

Oceanography Committee (OCC) Resolutions 2006

2006/2/OCC01 A Planning Group on Phytoplankton and Microbial Ecology (PGPYME)
 (Chairs: J. Steele*, USA, Franciscus Colijn*, Germany, and Ted Smayda*, USA) will be established and work by correspondence to:

- a) consider the formation of a new expert group covering the field of microbial dynamics including phytoplankton ecological processes;
- b) formulate initial ToRs for such a group;
- c) suggest Chair and potential members.

PGPYME will report by 1 February 2007 for the attention of the Oceanography Committee.

Supporting Information

PRIORITY:	After disbanding the WGPE there is an urgent need to setup a new active group which should cover and incorporate new knowledge on biogeochemistry , microbial and phytoplankton ecology into the Ecosystem approach
SCIENTIFIC JUSTIFICATION AND RELATION TO ACTION PLAN:	Recent advances in marine microbial ecology have made us aware of the complexity of these processes and their importance for all stages of ecosystem productivity. The same holds for the interaction of viral-bacterial-phytoplankton ecological processes with abiotic (nutrients, physics) and biotic factors which are the basis of marine foodwebs.
RESOURCE REQUIREMENTS:	Participation of members from all ICES countries.
PARTICIPANTS:	The Group should have the size of 15-25 scientis from academia and oceanographic institutes
SECRETARIAT FACILITIES:	None.
FINANCIAL:	No financial implications.
LINKAGES TO ADVISORY COMMITTEES:	There are no obvious direct linkages with the advisory committees.
LINKAGES TO OTHER COMMITTEES OR GROUPS:	There will be a strong interaction with other experts groups within OCC such as WGZE, WGHABD and WGRP, and modelling activities e.g. in WGPBI
LINKAGES TO OTHER ORGANIZATIONS:	The work of this group would be closely aligned with similar work in the Census of Marine Life Programme.

2006/2/OCC02 A **Planning Group on Operational Oceanographic Products** [PGOOP] (Chair E. Svendsen*, Norway) will be established and work by correspondence to:

- a) consider the formation of a new expert group covering the field of operational oceanographic products;
- b) formulate TORs for such a group;
- c) suggest Chair and potential members.

PGOOP will report by 1 February 2007 for the attention of the Oceanography Committee.

Supporting Information

PRIORITY:	There is an urgent need to setup an active group which should cover and incorporate the field of operational oceanographic products into ICES to be able to support fisheries assessments and other ecosystem approach related activities
SCIENTIFIC JUSTIFICATION AND RELATION TO ACTION PLAN:	<p>Term of Reference</p> <p>Recent progress in operational oceanography has been demonstrated through the ICES Report on Ocean Climate and several other Status reports such as On Harmful Algal Blooms and Zooplankton. Based on the outcome of ToR C of the WG on Modelling Physical and Biological Interaction, WGPBI, it is recommended that the work on model products and model generated indicators will continue in a separate ICES working group on operational oceanography. The WGPBI recommends further that this is discussed intersessionally with the ICES-IOC Steering Group on GOOS and the ICES-EuroGOOS Planning Group on the North Sea Pilot Project in order to include also the tasks of these groups into the new working group. In addition we should include the WGOH to discuss more frequent updates of the ocean climate status.</p> <p>Justification:</p> <p>The challenging tasks of WGPBI requires mostly active scientist while operational oceanography has to be implemented and maintained by operational people.</p> <p>GOOS, Coastal GOOS and regional operational oceanographic systems are now being implemented at all scales. ICES' advisory system will be depending on the products and services of these systems. An ICES working group on operational oceanography can formulate the ICES requirements, plan the production and also co-ordinate an ICES contribution to GOOS.</p> <p>Continue to investigate (pre)operational applications of PBI models with special focus on the availability of its products.</p> <p>There is a strong need to evaluate the wishes of the users/clients regarding the products needed to fulfill their requirements.</p>
RESOURCE REQUIREMENTS:	None
PARTICIPANTS:	The Group should have participants from organisations dealing with operational services and/or development of operational techniques
SECRETARIAT FACILITIES:	None.
FINANCIAL:	No financial implications.
LINKAGES TO ADVISORY COMMITTEES:	There are direct linkages with the advisory committees.
LINKAGES TO OTHER COMMITTEES OR GROUPS:	There would be a strong interaction with other experts groups within OCC such as WGZE, WGHABD and WGRP, and modelling activities e.g. in WGPBI, PGNSP, NORSEPP, WGREGD, REGNS
LINKAGES TO OTHER ORGANIZATIONS:	IOC, EuroGOOS.

2006/2/OCC03 **The Working Group on Modelling Physical Biological Interactions [WGPBI]**
 (Co-Chairs: C. Hannah, Canada and U. Thygesen*, Denmark) will meet in Bergen, Norway
 from 25–28 March 2007 to:

- a) present and discuss new results concerning physical-biological interactions;
- b) complete the publication of papers from WKAMF;
- c) complete the Manual of Recommended Practices for Modelling Physical-Biological Interactions in Fish Early-Life History;
- d) review existing operational data flow from sustainable observational and modelling systems such as GOOS and report on activities relevant for the work of WGPBI;
- e) report on promising alternative approaches for ecosystem modelling;
- f) assess the state of the art in the study of small scale feeding processes (with particular reference to zooplankton and fish larvae) and make recommendations for model parameterisation;
- g) complete the review of maximum phytoplankton growth rates and primary production as function of temperature;
- h) collaborate with WGRP to enhance the use of physical-biological models for prediction of fisheries recruitment;
- i) take part in the intersessional work led by PGPYME in developing the mission and draft resolutions for a new Expert Group related to phytoplankton and microbial ecology;
- j) take part in the intersessional work led by PGOOP in developing the mission and draft resolutions for a new Expert Group related to operational oceanographic products and services.

WGPBI will report by 13 April 2007 for the attention of the Oceanography Committee.

