

DINNER/DISCUSSION SUMMARY**Investigating the oceans – how should UK marine science be organised?**Held at The Royal Society on 20th November, 2007

We are grateful to
The Challenger Society, Institute of Marine Engineering, Science and Technology (IMarEST)
and the National Oceanography Centre, Southampton for supporting this event

Chair: **The Earl of Selborne KBE FRS**
Chairman, The Foundation for Science and Technology

Speakers: **Phil Willis MP**
Chairman, Former House of Commons Select Committee on Science and Technology
Sir Howard Dalton FRS
Chair of InterAgency Committee on Marine Science and Technology (ICMST)
Dr Colin Grant
Engineering Technical Authority for MetOcean, BP Exploration

MR. WILLIS said the foundation for his Committee's report was that oceans were fundamental to the sustainability of life, and the provision of services. Although NERC (National Environmental Research Council) had achieved much, it was 20 years since the House of Lords Report and new concerns had arisen. Oceans were in danger of being taken for granted; we did not understand the impact of sea on coastal shelves; carbon capture and sequestration in the ocean was important. The Committee's findings had confirmed the high status of British scientists; had aroused concern about the loss of scientists abroad; revealed a lack of understanding about marine policy and the potential for exploitation of the marine environment. The Committee had urged the importance of long term monitoring and the need for significant investment and improved coordination¹. Although the IACMST (InterAgency Committee on Marine Science and Technology), had done excellent work, it lacked the powers, membership and resources to be an effective driver and coordinator. A new agency was needed, reporting to a DEFRA Minister, which would have executive powers, play a major role in the Marine Bill, and provide leadership and coordination. It would be able to develop long term programmes for data collection and ensure collaboration nationally and internationally. There must be rapid progress on the Marine Bill – now unlikely to be passed before the next election – and ensure that the government had in place a marine strategy (as in other countries) which would enable them to deal effectively with EU directives on both the marine environment and shipping. The marine strategy should be driven by a dedicated Minister who would be a marine "champion" in the Cabinet. In short, a radical restructuring, a comprehensive strategy and clear leadership are essential.

SIR HOWARD DALTON welcomed the Select Committee's report. He stressed the importance of research in order to understand rising sea levels, the contribution oceans could make to carbon capture and renewables, acidification, biodiversity and meteorological forecasting. Economically and socially, there were enormous benefits to be gained from understanding and proper exploitation. His concern was

that there was no clear responsibility for research investment, and uncertainty about the functions and practice of the large numbers of stakeholders in business, government and universities. We must understand the vital function of continuing observing systems and international collaboration. The IACMST had many achievements in promoting observing systems, data management and international cooperation and chartering progress on long term marine assessment. But the problems were cross-departmental funding mechanisms, and developing data management to accommodate new demands. There was a problem of inhibition of data flow between "data islands". IACSMT had developed a bottom-up approach, focusing on specific issues, but a top down approach was now needed for coordination and resource policy. The IACSMT had suggested a cross departmental group, reporting to the Government Chief Scientist, with more resources, and including the devolved administrations, universities, professional bodies and business.

DR. GRANT explained that he had given evidence to the Select Committee, and was speaking from the standpoint of the end user – BP in his case – to whom marine knowledge and research on "metocean" (i.e. meteorology and oceanography) was essential. The process in BP of developing off-shore projects went through various stages – access, appraisal, definition, operation and decommissioning, in all of which wind, weather, wave and sea information were vital. It was a question of easy access to the necessary information, at initial stages relying on public data. The UK position was strong on operation, but less useful in earlier stages. BP, as other energy companies did, of course, site specific research for its own purposes, and there was an increasing willingness among companies to share information, as it was realized that there was mutual benefit in understanding sea conditions. But the companies were heavily reliant on weather forecasting and making information available to assist in developing it. In the UK, a problem was that there were so many Departments with interests and a lack of coordination between them. He had been on a sub committee of IACSMT, but was sure business would wish to be represented on any full committee. Business was willing to share information, but government needed to coordinate it and define priorities.

¹ NERC have advised that they are resubmitting the evidence sent to the Select Committee on marine science funding.

We needed to improve access to information held in different departments, consider licensing arrangements to make use of information and be assured that the government would support a global infrastructure.

A number of speakers in the subsequent discussion were concerned about the relationship of marine science to policy making, and the links between maintaining long-term monitoring programmes and short term and fragmented financing arrangements. Although the question for debate was framed to focus on arrangements for organizing marine science, the Committee's report had rightly gone wider and considered how marine policies should be progressed and given sufficient priority. For that reason, some had doubts about the IACMST suggestion that the Government Chief Scientist was the right person to chair such a committee, which needed clear policy leadership, to report to. It was only if a senior Minister – a “champion” in Mr. Willis' words – were persuaded that a marine policy was vital, politically and economically, that he could lead his colleagues to agree to fund, on a long-term, and on an adequate basis, scientific research. But, of course, the scientific case for such research had to be made to him and here it was important that all players should participate. It had been a mistake to exclude business and universities from the IACMST when it was set up in 1991 and any new committee or agency should rectify this error.

