

REPORT OF CONSULTATIVE COMMITTEE

(DRAFT)

Chair: A. Maucorps

1 OPENING

The Committee met during the following three sessions:

Tuesday 25 September	08:30–09:30
Monday 1 October	08:30-18:00
Tuesday 2 October	08:30-16:00

Most members of the Committee were present at each scheduled session. The Chair of the Fisheries Technology Committee did not attend the first two sessions and the Chair of the Baltic Committee was unable to attend the third session. The Chair elect, J.Rice, attended the first session. Several members were unable to attend part or the whole of the afternoon of the 3rd session

2 ADOPTION OF AGENDA AND TIMETABLE

The Committee agreed to the Agenda and Timetable as drafted.

3 GENERAL ARRANGEMENTS FOR ANNUAL SCIENCE CONFERENCE (INCLUDING ARRANGEMENTS FOR SELECTION OF AWARDS, POSTER SESSION, INSTRUCTIONS TO CONVENERS)

The Chair informed the Committee that he has convened an "Awards Nominations Group (ANG)" (formally known as the "Awards Advisory Committee"). He explained that the purpose of the ANG was to help in the identification of the winners for the best paper, the best poster and the best newcomer. He noted that this process has been quite successful in Bruges last year and the Committee agreed that it was appropriate to keep more or less the same formula. He asked each Science Committee Chair to nominate one representative from each of the Science Committees to participate in the ANG. Most Committees subsequently made nominations to the ANG which was chaired as usual by John Ramster. The ICES Communication Officer (Neil Fletcher) also participated.

The Chair drew attention to the relatively remote location of the Poster Room and asked that members remind the Committees of this Session in particular. He noted that the Poster Session was to be accompanied by a get-together with fish burgers and beer. This turned out to have a very positive effect on the level of attendance at this Session.

The Committee was informed of the arrangements for the completion and submission of reports from the Committee and Theme Sessions, the deadline for which was, as usual, the Sunday following the end of the ASC. He added that the convenors of all sessions had been provided with the "Guidelines on the Preparation of Reports of Scientific Sessions Held during the ICES Annual Science Conference" which had been put into use for the first time last year in an attempt to improve the quality of these reports

The Committee was also informed that 800 copies of the CM2001 CD-ROM was being distributed to all registered participants. In addition to all of the Working Group and other "business" reports, the CD-ROM also includes the abstracts of all papers and posters. Full copies of all papers and posters received at the Secretariat prior to 5 September were also included on the CD-ROM. Unfortunately this represents only about 30% of the total. A small number of papers have been submitted subsequent to the production of the CD-ROM and some of these have been included on the web version. Participants have been informed about the web version. Limited printer facilities were available to participants to print out papers (at their cost). In order to improve on the low percentage of papers submitted so far, all convenors were asked to encourage submissions of missing papers to the Secretariat by the end of the year. These would be included on the revised version of the CD-ROM which is planned for early 2002 when it is hoped to include the majority of papers, and the ICES Annual Report. Finally the Committee noted that the greatly reduced size of the Document Room contained only 50 copies of each Working Group report in order to help Committee members through the transitional period to a fully paperless conference. Depending on the demand for this material, a decision will be made later by the Secretariat with regard to whether any Working Group report will be made available in hardcopy in the future.

The Committee noted the arrangements for the sessions of the two invited lecturers (Coleen Moloney and Stephen Hall). At its second session, the Committee expressed satisfaction that these two invited lectures fully met expectations and objectives. It also observed the increasing trend towards presentations being made using Powerpoint and PC projectors, but noted the way this was handled differed from session to session. Future guidelines to convenors should provide information to Convenors on how to organise this. It also recommended that the Secretariat should provide at least one laptop for each session and encourage contributors to provide presentational material on diskette or CD-ROM.

The Committee expressed great satisfaction with the meeting arrangements, especially with the nature, size and acoustic characteristics of all meeting rooms.