Supporting Information

<p>PRIORITY:</p>	<p>The WG should be given high priority, since it is concerned with the evaluation and development of the modelling tools used to increase the understanding of the interaction between the living resources in the sea and its ambient physical and abiotic environment. This understanding is essential to the successful development of predictive capability of the state and evolution of the ecosystem for issues such as harmful algal blooms, eutrophication, marine protected areas, fish recruitment, and global change. This contributes directly to fulfilling the vision of ICES, “to improve the scientific capacity to give advice on the human impact on, and impacted by, marine ecosystems.”</p>
<p>SCIENTIFIC JUSTIFICATION AND RELATION TO ACTION PLAN:</p>	<p>The work of WGPBI contributes to the following ICES Activities: Action Plan no. 1.5 (modelling biological-physical interactions in the sea), Action Plan no 1.1 (provide feedback about research needs), Action Plan no 1.2 (increase knowledge with respect to functioning of the ecosystem). Contributions towards other Activities are noted in the justification below. a) Providing a forum for the presentation and discussion of new results is an important component of the Group’s mandate. b) Nineteen manuscripts based on oral and poster contributions at the recent workshop on ‘Advancements in Modelling Physical-Biological Interactions in Fish Early-Life History: Recommended Practices and Future Directions’ (WKAMF) are planned for submission to <i>Marine Ecology Progress Series</i>. Workshop co-chairs will serve as guest editors and contribute an overview article.</p>

<p>SCIENTIFIC JUSTIFICATION AND RELATION TO ACTION PLAN: (CONTINUED)</p>	<p>c) The participants at WKAMF agreed to develop a “Manual of Recommended Practices for Modelling Physical-Biological Interactions in Fish Early-Life History”. They formed four teams to coordinate manual development on four themes: particle tracking, connectivity, recruitment prediction, and adaptive sampling. The workshop co-chairs will coordinate the overall development of the manual. The final draft will be submitted to WGPBI and WGRP members one month prior to the 2007 WGPBI meeting to allow for review and discussion at the meeting. A decision will be made at the 2007 WGPBI meeting regarding the appropriate means of dissemination, potentially as an ICES Cooperative Research Report. For WGPBI this activity represents the first step in the development of such a manual for the broader PBI field.</p> <p>d) For WGPBI to contribute to embedding useful PBI modules into operational models, the WG needs a greater understanding of the current generation of operational models.</p> <p>e) Unifying biological principles, such as thermodynamic considerations and body size scaling, offer the potential to derive ecosystem models for plankton dynamics that are in some sense unified models for wide ranges of marine species. One motivation for these new approaches is that traditional ecosystem models are based on extensions of single species models and require detailed quantitative knowledge of all relevant species. The process seems endless as ecologists and physiologists uncover relevant species and processes at rates that far exceed those at which high-quality quantitative knowledge on species becomes available. The WG will devote ½ day to a discussion of the strengths and weaknesses of alternative approaches to ecosystem modelling with a focus on the capability to generate reliable quantitative predictions of biological variables.</p> <p>f) The need for improved models of zooplankton has been identified as the key to linking primary production to larval fish in ecosystem models based on first principles. As such there is a need to assess the state of the art in the study of small scale feeding processes (with particular reference to zooplankton and fish larvae) and make recommendations for model parameterisation.</p> <p>g) It is well known that for each species of phytoplankton, the maximum growth rate is a function of temperature. The question is ‘Does temperature limit the maximum growth rate of the community?’ or ‘Is there always a species that can grow rapidly at the given temperature so that primary production is roughly independent of temperature?’ This has important implications for modelling and our current techniques for assessing the response of an ecosystem to temperature changes.</p> <p>h) Members of WGPBI and WGRP (Working Group on Recruitment Processes) share the common goal of enhancing, guiding, and promoting use of coupled physical-biological models for prediction of fisheries recruitment. Close coordination between Working Groups is required to prevent duplication of efforts. WGPBI members will continue to work together on the activities that follow from WKAMF.</p> <p>i) The work of the proposed new Expert Group will be relevant for WGPBI.</p> <p>j) The work of the proposed Expert Group will be relevant for WGPBI.</p>
<p>RESOURCE REQUIREMENTS:</p>	<p>Participation by Vivian and Louise required.</p>
<p>PARTICIPANTS:</p>	<p>The Group is normally attended by some 20–30 members and guests. The Working Group benefits from the participation of those outside of the modelling community. Observational and experimental scientists with an interest in physical-biological interactions are encouraged to attend.</p>
<p>SECRETARIAT FACILITIES:</p>	<p>None.</p>
<p>FINANCIAL:</p>	<p>No financial implications.</p>
<p>LINKAGES TO ADVISORY COMMITTEES:</p>	<p>ACFM, ACE</p>
<p>LINKAGES TO OTHER COMMITTEES OR GROUPS:</p>	<p>ICES-IOC Working Group on Harmful Algal Bloom Dynamics, WGRP, BSRP, SGRESP</p>
<p>LINKAGES TO OTHER ORGANIZATIONS:</p>	<p>The work of this group is closely aligned with similar work in GEOHAB (IOC/SCOR), GLOBEC (IOC/SCOR), IMBER and PICES.</p>

2006/2/OCC04 The **Working Group on Zooplankton Ecology** [WGZE] (Chair: A. Gislason, Iceland) will meet in Riga, Latvia from 26–29 March 2007 to:

- a) update the ICES Plankton Status Report;
- b) review the role of microzooplankton, including metazoans, in marine food web;
- c) compare the zooplankton ecology of the North Atlantic and the Mediterranean;
- d) review the use of numerical methods in exploring and predicting long-term plankton variability in relation to climate;
- e) review and consider the impact on zooplankton communities of introduced or disappearing species;
- f) consider rate process studies and zooplankton phenology in association with time-series monitoring;
- g) consider the development of web-based taxonomic training and the promotion of the ICES WGZE to a wider community;
- h) review and consider species biodiversity in zooplankton from coastal zones to oceanic deep sea: progress and prospects for the European Census of Marine Life Project (EuroCOML);
- i) discuss and report on quality assurance and control guidelines for sampling and analytical practices for zooplankton;
- j) provide expert knowledge and guidance to ICES Data Centre (possibly via sub-group) on a continuous basis;
- k) take part in the intersessional work led by PGPYME in developing the mission and draft resolutions for a new working group related to phytoplankton and microbial ecology;
- l) assess and report on changes in the distribution, population abundance and condition of zooplankton in the OSPAR maritime area in relation to changes in hydrodynamics and sea temperature (further details on the interpretation and handling of this ToR will be provided by ACE);
- m) assess and report on changes in the distribution, population abundance and condition of phytoplankton in the OSPAR maritime area in relation to changes in hydrodynamics and sea temperature (further details on the interpretation and handling of this ToR will be provided by ACE).