Why was there such a poor follow up to the House of Lords 1986 report? It was because there was no political leadership to drive forward its recommendations – understandably, perhaps, because at the time, the importance of the oceans for sustainability and life enhancement had not been recognized and – as a speaker cruelly put it – the inhabitants of the sea don't have votes. The position was different now, in particular because the importance of understanding and ameliorating or adapting to, the consequences of global warming, has become a political priority. But it was not only the politicians who had been at fault. The scientific community itself had failed to work together to formulate the case for greater priority to be given to marine data and information, and to link it to atmospheric and terrestrial information systems. There was now, thanks to the Committee's work and its report, a new chance to make the case, and it must be seized. The importance of the oceans to the weather, to health, to trade, and to transport, must be sold to society in order to raise the importance of scientific understanding of their role to politicians. The view was expressed that it did not matter much whether a reconstructed IACSMST or an Agency followed on from the report – neither could make policy, only implement it because there were so many and varied government departments interested in the subject, no one Departmental Minister could work effectively on his own; there would probably need to be a Cabinet Committee to formulate and progress policy, but for this not to breed delay, it would need the Prime Minister's personal drive to stimulate it. Although it had been suggested that an Agency was needed to formulate policy, and not just to implement policy already decided, this was unrealistic. It indicated an over simplified understanding of policy formation which was not consecutive, but concurrent. Scientific input took place in the context of policy aims, but policy aims were continuously modified by scientific input. But nothing really happened unless there was political conviction that it must be done.

Political ownership of the necessity of marine scientific research and the proper long term funding of observing systems would be greatly enhanced if the link between meteorology and oceanography was made clear. The ex-

perience of NOAA (the National Oceanic and Atmospheric Administration) in the USA was relevant. This had been established by Presidential decree and recognized the symbiotic nature of the atmosphere and the oceans. As a result the science and long term observing systems in both areas needed to be funded together. NOAA had problems, because it had no statutory basis and could not rely on continuing support, but the concept of an agency with such a comprehensive remit, could be usefully emulated here. But the impetus behind the Presidential decree had been the recognition of the economic importance of the marine environment, and the ability of business to use it. No doubt this was true of the UK economy as well, but there had been no systematic work done on economic benefits which might convince Treasury Ministers (although a refinement of an existing estimate of 5% of GDP was now in progress), and no independent economic adviser on IACMST. If Government were unwilling to set up and support an independent body, such as NOAA, to undertake long term observation, then if, the issue was as important as we think, it should be possible to obtain sponsorship for it from those concerned with the future of the earth. Endowment of such a body was crucial; it should not just rely on Government handouts.

Speakers expressed some concern about the draft Marine bill. It was too narrowly drafted and did not fully recognize the importance of long term observation systems about ocean behaviour, although its proposals about Marine Protection Zones were welcomed. It should be a DEFRA, not a Department of Transport led bill, and although it should be brought forward quickly, it should not precede the Government's response to the Committee's report (a response is required in 60 days, so this should be possible).

Sir Geoffrey Chipperfield KCB

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British Antarctic Survey:

www.antarctica.ac.uk

CEFAS:

www.cefes.co.uk

Challenger Society:

www.soc.soton.ac.uk

House of Commons Select Committee on Innovation, Universities and Skills:

www.parliament.uk/parliamentary_committees/ius.cfm

Department for Environment, Food and Rural Affairs:

www.defra.gov.uk

Hydrographic Office:

www.ukho.gov.uk

Institute of Marine Engineering, Science and Technology:

www.imarest.org

Investigating the Oceans Inquiry Report:

www.publications.parliament.uk/pa/cm200607/cmselect/470/470i.pdf

Marine Biological Association:

www.mba.ac.uk

Maritime Information Alliance:

www.infomarine.org

Met Office:

www.metoffice.gov.uk

National Oceanography Centre, Southampton:

www.soc.soton.ac.uk

Natural Environment Research Council:

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Plymouth Marine Laboratory:

www.pml.ac.uk

Proudman Oceanographic Laboratory:

www.coastobs.pol.ac.uk

Scottish Association for Marine Science:

www.sams.ac.uk

Workshop Record Note

Investigating the Oceans

Held at The Royal Society, 6-9 Carlton House Terrace, London on 20th November, 2007

We are grateful to
Oceanology International for supporting this workshop

Chair: The Earl of Selborne KBE FRS

Speakers: Sir Howard Dalton FRS, Chair of the InterAgency Committee on Marine Science and Technology
Professor Ed Hill, Director, National Oceanography Centre, Southampton

SIR HOWARD DALTON referred to the House of Lords 1986 Select Committee Report, which had identified the need for the government to provide a strategic framework and articulate objectives for marine science and policy. However, the Government, in response, had not done this, but had set up in 1991 the InterAgency Committee on Marine Science and Technology (IACMST). This body did not include all stakeholders, such as business and the universities, had few resources, and had, in consequence, become little more than a talking shop. But, even so, it had done valuable work, and, if restructured, could be the focus for a viable scientific strategy. The recent Select Committee report thought that there should be a new agency reporting to a DEFRA Minister, although the IACMST had suggested reporting to the Government Chief Scientific Adviser.