There was great demand for the two internet works stations, allowing access to email, in spite of the fact this facility was not advertised. The Committee recommended that future Conferences should have greatly expanded Email/internet facilities for use by all participants.

The Committee considered that the arrangements for Posters was not satisfactory and expressed the wish that every effort should be made to ensure that they are readily accessible at future meetings. Locating them in the area where participants take coffee was considered to be the best option. Several Chairs expressed concern at the lack of facilities for ad hoc meetings and requested that appropriate rooms should be reserved in future in anticipation of this demand.

4 GENERAL ARRANGEMENTS FOR STATUTORY MEETING (INCLUDING DRAFT RESOLUTIONS, REQUESTS TO SCIENCE COMMITTEES, AND PREPARATION OF COMMITTEE REPORTS)

The Chair asked that each Science Committee should give careful consideration to Publication issues, as agreed at the mid-term meeting. Assuming approval of the amended Rules of Procedure, the Publication Committee will now come under the auspices of the Consultative Committee. Each Committee will need to give much more careful consideration of publication matters than it has done hitherto. He asked that Committee's examine the new expanded remit of the Publication Committee and consider how they could best contribute to that process.

The Chair reminded the Committee of the procedures for handling draft resolutions. He explained that each Science Committee has been provided with a set of draft resolutions pertaining to the Committee. The Advisory Committees have a full set of all Committees. Updates and revisions should be provided to the relevant ICES Professional as soon as they become available. These resolutions will be considered in detail at next Monday's and Tuesday's sessions, in particular those Draft Resolutions that were not approved by the Consultative Committee at its mid-term meeting.

The Chair reminded that each Committee should give a great deal of attention at this Meeting to the development of the Committee Action Plans. In particular there will need to be an agreed strategy and timetable to allow for the production of a consistent document for approval by Delegates at the Copenhagen meeting. It may be appropriate for each Committee to set up ad hoc drafting groups to develop drafts for consideration by the Consultative at this meeting. A final compilation will have to be ready by the time of the mid-term meeting. Detailed consideration of the progress made in the preparation of the Committee Action Plans is dealt with elsewhere in this report (Agenda item 6).

He also asked the Committee to consider the arrangements for inter-sessional activities as he anticipated that this period would be a particularly busy one for the Committee, given the tight deadline for producing an Action Plan. This issue is returned to under Agenda item 14.

The Committee reviewed the conduct of the Science Committee sessions during its second session. The Chair of the Living Resources Committee informed the Committee of the success of the joint committee survey session but suggested that it be given additional time at next year's meeting. Likewise the Chair of the Marine Habitat Committee requested more time at next year's meeting as his Committee was unable to consider all of its Working Group reports in sufficient detail.

The Committee discussed the desired level of review for each Working Group report. Most had implemented the "peer review" system introduced by the Committee last year but noted that the review required was more of a monitoring review rather than a peer review. The Committee accepted that such a review was more appropriate especially if the question of scientific quality of individual reports was not considered. It was agreed to proceed with reviews with this question omitted. The Chair of the Oceanography Committee stated that because of the large number of reports being presented to his Committee not all reports would be reviewed in any one year. However his Committee would select two or three reports each year which would be subjected to intensive review. It was also noted that the advisory committees should take into account the reviews undertaken by the Science Committees with regard to material it intended to publish in the Advisory Reports. It was noted however that to do so would not be practical on many occasions.

In order to improve intra- and inter-committee communications the Committee repeated its earlier demands for all Working Group reports to include an executive summary highlighting its main conclusions.

The Committee again questioned the need to include Delegates and Bureau meetings in parallel with Annual Science Conference scientific sessions. It agreed to further to examine this issue at a later meeting with a view to recommending alternative arrangements for these meetings.