WGZE will report by 1 May for the attention of the Oceanography Committee, ACE and ACME.

Supporting Information

<p>PRIORITY:</p>	<p>The activities of this group are a basic element of the Oceanography Committee, fundamental to understanding the relation between the physical, chemical environment and living marine resources in an ecosystem context. Reflecting the central role of zoo-plankton in marine ecology, the group members bring a wide range of experienced expertise and enthusiasm to bear on questions central to ICES concerns. Thus the work of this group must be considered of very high priority and central to ecosystem approaches.</p>
<p>SCIENTIFIC JUSTIFICATION AND RELATION TO ACTION PLAN:</p>	<p>Action Plan: 1.2 - 1.13; 2.2, 2.9, 2.10; 3.2, 3.3, 3.15; 4.2, 4.10, 4.11, 4.14, 4.15; 5.2 – 5.5, 5.9, 5.10, 5.13 – 5.17; 6.1; 8.1, 8.2, 8.4, 10.1, 10.3</p> <p>ToR a) This is a repeating task established by the Working Group in 2000 to monitor the plankton abundance in the ICES area. The material presented under this item updates and expands the annual Summary Plankton Status Report in the ICES area. Reported results are significant observations and trends based on a wide range of time-series sampling programmes. Efforts are in hand to expand the report, to include phytoplank-ton and elementary physics and to facilitate comparative analyses and setting monitoring standards and recommrndations.</p> <p>ToR b) Microzooplankton constitute a significant component of the plankton community in many marine environments. Owing to their small size they typically have higher</p>

weight-specific growth rates than larger metazoans. Hence, they are important phytoplankton grazers in many marine systems, capable of exploiting pico- and nanoplankton. Microzooplankton may in turn be eaten by larger metazoans of the plankton community and thus they form an important link in the “microbial loop” between pico- and nanoplankton and higher trophic levels. Due to lack of proper methodology for collection, preservation and difficulties in identification, their ecology is relatively poorly understood. With all this in mind WGZE members feel it is important to explore and discuss the role of microzooplankton in the marine food web.

ToR c)

It is recognized that there is a movement towards broader and more global syntheses and comparisons in the research community, particularly being driven by the process and implications of climate change for marine ecology generally. The WGZE members are keen to forge links with their fellow plankton scientists in CIESM as there is much to be learned and gained through exchange and collaboration. There is need for coor-dinated approaches to plankton monitoring in the two areas (e.g. overview of metadata, harmonization of sampling and sample processing), and comparison of the zooplankton ecology in the two areas. Links between plankton in the North Atlantic and the Mediterranean need to be explored.

ToR d)

Time-series studies on zooplankton long term-trends and their relationships with climate indices (e.g. NAO, Gulf Stream north wall index) and global warming suggest that important changes may occur in zooplankton processes and community structure as a result of climate change. By taking account of advances in statistical and biophysical modelling approaches we seek to elucidate the links between climate change and long term zooplankton variability.

ToR e)

Appearance of new species or disappearance of established species has been noted in a variety of regions. There is a need to gather examples and examine how they may be related to changes in their environment and what the consequences might be for plankton communities and regional ecology.

ToR f)

Rate process measurements for estimating zooplankton secondary production of zooplankton have been on our agenda since 2001. Significant progress is now within reach with a sub-group of WGZE members organising a workshop to deal with this issue. WGZE feels it is important to follow the progress. Phenology can provide a powerful tool for understanding the status of species, communities and ecosystems in a changing environment. For example, the timing of spring production and the length of the productive season may change as a consequence of a changing climate. Zooplankton is – for one thing – a very good indicator of phenological change in the sea. The marine system so far has no phenological observation system, but should be initiated.

ToR g)

The WGZE has set up a site thanks to the enthusiasm of one member. This welcome initiative we need to foster and capitalise on, therefore we need to review and develop the application of this approach to our endeavours. One application is an interactive web site that may be used to create a virtual taxonomic expertise facility to promote this critical skills base. Also, the development and enhancement of the existing ICES Fiches Plankton ID sheets would be greatly assisted by available interactive web based resources. A poster and/or a PowerPoint presentation should be put together in order to advertise what WGZE does and encourage participation and collaboration by others. The information should be simple: working group name, missions statement, current members, examples of outputs, and contact details.

ToR h)

The WGZE has been very active in defending taxonomic skills in the ICES region (e.g. promoting taxonomic training courses), producing zooplankton checklists, ecological indices based on zooplankton diversity and collating data of zooplankton abundance at a wide distributed network of sampling sites. All these topics meet in the goals of Euro-CoML initiative (i.e. assessing and explaining the diversity, distribution and abundance of marine life in the oceans). WGZE is willing to collaborate with this important programme, expand partnerships and formulate future contributions with EuroCOML.