DR HILL said that the fundamental problem was that neither the Government nor the public understood the importance of the oceans for health, waste disposal, resources, food, water and above all, climate change. A unified strategy was essential - the EU will require it and we should be in advance of any such requirements. Globally, marine bodies were coming together, but in the UK there were fracture zones which inhibited capacity. Four such divides were transferring data between trading and non-trading funds; observation for science (long term) and for operational purposes; devolution - Scottish and English priorities differ; and divergence between industry and government funded science. A holistic strategy was needed which looked at science thematically and not just a particular aspect. The IACMST was not the answer; the Committee's report should galvanize action.

The following points were made in the discussion.

1. The marine community welcomed the Committee's report. But what can it do to promote its recommendations and encourage a good Government response? The problem was that it was not united and had differing priorities.
2. The Committee had recommended that a new Agency be set up to coordinate marine scientific activity. But was this necessary, or would it be likely to be effective/why disrupt the existing network and IACMST, which already

included Scotland and could be widened in its membership. What would the Agency do? It could not be a policy making body - that was for Ministers. Besides which, an Agency would be resisted by Departments who would see it as appropriating some of their funding.

3. Were we discussing marine science or policy? It was the gap between the two which was of concern, not only because science was sometimes ignored or downplayed, but because it took far too long for science to be incorporated into policy change (fifteen years in the case of climate change) unless there was a strategic policy, how could one decide how to formulate a scientific strategy and devise structures which could deliver it? Science must be seen in the context of deliverable policy, but its structures are essentially a matter for the Department for Business, Enterprise and Regulatory Reform and the Department for Innovation, Universities and Skills.

4. It was very difficult to develop a coherent policy (whether scientific or political) because of the number of Departments involved, some of whom - Department for Environment, Food and Rural Affairs - regarded it as of major importance, and some of whom - the Department for Transport - did not. There were also the Scottish/ England differences, and new issues, such as offshore wind farms.

5. So was it possible to construct a unified or joined-up science policy if political policy was not joined-up? Was there hope from EU pressures, with new directives forcing changes in policy formation and outcomes, but for which we do not have the scientific resources?

6. The development of a marine strategy by the government must be based on science, but the science input must - as already said - be informed by the policy objectives. Ideally, the two - political and science strategy - should proceed concurrently. But such integration was difficult. One always tended to precede or follow the other.

7. There were lessons to be learnt from the US National Oceanic and Atmospheric Administration (NOAA). It was established by Presidential decree and had a specified budget line. It was not just a coordinating body but ac-

tively progressed issues. It was a focus for long term atmospheric and ocean observational data, but did not cover all marine activities. Although it had no statutory basis and was therefore dependent on Presidential whim, its establishment had recognized the vital importance for national economic policy of having long-term observations. It would always be likely to command considerable support.

8. US industry had bought into NOAA and the need for long term data. It was noticeable that most observational equipment now came from US companies. It was not just getting the data; it was adding value to that data that was important.

9. One should distinguish between long term issues - monitoring long-term data - which need a coordinating body, and short term ones, which merely need fixing by a policy decision - e.g. data sharing between trading and non trading funds.

10. Industry would support the Marine bill and coordination of long-term observational data. They need detailed data for operational work, but it can only be understood in the context of long-term data - which the Government must be responsible for providing.

11. There is a major problem in the way marine science budgets are funded by a number of Departments - if one cuts the budget, the others will also do so. There needs to be a coordinated budget, which would cover both long term science and operational requirements. (The Cooksey Report recommendations for Health Research were a possible analogy). But could such a budget be ring fenced? The sums were not large, but must be consistently found.

12. How do we get over the fact that marine science is crucial to tackling major policy issues such as climate change? Who, in government, will take the lead in establishing it as a major scientific priority? Individual Departments will not do it. Is a Cabinet Committee the answer?

Probably not, unless the Prime Minister decides that this priority must be addressed and a "champion" is found who will drive policy forward. There is a crucial role for the scientific community in emphasizing the centrality of long term marine and atmospheric data collection for economic policy.

13. There is a danger in seeking to sell marine science as being part of the solution to all economic and environmental problems. The scenario could become too wide ranging and never find a "champion" who could focus on specific issues.

LORD SELBOURNE concluded the workshop by saying that what had come out of the discussion was that there were fundamental issues that only the Government could solve, but that they needed active public support from the scientific community. The Select Committee's report was welcome, but it was only a start. There were both institutional and financial concerns about some of its recommendations, but its central message - that the Government must appreciate how vital the oceans were to the future of the UK (indeed the world) and fashioned its response so that action followed - was welcomed by all.

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