5 ELECTIONS OF NEW COMMITTEE CHAIRS

5.1 Fisheries Technology, Resource Management, and Baltic Committees

Elections for new Chairs of the Fisheries Technology, Resource Management, and Baltic Committees took place at the Science Committee sessions on Friday 28 September. The result of these elections were:

- Fisheries Technology – S Walsh (Canada) replacing O. Misund (Norway)
- Resource Management – C O'Brien (UK) – confirmed (currently interim Chair)
- Baltic – B McKenzie (Denmark) replacing T Osborn (USA)

5.2 Chair and Vice-Chair of Consultative Committee

The Committee was reminded that the current Chair would give up office as interim Chair at the end of the year, and that J Rice would take over as Chair from January 1 2002. H-R Skjoldal was elected vice-Chair at the June 2001 meeting and, following a clarification of the Rules of Procedure which state that the vice Chair may remain in that office so long as he is a member of the Committee. The modified Rules of Procedure, if adopted, will also make it clear that the Committee elects the Chair and vice Chair. Thus Council will not be required to ratify these appointments.

6 STATUS OF SCIENCE COMMITTEE ACTION PLANS AND REQUIRED FOLLOW-UP WORK

Most Committee Chairs were able to report some progress in the development of Committee Action Plans. Some of these had been submitted to the Committee prior to the meeting and subsequently updated. The Committee was reminded of the urgency and importance of the document it had to produce by the middle of next year. It asked the Chair of Resource Management Committee, who had previously taken the lead in produce an Action Plan document to work with the incoming Chair to develop the necessary documentation (see agenda item 14) and to propose a course of action and timetable for completing this work. Details of this, as agreed by the Committee, are provided in Annex 1 (page 28).

7 DEVELOPMENT OF PROGRAMME FOR THE 90TH STATUTORY MEETING/2002 ANNUAL SCIENCE CONFERENCE (COPENHAGEN, DENMARK)

The Committee agreed to proceeding with proposals made intersessionally with regard to the Open and one of the invited lectures. It noted that the title for the Open Lecture remained open but suggested that Dr G Kullenberg be asked to talk on the subject of "Ocean Governance", a subject which would fit well with part of the scientific programme for the Conference. The Committee also recommended that Alan Longhurst (UK/Canada) should be invited to provide a second invited lecture, possibly on the subject of Census of Marine Life as this would complement several of the proposed theme sessions. The Committee also took note of a request from Delegates with regard to their proposal to hold a Theme Session within the Annual Science Conference and a Workshop on "Research Vessels" to be held elsewhere in Copenhagen as part of the Centenary programme.

The Committee reviewed the status of the draft list of theme sessions. It omitted several because of a continued shortfall of detail, and transferee some to and from the 2003 provisional list of sessions in order to acquire a satisfactory balance. The Committee then identified session that could be grouped into common themes along the lines requested by the Bureau. These groupings were as follows:

- 1) Ocean observation – 4 Theme Sessions
- 2) Environmental influences on marine resources – 4 Theme Sessions
- 3) Aquaculture: new trends and developments – 4 Theme Sessions
- 4) Ocean Governance – 4 Theme Sessions

The details of the proposed programme, including the 16 Theme Sessions are listed in Table 1 (Page 9).

8 DEVELOPMENT OF PROGRAMME FOR THE 91ST STATUTORY MEETING/2003 ANNUAL SCIENCE CONFERENCE (TALLINN, ESTONIA)

The Committee made several proposals with regard to an Open Lecturer and Invited Lecturers. Topics included plankton dynamics, chaotic behaviour of plankton, marine life forms, seamount ecology, and fish swimming. The proposers will follow up these suggestions and report to the Secretariat with a view to making firm suggestions to the mid-term meeting of the Bureau.

The Committee reviewed the draft list of theme sessions, and identified follow-up actions for all of them. The provisional list of Sessions is given in Table 2 (Page 19).