	<p>ToR i) This work is in response to the MOU with OSPAR and HELCOM for the provision of advice on quality assurance of biological measurements. It will be augmented when necessary with specific annual requests from HELCOM and/or OSPAR.</p> <p>ToR j) This is in compliance with a request from the ICES Data Centre.</p> <p>ToR k) The work of the proposed new Expert Group will be relevant for WGZE.</p> <p>ToR l) This is a request from OSPAR. The main goal is to determine to what extent the zooplankton changes reported can reliably be attributed to changes in hydrodynamics and sea temperature;</p> <p>ToR m) This is a request from OSPAR. Owing to the termination of WGPE, the Expert Group is encouraged to invite expertise (e.g. from SAPHOS) that can help to address this request. The main goal is to determine to what extent the phytoplankton changes reported can reliably be attributed to changes in hydrodynamics and sea temperature;</p>
RESOURCE REQUIREMENTS:	Resource required to undertake the activities of this group is negligible. However, ICES must be committed to provide some sponsorship and support for workshops, publication costs for the Plankton Status Report, and the 4 th Zooplankton Symposium.
PARTICIPANTS:	The group has an enthusiastic core membership, and is successfully making efforts to attract broader participation both across ICES nations and across relevant skills. The Group is normally attended by some 20-25 members and guests.
SECRETARIAT FACILITIES:	None beyond communication support.
FINANCIAL:	Beyond the 10,000 DKK support for the Symposium in 2007 and publication costs for the Plankton Status Report, no other current financial implications.
LINKAGES TO ADVISORY COMMITTEES:	The Group reports to the Oceanographic Committee, ACE and ACME (information also relevant to some ACFM aims). Mainly WGZE provides scientific information on plankton and ecosystems and welcomes input from other committees, working/study groups etc.
LINKAGES TO OTHER COMMITTEES OR GROUPS:	Any and all working and study groups interested in marine ecosystem monitoring and assessments, modelling and/or plankton studies, including fish and shellfish life histories and recruitment studies.
LINKAGES TO OTHER ORGANIZATIONS:	Links with the WGMDM, WGRP, WGCCC, WGPE and WGHABD are intended and some contact is maintained. The WGZE input to REGNS is an ongoing effort. The Plankton Status Report is of interest and practical use to a range of interested groups within ICES, PICES, CIESM, GOOS and GLOBEC with other national and inter-national research groups and agencies. Increasingly marine research, marine management and even marine institutes are re-aligning to take an ecosystem view. These linked and collaborative approaches between many working and study groups must be encouraged. IGBP, SCOR, ESF, COML/CMarZ, and others have research activities meetings etc., of interest and relevant to the activities of the WGZE. Contacts are maintained through networking and collaborative activities.

2006/2/OCC05 The Working Group on Oceanic Hydrography [WGOH] (Co-Chairs: S. Bacon, UK, and P. Holliday, UK) will meet in Västra Frölunda, Sweden, from 27–30 March 2007 to:

- a) update and review results from Standard Sections and Stations;
- b) consolidate inputs from Member Countries to, and continue development of, the ICES Report on Ocean Climate (IROC), and align data source acknowledgements in IROC with ICES policy; archive data used to compile report;
- c) provide support to other Expert Groups requiring information on oceanic hydrography in support of their responses to the OSPAR request on 'An assessment of the changes in the distribution and abundance of marine species in the OSPAR maritime area in relation to changes in hydrodynamics and sea

temperature. (Further details on the interpretation and handling of this ToR will be provided by ACE; Expert Groups requiring support have been asked to contact WGOH).

- d) review and improve relations with international climate monitoring programmes;
- e) take action for strengthening the role of WGOH and physical oceanography within ICES;
- f) review the value of the NORSEPP status report;
- g) conclude and report on the isopycnal analysis of *in situ* data;
- h) provide expert knowledge and guidance to ICES Data Centre (possibly via sub-group) on a continuous basis;
- i) take part in the intersessional work led by PGOOP in developing the mission and draft resolutions for a new Expert Group related to operational oceanographic products and services;

WGOH will report by 2 May 2006 for the attention of the Oceanography Committee, ACME and ACE.

Supporting Information

<p>PRIORITY:</p>	<p>The activities of this Group are fundamental to the fulfilment of the Oceanography Committee's Action Plan.</p>
<p>SCIENTIFIC JUSTIFICATION AND RELATION TO ACTION PLAN</p>	<p>Action Plan Nos. 1.2, 1.3, 1.6, 1.7, 1.10, 5.13.4, 5.14 and 6.3.</p> <ul style="list-style-type: none"> a) This is a repeating task established by the Working Group to closely monitor the ocean conditions in the ICES area. The materials presented under this item will be utilised to prepare an overview of the state-of-the-environment in the North Atlantic for 2006. b) The Working Group recognises the need for disseminating climate information in a timely and appropriate manner. This agenda item will allow WGOH members to prepare the document during the meeting, thus avoiding delays in the dissemination of the information. We will review proposed new developments in IROC content. c) This is in support of a request from OSPAR. d) Links have been made with the CLIVAR programme; it would be of benefit both to ICES and the international programmes to enhance internal information exchange. e) To follow up on the ICES General Secretary's suggestions for increasing the visibility of WGOH within ICES. To improve communications between working groups under the ICES system. f) It is important to assess and promote the use of new operational products. g) To develop a method for consistent presentation and inter-comparison of datasets to help improve understanding of changes. Products from this item will in future appear under ToR (b) in the IROC. h) This is in compliance with a request from the ICES Data Centre i) The work of the proposed Expert Group will be relevant for WGOH.

RESOURCE REQUIREMENTS:	No extraordinary additional resources
PARTICIPANTS:	WGOH members; chair of Oceanography Cttee.
SECRETARIAT FACILITIES:	N/a
FINANCIAL:	b) Publication and reproduction costs for the IAOCSS c) Assistance with publication or distribution of a special CLIVAR <i>Exchanges</i> issue
LINKAGES TO ADVISORY COMMITTEES:	ICES Annual Ocean Climate Status Summary available to the Advisory Committees on Fishery Management, Marine Environment, and Ecosystem
LINKAGES TO OTHER COMMITTEES OR GROUPS	Publications Committee; Consultative Committee; ICES/IOC Steering Group on GOOS
LINKAGES TO OTHER ORGANISATIONS:	IOC, JCOMM, CLIVAR

2006/2/OCC06 The **ICES-IOC Working Group on Harmful Algal Bloom Dynamics** [WGHABD] (Chair J. Silke, Ireland) will meet in Riga, Latvia, from 10–13 April 2007 to:

- a) review outcome of the WKEUT workshop on Long term data sets and eutrophication held 11–15 September 2006 in Copenhagen;
- b) review progress and analyses that REGNS North Sea Group have done and report on the second REGNS workshop held in Copenhagen from 15 to 19 May 2006;
- c) discuss new findings that pertain to harmful algal bloom dynamics. Bring new findings in phytoplankton population dynamics models to the attention of WGHABD for discussion;
- d) review the on-line format of HAEDAT system and developments made towards developing an integrated system and evaluate the amendments made to update historical submissions and links to mapping. Perform user identification and plan the promotion of the system;
- e) review the structure and composition of the decadal HAE maps for the ICES region with special reference to clarifying the distinction between harmful algal blooms and the harmful affects that are reported on the maps;
- f) collate and assess National reports and update the decadal mapping of harmful algal events for the IOC/ICES harmful algal database, HAE-DAT;
- g) take part in the intersessional work led by PGPYME in developing the mission and draft resolutions for a new Expert Group related to phytoplankton and microbial ecology.

