on Marine Science & Technology (CCMST)

CCMST role included development of strategic framework. Published in 1990, this identified six objectives:

- **Environmental protection of oceans, seas, coastal waters and their living resources**
- **Exploitation of ocean resources**
- **National defence**
- **Prediction of climate change and its effects**
- **Marine technology**
- **Statutory and regulatory obligation**

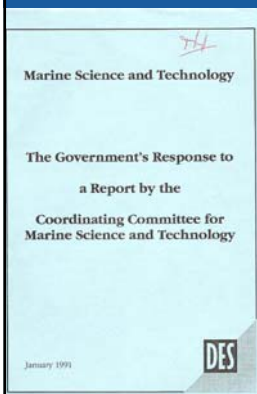


The strategic framework proposed by CCMST



CCMST → IACMST

1991 Government response:



- Accepted the six objectives as providing overall guidance
- Did not accept that “framework should be implemented by strong coordinating body”
- Set up Inter-Agency Committee for Marine Science & Technology (excluding industry, HEIs) to provide overall coordination and steer on specific issues
- Funding limited to Secretariat (paid by NERC) and support for report/meeting costs

‘Talking shop’..... with constrained remit and inadequate resources for task

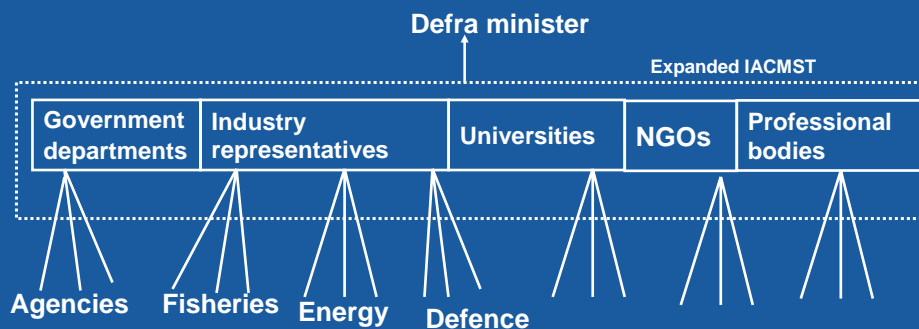


Conclusions from IACMST Retreat, 8-10 Oct 2007

- need UK marine science & technology strategy
 - led by cross-government group/committee reporting to Government CSA
 - IACMST could lead, provided that adequate resources made available
 - needs to embrace devolved administrations (already IACMST members)
- continue idea of short-life WGs on science/policy interface - ocean acidification?



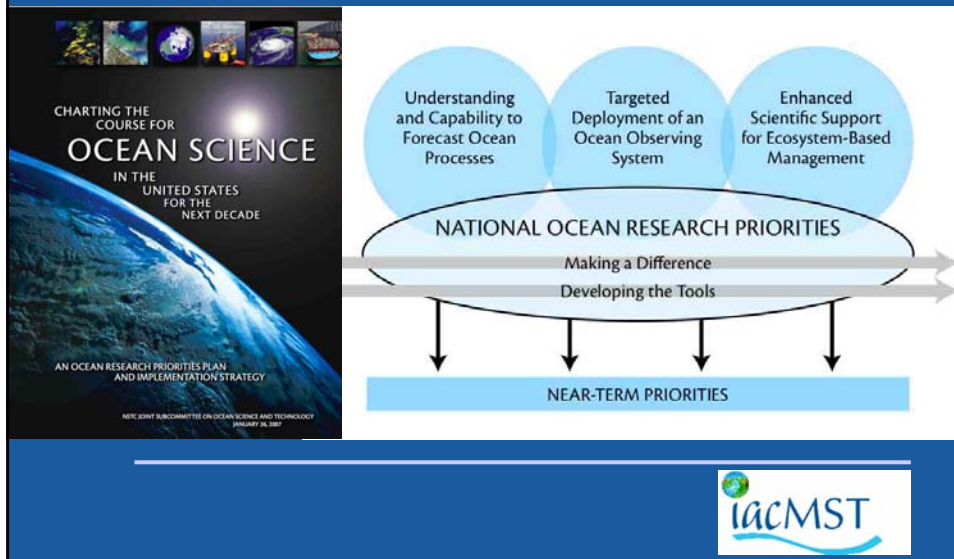
Developing a strategy



- Engage widely but not exclusively - may need funding to ensure this
- IACMST has basic structures in place - could start immediately
- IACMST members have experience in developing strategies
- Has links to international science community
- Use some of ideas from US Strategy as initial basis



US Strategy (January 2007)



And finally....

- In order to work needs:
 - Proper resourcing to develop strategy
 - Commitment from partners to implementation
- Can't afford to go round loop of last 20 years again