9 STATUS OF ICES SYMPOSIA

9.1 Symposia in 2000/2001

The Committee noted the reports of two Symposia that had been held since the last Statutory Meeting. (Doc. Gen:4). These were:

- “Hydrobiological Variability in the ICES Area, 1990–1999, the 2nd Decadal Symposium”: Edinburgh, Scotland, UK, 8–10 August 2001. Co-Conveners: R. R. Dickson (UK) and J. Meincke (Germany). International co-sponsors were IOC and NAFO. The symposium proceedings will be published in the Marine Science Symposium Proceedings
- “Capelin – What Are They Good For? Biology, Management, and the Ecological Role of Capelin”: Reykjavik, Iceland, 23–27 July 2001: Co-Conveners: H. Vilhjalmsson (Iceland) and J. Carscadden (Canada). The Symposium proceedings will be published in the IJMS

9.2 Symposia for 2002 onward

The following Symposia are already approved for the years 2002–2004:

2002

- NAFO/CSIRO Symposium on "Elasmobranch Fisheries: managing for sustainable use and biodiversity conservation", (co-sponsored by ICES): Spain, (venue to be announced by NAFO) from 11 - 13 September 2002. Co-conveners: David Kulka (NAFO, Canada) as Organiser, and Mike Pawson (for Paddy Walker, Chair SGEF, ICES), Jack Musick (VIMS, USA) and Terry Walker (MFRI, Australia).
- “Acoustics in Fisheries and Aquatic Ecology”: Montpellier, France, 10–14 June 2002 Co-Conveners: F. Gerlotto (France) and J. Massé (France). Co-sponsors: Acoustical Society of America, UK Institute of Acoustics, Société Française d'Acoustique.

2003

- Symposium on "The Precautionary Approach to Fisheries Management: Lessons Learned and Future Directions": Chile, August 2003. Co-Conveners: J. Rice (Canada) and two others (to be decided).
- ICES/PICES/GLOBEC Symposium on "The role of zooplankton in Global Ecosystem Dynamics: Comparative studies from World Oceans": Gijón, Spain, 21-23 May 2003. Co-Conveners: Roger Harris (GLOBEC, UK), Tsutomu Ikeda (PICES, Japan) and Luis Valdés (ICES, Spain).
- Symposium on "Fish Behaviour in Exploited Ecosystems" (formerly “Fish Behaviour in Relation to Scientific and Fishing Operations”): Bergen, Norway, June 2003 (formerly April 2003). Co-Conveners: Å. Bjordal (Norway) and S. Walsh (Canada). FAO co-sponsorship to be invited.

2004

- ICES Symposium on "The Influence of Climate Change on North Atlantic Fisheries": Bergen, Norway, 2004. Co-Conveners: R. Cook (UK), K. Drinkwater (Canada), and H. Loeng (Norway).

The Committee noted that plans for the 2002 symposia are well advanced, and that flyers announcing them have been available for some time. The Committee noted the extraordinary interest in the Montpellier Symposium which had received notification of the submission of almost 300 papers. The Committee also noted that flyers and posters advertising the ICES/PICES/GLOBEC symposium in 2003, were available at the ASC. The Committee recommends that the proceedings of this Symposium be published in the IJMS (see agenda item 10).

9.3 Prospects and Proposals for Additional Future Symposia

The Committee supports in principle a resolution for the following ICES Symposium, subject to appropriate financial arrangements being made:

- Symposium on **Gadoid Mariculture: Development and Future Challenges** will be held in Bergen, Norway in summer 2004 with O.S. Kjesbu (Norway), G.L. Taranger (Norway) and E. Tripple (Canada) as Co-Conveners.

The Committee welcomed the complete nature of this proposal produced by the Mariculture Committee, and endorsed that it be forwarded to the editor of IJMS via the Chair of Publication Committee to ask for his approval to publish the proceedings in the IJMS.