WGHABD will report by 30 April 2007 for the attention of the Oceanography Committee and ACME.

Supporting Information

<p>PRIORITY:</p>	<p>The activities of this group are fundamental to the work of the Oceanography Committee. The work is essential to the development and understanding of the effects of climate and man-induced variability and change in relation to the health of the ecosystem. The work of this ICES-IOC WG is deemed high priority.</p>
<p>SCIENTIFIC JUSTIFICATION AND RELATION TO ACTION PLAN:</p>	<p>Action Plan No: 1.1, 1.2, 1.5, 1.7, 1.10, 1.11, 1.12, 2.3, 2.9, 3.2, 4.11, 5.10, 5.13, 5.16, 6.1, 6.2, 6.3, 6.4, 8.1, 8.2, 8.4.</p> <p>Term of Reference a)</p> <p>This workshop, a complex activity requiring long term data sets will provide valuable results on investigations into long term change and HAB dynamics. The WGHABD is most interested in the outcome of workshop It is appropriate that the WG evaluates the report from the workshop and promotes its dissemination.</p> <p>Term of Reference b)</p> <p>The provision of integrated advice is a challenge; it is a process, which must be supported by methods, and tools that allow diverse sources of data and information on numerous pressure and state changes to be objectively and scientifically assessed. The REGNS study group has requested that the WGHABD prepare to provide data, information and indicators. A delegate from the WGHABD attended the REGNS meeting in May 2006 and will report to the group in 2007 on the progress of the assembly and analysis of the data. In particular the relevance of HABs in defining relationships between trends measured at the broad scale (the overview assessment) with those measured on a more localised scale (the thematic assessments) will be analysed.</p> <p>Term of Reference c)</p> <p>The forum for presenting new findings has been an excellent tool for promoting the discussions about topics of general interest. There are obvious reasons to continue with this topic as a term of reference.</p> <p>Term of Reference d)</p> <p>HAEDAT is an extremely valuable dataset that is only now becoming extensively utilised. There are developments on the technical end that allow users to mount their data and query it through the Internet. This system was demonstrated to WGHABD In 2006 In an almost complete version. It Is requested that the finished version be presented In 2007, and potential uses be identified.</p> <p>Term of Reference e)</p> <p>The WGHABD feels it is important that the decadal maps be tied directly to the IOC-HAEDAT reports. Currently the decadal maps are produced manually with limited consistency and quality control. HAEDAT has been improved in recent years and it would be desired that the maps be made more user friendly and adaptable. At the 2006 meeting it was requested that a joint project between institutes with active GIS departments be investigated to attract funding to allow the development of this functionality of the HAEDAT and HAE-MAPS be established.</p> <p>Term of Reference f)</p> <p>The work of collating the national HAE reports and building up HAE-DAT and the associated maps is an activity which is unique to the WGHABD. HAE-DAT is not yet established enough to stand alone. A critical step forward is to make HAE-DAT operational with input from regions/countries outside the ICES areas as originally envisaged. PICES, South America, HANA and Caribbean countries (via IOC/FANSA and IOC/ANCA) are now included in HAE-DAT. It should be endeavoured to include HAE-DAT and the associated decadal maps as a contribution to GOOS, thereby embedding these activities in a permanent setting and securing continuity.</p> <p>Terms of Reference g)</p> <p>The work of the proposed new Expert Group will be relevant for WGHABD.</p>

RESOURCE REQUIREMENTS:	The research programmes which provide the main input to this group are already underway, and resources already committed. The additional resource required to undertake additional activities in the framework of this group is negligible.
PARTICIPANTS:	The Group is normally attended by some 20–25 members and guests
SECRETARIAT FACILITIES:	None
FINANCIAL:	No financial implications
LINKAGES TO ADVISORY COMMITTEES:	There are no obvious direct linkages with the advisory committees
LINKAGES TO OTHER COMMITTEES OR GROUPS:	WGHABD interacts with WGZE, WGPE, SGGIB, SGBOSV, WGPBI.
LINKAGES TO OTHER ORGANIZATIONS:	The work of this group is undertaken in close collaboration with the IOC HAB Programme. IOC should be consulted regarding ToR or discontinuation of the WG prior to the ASC. There is a linkage to SCOR through the interactions of the IOC-SCOR GEOHAB Programme.

2006/2/OCC07 The **ICES-IOC Steering Group on GOOS [SGGOOS]** (Co-Chairs: A. Bode, Spain and D. Mountain, USA) will meet in Gijón, Spain from 23–24 April 2007 to:

- a) identify and steer the development of global and regional linkages between ICES and GOOS bodies:
 - (i) review the outcome of the 3rd. Forum for GOOS Regional Alliances regarding the implications for ICES involvement in GOOS implementation;
 - (ii) review the outcome of the GOOS/GSSC-POGO gap analysis for GEO Workplan regarding the implications for ICES involvement in GOOS implementation.
- b) identify and steer the development of components and activities of ICES contributing to the Global Ocean Observing System, as well as GOOS products relevant to ICES:
 - (i) review (intersessional) ICES data centre user survey list of improved data products and identify those relevant to GOOS; identify and make recommendations on additional GOOS-relevant data products;
 - (ii) report on progress of ICES CTD/VOS system to provide real-time or near-real time delivery of environmental data from ICES coordinated research vessel surveys.
- c) identify and steer the development of regional ICES, PICES and GOOS pilot projects to demonstrate the benefits of taking a GOOS approach in the ICES context:
 - (i) review, through presentations, highlight best practices and make recommendations to further develop and implement regional pilot projects.
 - (ii) review NORSEPP quarterly reports, evaluate the data products and propose strategies for the transition to the operational mode.
 - (iii) review Ferry Box reports, evaluate the data products and propose strategies for the transition to the operational mode.
- d) identify and steer the development of appropriate outreach activities to disseminate information about ICES and GOOS and to articulate the benefits of taking a GOOS approach in the ICES context:

- (i) make recommendations for GOOS plenary lecture and display for 2007 ICES ASC;
 - (ii) publicize ICES annual status reports (e.g. on climate and zooplankton) within the GOOS community;
 - (iii) update (intersessional) and review SGGOOS website;
 - (iv) Develop a contribution on GOOS activities in the ICES area for the ICES Newsletter in 2007.
- e) take part in the intersessional work led by PGOOP in developing the mission and draft resolutions for a new Expert Group related to operational oceanographic products and services.

SGGOOS will report by 11 May 2007 for the attention of the Oceanography Committee.

Supporting Information

PRIORITY:	The activities of this joint ICES-IOC Steering Group must be considered essential for the participation of ICES as an active regional partner in GOOS.
SCIENTIFIC JUSTIFICATION AND RELATION TO ACTION PLAN:	<p>Term of Reference a) Action Plan 1.7, 5.13, 5.13.1 (i) To provide annual summaries of GOOS activities to inform both the ICES and IOC communities and to recognize potential areas for collaboration. (ii) Progress towards implementing GOOS activities within ICES, and promoting ICES activities to GOOS communities.</p> <p>Term of Reference b) Action Plan 1.7, 5.13, 5.13.1 (i) To foster collaboration on data exchange and use within ICES and to raise awareness on data products needed for GOOS-related work. (ii) To promote the use of real-time data.</p> <p>Term of Reference c) Action Plan 1.7, 5.13, 5.13.1 (i) To promote and extend the development of GOOS regional projects in the ICES area. (ii) NORSEPP is a major ICES pilot project designed to test capabilities for ecosystem monitoring in an operational context. This project was an initiative arising from this Steering Group (iii) The outcome of the Ferry Box project may provide the basis for improved routine monitoring at regional scales.</p> <p>Term of Reference d) Action Plan 5.10 (i) A plenary lecture was driven by the 2004 and 2005 action points and recommendations. The immediate implementation of Coastal GOOS justifies a major dissemination event within ICES. (ii) The flyer is needed to advertise GOOS activities within ICES, and alert GOOS communities about the activities of ICES. It will be widely distributed at many venues, and will be updated every 5 years. (iii) Information can be readily obtained through the website by scientists, users and service providers but this information needs regular updates and should be clearly visible. (iv) The ICES Newsletter is a key dissemination agent for GOOS activities and its benefits within the ICES community.</p> <p>Terms of Reference e) The work of the proposed Expert Group will be relevant for SGGOOS.</p>

RESOURCE REQUIREMENTS:	N/A.
PARTICIPANTS:	GOOS, EuroGOOS, and other relevant GOOS bodies are free to contribute to the Group. Delegates are asked to ensure good representation of all ICES disciplines in this Group. Ideal participants are those already connected with GOOS activities in member countries.
SECRETARIAT FACILITIES:	None.
FINANCIAL:	No financial implications.
LINKAGES TO ADVISORY COMMITTEES:	Marine monitoring activities are closely relevant to the interests of all ICES Advisory Committees.
LINKAGES TO OTHER COMMITTEES OR GROUPS:	All ICES Science Committees have an active interest in this Group. Amongst the closely aligned Working Groups are many of the Oceanography Committee's Groups and IBTSWG under LRC.
LINKAGES TO OTHER ORGANIZATIONS:	IOC, EuroGOOS, PICES.

2006/2/OCC08 **The Planning Group for the North Sea Pilot Project NORSEPP [PGNSP]** (Co-Chairs: Martin Holt, UK, and Hein Rune Skjoldal, Norway) will meet jointly with SGGOOS in Gijón, Spain from 23–24 April 2007 to:

- a) summarise the experiences with producing the quarterly update reports on the North Sea for 2006 and their consolidation into a description of conditions in 2006 as a contribution to the ICES Ocean Climate Status Report;
- b) plan the further production of quarterly update reports for 2007;
- c) review the use of NORSEPP products by other ICES WGs and propose ways to improve working relationships with relevant groups;
- d) on the basis of experiences with production of the quarterly reports and the inputs to REGNS, review and plan possible future development of the NORSEPP products;
- e) jointly with SGGOOS, review the coupled physical-biological models running in nowcast-forecast mode, with data available for generation of the NORSEPP products and identify what is ready for application in the NORSEPP reports;
- f) review the observational data available for generation of the NORSEPP products;
- g) identify gaps, and make recommendations for future improvements and services from the ICES Data Centre;
- h) Take part in the intersessional work led by PGOOP in developing the mission and draft resolutions for a new Expert Group related to operational oceanographic products and services.

PGNSP will report by 14 May 2007 for the attention of the Oceanography, Living Resources, Resource Management, Marine Habitat, and Advisory Committees (ACE, ACFM, ACME).

Supporting information

PRIORITY:	This represents an important initiative for ICES to actively engage itself in GOOS activities. Thus priority is high.
SCIENTIFIC JUSTIFICATION AND RELATION TO ACTION PLAN:	<p>Action Plan Numbers: 1.2, 1.3, 1.5, 1.6, 1.7, 1.8, 2.2, 2.9, 4.11, 5.13</p> <p>The ICES/IOC Steering Group for the Global Ocean Observing System (SGGOOS) organized a Workshop Towards a North Sea ecosystem component of GOOS for assessment and management in Bergen 5–7 September 2001 as a follow-up activity of its Implementation Plan. This Workshop produced an agreed IOC/EUROGOOS/ICES/ OSPAR/NSC Statement of Conclusions which was submitted to the 5th NSC in March 2002. Following this, ICES established this Planning Group which in 2002 prepared an implementation plan for NORSEPP. It is intended that the Project should be, if possible, supported by external funding (e.g., FP6) but should not be dependent on that. Consequently EuroGOOS and ICES have agreed that the principles laid down by NORSEPP (PGNSP) should be pursued actively as far as possible from institute sources, but clearly with limited objectives. Against this background and uncertainty, PGNSP will seek to initiate as many elements as possible to further its basic goal of encouraging the use of operational oceanographic products into stock assessment considerations. NORSEPP is now attempting to move into an operational phase by producing quarterly update reports on North Sea conditions and input to the REGNS North Sea assessments.</p> <p>Tor h) The work of the proposed Expert Group will be relevant for PGNSP.</p>
RESOURCE REQUIREMENTS:	<p>Costs of running a meeting at ICES. Various Secretariat resources may be required to</p> <p>promote inter-Working Group collaboration in the project. Secretariat support in handling oceanographic data from ICES coordinated surveys (IBTS, herring surveys).</p>
PARTICIPANTS:	Representatives from the physical oceanography community and fish surveys and stock assessment communities are invited. EuroGOOS will also nominate participants. Participants from institutes participating in North Sea/OSPAR monitoring programmes will be essential
SECRETARIAT FACILITIES:	Relevant Secretariat staff should be directly involved in the Group
FINANCIAL:	None
LINKAGES TO ADVISORY COMMITTEES:	Very close to ACE objectives and also highly relevant to the interests of ACFM too.
LINKAGES TO OTHER COMMITTEES OR GROUPS:	LRC, MHC are closely linked. Group was created by SGGOOS. REGNS.
LINKAGES TO OTHER ORGANISATIONS:	EuroGOOS, IOC-GOOS, OSPAR, NSC, COOP