10 MATTERS ARISING FROM THE PUBLICATIONS COMMITTEE

The Committee has also the responsibility of nominating members to the Publication Committee and it agreed to the choice made prior to the meeting by correspondence. It was noted however that MCAP had advised that they wished to make a nomination so that there would be a member of that Committee who could represent the Advisory Process. The Committee had previously supported such a suggestion at its mid-term meeting but this decision had been changed by the Bureau. The Committee noted that MCAP were subsequently permitted to make a nomination to the Publication Committee, the final composition of which is

Bureau nominee: W. Turrell (UK) – later nominated as Chair by the Publication Committee
Science Committee members: F Arrhenius (Sweden), P Pepin (Canada), O Cendrero (Spain),
Advisory Committees member: F Serchuk (USA)

P Boyle, Chair of the Publication Committee, informed the Committee at its first session that the subject of Symposia publication issues need to be given special attention by the Committee. He drew attention to difficulties arising from a request from the convenors of a forthcoming ICES/PICES/GLOBEC zooplankton symposium to have the proceedings of this Symposium published in the IJMS. The publication of these proceedings had not been clearly stated in the Council Resolution supporting the Symposium. He stated that there is a need to make clear in future that Council approval for symposia is not same as publication approval.

The Committee thanked P Boyle for his fine work as Chair of the Publication Committee, and expressed particular gratitude for the work he had done to raise and change the profile of Publications in ICES along the lines stated in the Strategic Plan. His efforts to ensure that the publication process was more integrated into science process was particularly appreciated.

11 MATTERS REFERRED TO THE COMMITTEE BY THE BUREAU OR COUNCIL

No matters that were not specific to other Agenda items were referred.

12 ADVISORY COMMITTEE MATTERS

12.1 MCAP

The Committee was informed about actions with regard to developing the 2nd Environmental Dialogue meeting, the planning for which was being undertaken by a Planning Group chaired by the Senior Vice President.

12.2 ACFM

There were no matters referred from ACFM

12.3 ACME

The Chair of ACME drew attention to a joint session it had held with ACE concerning Publication needs. They noted that their needs were similar and should permit the use of material from the Science Committee Working Groups to the extent needed to formulate ICES official information and advice. It was noted that in all cases the relevant Science Committee Chairs were aware of what material was being used in a report and it was expected that they would draw the attention of its use for advisory purposes to the Working Group Chairs.

The Committee was also informed that the joint session initiated a discussion among members on their views concerning opening the meetings of the Advisory Committees to observers from stakeholder organisations. The Committee Chairs urged their members to continue this discussion through e-mail during the autumn in preparation for a discussion in MCAP by next January.

12.4 ACE

The Chair of ACE drew attention to a draft document prepared by his Committee which described the development of a scientific framework for ICES ecosystem advice. The Committee drew attention to very similar work being undertaken by the Working Group on Fishery Systems and agreed that it should ask this Group to review this work and report its findings to ACE.

The Committee also recommended to ACE that a glossary of keywords it was intending to develop should be undertaken in a sub group of ACE. The Committee invited ACE to report back to the Committee on the completion of this work with a view to ascertaining feedback and reactions.

13 DRAFT RESOLUTIONS FROM ADVISORY AND SUBJECT/AREA COMMITTEES

13.1 Draft Resolutions

The Committee considered only those Draft Resolutions that it had not seen and approved at its Mid-Term Meeting. A number of detailed comments and alterations with regard to these were made, including:

Category 1 (Publications). The Chair explained in detail the background to the need to publish papers originally scheduled for an updated "Study of the Sea" publication to be published in *the Cooperative Research Report* series. The Committee agreed that this represented a reasonable compromise subject to the agreement of all the authors. Furthermore, it recommended that the publication should include a foreword by the General Secretary explaining the background to the production of these papers.

Publication. The Committee expressed concern about the small size of the Committee which was considered to be insufficient to allow it to meet its greatly expanded mandate. It agreed to its two day meeting at next years Statutory Meeting, noting that it was the intention to meet on consecutive Sundays. The first Sunday would focus on its traditional agenda and the second would deal with its expanded remit.