2006/2/OCC09 The **ICES/GLOBEC Working Group on Cod and Climate Change [WGCCC]** (Co-Chairs: Geir Ottersen, Norway and Kai Wieland, Greenland) will work by correspondence in 2006–2007 to:

- a) review, evaluate and develop results from the Workshop on the Decline and recovery of cod stocks throughout the North Atlantic including tropho-dynamic effects;
- b) plan the Workshop on the Integration of Environmental Information into Management Strategies and Advice (WKEFA, ACFM) in 2007;
- c) initiate plans for the Workshop on Cod and Future Climate Change, which is postponed to 2008;
- d) initiate plans for a Synthesis workshop or Theme Session in 2009.

WGCCC will report by 15 May 2007 for the attention of the Oceanography Committee, ACE, and ACFM.

Supporting information

PRIORITY:	The group is developing the application of environmental information in the Advisory Process and also the relationship between ecosystem change and fish population dynamics. It therefore has high priority.
SCIENTIFIC JUSTIFICATION AND RELATION TO ACTION PLAN:	Action Plan Principally Goals 1.6, 3.5 and 5 Term of Reference a) The WG will follow up on the report of the 2006 workshop in order to support further research and collective publication. Term of Reference b), c), d) Planning and preparatory work will be carried out for the workshops in 2007 and 2008. This will include selecting co-convenors, establishing dates and locations and drafting the terms of reference.
RESOURCE REQUIREMENTS:	The research programmes which provide the main input to this group are already underway, and resources already committed. The additional resource required to undertake additional activities in the framework of this group is negligible.
PARTICIPANTS:	By correspondence
SECRETARIAT FACILITIES:	None.
FINANCIAL:	No financial implications.
LINKAGES TO ADVISORY COMMITTEES:	Linkages with the Advisory Committees are being developed.
LINKAGES TO OTHER COMMITTEES OR GROUPS:	Linkages with other committees (RMC and LRC) exist and will be developed in the context of the Action Plan for application of results from the CCC programme.
LINKAGES TO OTHER ORGANIZATIONS:	Close linkages with other GLOBEC activities and also some links to PICES.

2006/2/OCC10 A Joint ICES/CIESM Workshop to compare Zooplankton Ecology and Methodologies between the Mediterranean and the North Atlantic (WKZEM] (Co-Chairs: A. Gislason*, Iceland, and G. Gorsky*, France) will meet from 27–30 October 2008 in Crete, Greece, to:

- a) review and consider comparison of zooplankton ecology of the Mediterranean and the North Atlantic, with emphasis on common species and size structure using common numerical methods;
- b) review and consider overview of on-going time-series programmes;
- c) review and consider harmonization of methods, overview of experimental work;
- d) review and consider appearance or disappearance of species vs. global warming;
- e) review and consider autecology of key species.

WKZEM will report by 1 December 2008 for the attention of the Oceanography Committee, and ACOM.

Supporting Information

PRIORITY:	The current activities of this Group will lead ICES into issues related to the ecosystem affects of fisheries, especially with regard to the application of the Precautionary Approach. Consequently these activities are considered to have a very high priority.
SCIENTIFIC JUSTIFICATION AND RELATION TO ACTION PLAN:	Action Plan No: 8.1, 8.2; 1.2-1.13; 2.2, 2.9, 2.10. A joint meeting is important and timely because: <ul style="list-style-type: none"> a) Comparison of zooplankton ecology in the two areas has great scientific value (what is causing the differences between the two ecosystems, some species are common to both systems and it would be interesting/challenging to compare their ecology between the two areas). b) There is need for coordinated and cooperative approaches to plankton monitoring (overview of metadata, harmonization of sampling and sample processing). c) Many of the issues which WGZE is dealing with will benefit from a wider collaborative approach. d) Important to mobilize the wider scientific community besides ICES to address issues of common interest. e) The two regions/ecosystems may influence each other and it is important to elucidate the links between them.
RESOURCE REQUIREMENTS:	The research programmes which provide the main input to this group are already underway, and resources already committed. The additional resource required to undertake additional activities in the framework of this group is negligible.
PARTICIPANTS:	The Workshop will probably be attended by 30–40 scientists (15-20 from each group).
SECRETARIAT FACILITIES:	None.
FINANCIAL:	There will be no financial costs to ICES.
LINKAGES TO ADVISORY COMMITTEES:	There are no obvious direct linkages with the advisory committees.
LINKAGES TO OTHER COMMITTEES OR GROUPS:	The issues are within the mandate of the WGZE. There is a very close working relationship with all the groups of the Fisheries Technology Committee. It also is of close relevance to the Working Group on Ecosystem Effects of Fisheries.
LINKAGES TO OTHER ORGANIZATIONS:	Linkages to CIESM and the Census of Marine Life Programme.

2006/2/OCC11 The **Working Group on Recruitment Processes [WGRP]** (Co-Chairs: R. D. M. Nash, Norway, and T. Miller, USA) will meet St. Johns, Newfoundland from 13-14 July 2007 to:

- a) conduct a synthesis and review of the evidence for sources, patterns and consequences of selective processes in fish early life history and its relevance to our understanding of forecasts of year class strength. (*carried over from 2006*);
- b) based on the results of the review of selective processes in early life history, prepare an ICES Cooperative Research Report that identifies the challenges presented to sustainable fisheries management (capture and aquaculture) of selective processes in early life history;
- c) summarize and analyse data relevant to multi-stage models of recruitment to determine whether patterns exist either within species or within ecosystems that may lead to generalisations regarding the nature of population regulation (carried over from 2006).
- d) report on additional evidence to the SGRECVAP reports on causes of the poor recruitment in recent years in North Sea herring to HAWG meeting in 2008;
- e) take part in the intersessional work led by PGPYME in developing the mission and draft resolutions for a new Expert Group related to phytoplankton and microbial ecology;
- f) collaborate with WGPBI to enhance the use of physical-biological models for prediction of fisheries recruitment.

WGRP will report by 1 August 2007 for the attention of the Oceanography Committee.

Supporting Information

PRIORITY:	Because the relationship between spawning stock and recruitment is fundamental to the scientific approach to fisheries management, the work of this group should be considered of high priority to ICES.
SCIENTIFIC JUSTIFICATION AND RELATION TO ACTION PLAN:	<p>ToR a and b) Action plan 1.2, 1.3, 1.6 At present there is a general lack of information on the causes of mortality in young stages of fish. In particular predation mortality. It is only recently that new analytical tools are being developed (specifically genetics based) that will allow the levels and sources of predation to be identified. This information is fundamental to our understanding of the processes that affect recruitment levels.</p> <p>ToR c) Action plan 1.2, 1.3 The identification of where in the pre-recruit life history year class strength is determined is important for determining useful recruitment indices and forecast models for recruitment. There are a number of species that have been sampled regularly, both multiple sampling of a cohort over if young stages and over a number of years. A collation of these data will provide insight in to variability with a species across different environments and between species within an environment.</p> <p>Tor d) Action plan xx, xx This is in compliance with a recommendation from HAWG for further work to identify the causes and dynamics of the serial poor recruitment of North Sea herring.</p> <p>ToR e) Action plan xx, xx The work of the proposed new Expert Group will be relevant for WGRP.</p> <p>ToR f) Action plan xx, xx Members of WGPBI (Working Group on Modelling of Physical/Biological Interactions) and WGRP share the common goal of enhancing, guiding, and promoting use of coupled physical-biological models for prediction of fisheries recruitment. Close coordination between Working Groups is required to prevent duplication of efforts. WGPBI members will continue to work together on the activities that follow from WKAMF.</p>

RESOURCE REQUIREMENTS:	The WG requires active participation from the members assigned by the Delegates. A complement of 15-20 active members is required to accomplish the work identified in the resolution.
PARTICIPANTS:	In addition to regular members, the WG feels there would be benefit from greater participation by individuals with quantitative skills in the area of biometry and population dynamics.
SECRETARIAT FACILITIES:	The Working Group will meet in conjunction with the 31 st Annual Larval Fish Conference in 2007 and so will only need secretarial assistance for an annual report.
FINANCIAL:	No financial implications
LINKAGES TO ADVISORY COMMITTEES:	The activities of the WG are developing to provide more accurate medium-term forecasts of stock projections
LINKAGES TO OTHER COMMITTEES OR GROUPS:	The activities of the WG are designed to provide input of knowledge to various Assessment WGs. There is no potential overlap in activities because the latter do not have the resources to consider the nature of this new knowledge outside the scope of their current activities. WGZE has close ties with the work of the Group. WGPBI also has close ties with WGRP – several people sit on both WGs.

2006/2/OCC12 A Workshop on the Significance of Changes in Surface CO₂ and Ocean pH in ICES Shelf Sea Ecosystems [WKCpH] (Chair: Peter Brewer*, USA, and Liam Fernand*, UK) will meet in the UK in 2–4 May 2007 to review the current state of knowledge and identify future research directions stated in the Terms of Reference:

- a) the spatial and temporal variability of the surface ocean pH and CO₂ – carbonate system in shelf seas in the ICES region;
- b) predict the rates of change and to understand how these can be measured;
- c) the effects of pH and the CO₂–carbonate system on nutrient chemistry that are important in ecosystem processes relevant to shelf seas;
- d) the effects of pH and the CO₂–carbonate system on contaminants in the shelf seas environments;
- e) the links between potential changes in pH and its effects on marine ecosystem components such as plankton, fish and shellfish and cold water corals.

WKCpH will report by 31 August 2007 for the attention of the Oceanography Committee.

Supporting Information

PRIORITY:	The potential impact of this aspect of climate change is immense and this workshop is an important step in assessing the relevance to the ICES shelf regions.
SCIENTIFIC JUSTIFICATION AND RELATION TO ACTION PLAN:	<p>The ocean is becoming more acidic as increasing atmospheric carbon dioxide (CO₂) is absorbed at the surface. It is thought that the pH of the global ocean has fallen by about 0.1 units over the past 200 years and that it could drop by a further 0.5 units by the year 2100 if CO₂ emissions are not regulated (Royal Soc, 2005; Caldera and Wickett, 2003). A recent study of potential change in the North Sea (Blackford and Gilbert, 2006) suggests that pH change this century may exceed its natural variability in most of the North Sea. Impacts of acidity change are likely but their exact nature remains largely unknown and may occur across the range of ecosystem processes. Most work has concentrated on open ocean systems with little applied to the complex systems found in shelf sea environments.</p> <p>A workshop is required to start the process of assessing the significance of increased CO₂ in shelf seas including the timescale of change compared to natural variability.</p> <p>This workshop is related to Goal 1 of the Action Plan: understand the physical, chemical and biological functioning of marine ecosystems</p>
RESOURCE REQUIREMENTS:	No specific resource requirements beyond the need for members to prepare for and participate in the meeting.
PARTICIPANTS:	Members WKIMON, WGPDMO, MCWG, WGBEC, WGPEP, WGZE, WGPBI.
SECRETARIAT FACILITIES:	No specific requirements.
FINANCIAL:	No specific requirements.
LINKAGES TO ADVISORY COMMITTEES:	Linkage with LRC, MHC and with ACME.
LINKAGES TO OTHER COMMITTEES OR GROUPS:	Wider participation for the group will be sorted via OSPAR