ACFM The Chair of ACFM informed the Committee that there were a number of gaps in details with regard to meeting location and time. He was confident these details could be completed quite soon. The possible establishment of a new study group on ACFM Procedures was referred to MCAP for further consideration.

ACME The Committee noted that ACME was scheduled to meet for 4.5 days next summer. The Chair of ACME noted that some of this time was required to undertake quality assurance work to assess input material. The Chair observed that most of the draft resolutions had been examined by the Committee at its mid-term meeting but that many of them had been upgraded since then.

ACE The Committee expressed concern about the lack of detail and supporting information with respect to the planned 2002 meetings of ACE. The Environmental Secretary agreed to provide extra detail. The Committee noted that its next meeting was for 3.5 days which excluded a Sunday.

The Committee was informed that the new Chair of the Working Group on Ecosystem Effects on Fishing Activities had expressed concern about the heavy workload of this Group. Consequently the terms of reference were modified in order to clarify priorities and make more specific exactly what was required of the Group for individual terms of reference.

Fisheries Technology Committee The Chair of the Fisheries Technology Committee drew attention to an important request for advice received via MCAP from IBSFC and addressed to the Working Group on Fishing Technology and Fish Behaviour. The Committee agreed with his concern that it was not appropriate to respond to this request through intersessional activities. Consequently the Group's meeting arrangements were altered to allow it to respond to the request at its next meeting. The Committee also transferred a term of reference for this group to review the historical use of technical measures to the 2003 list of theme sessions.

Oceanography The Chair of ACE requested that a number of groups should report to his Committee. The Chair of the Oceanography Committee also drew attention to the serious difficulties the Study Group on Physical Biological Interactions was having in attracting appropriate membership. Details of the required membership are contained in the relevant supporting information. The Chairs of Resource Management and Living Resources Committee expressed concern about the terms of reference for the new Planning Group on the North Sea Pilot Project which led to some small modifications. However the Committee emphasised the importance of attracting fisheries scientists into these activities in order to ensure that ICES could develop its GOOS-related activities on a broad interdisciplinary front.

The Chair of ACE strongly endorsed the establishment of the Study Group on XML, seeing this activity as providing an important step towards facilitating the development of integrated data products in ICES.

Resource Management The Committee included a term of reference into the mandate for the Working Group on Fishery Systems to "Compare and contrast the scientific framework for ecosystem advice", resulting from a discussion on ACE issues under agenda item 14.4

Marine Habitat Committee. During discussion of the terms of reference for the Working Group on Extraction Sediments on the Marine Ecosystem concern was expressed that a member of the Group had turned up to the wrong location for last year's meeting. This pointed to a problem of communication between Delegates, Experts, Chairs and the Secretariat. Whilst Delegates were not in any way responsible for what happened on this occasion, the Committee was reminded of a widespread complaint with regard to Delegates failures to properly nominate and remove members from working group lists. Given the new security restriction in the Secretariat it is even more important now for the Secretariat to have accurate and up to date membership lists for each group.

The Committee noted with satisfaction that a change in direction of the Working Group on Marine Sediments in relation to Pollution, as reflected in its last term of reference, is likely to stimulate a lot of new interest in this Group. The new activity will focus on the effects that pollutants in sediments have on the ecosystem rather than merely documenting pollutants concentrations in sediments.

In order that the Working Group on Marine Habitat Mapping can properly address a request for advice from HELCOM participation of new members expert in habitat classification issues in the Baltic is necessary.

Mariculture Attention was drawn to problems the Working Group on the Application of Genetics in Fisheries and Mariculture was having in fully addressing its terms of reference. Specifically the Group needs quantitative and aquaculture type geneticists.

Living Resources The Committee was informed that the frequency of meetings of the Working Group on Beam Trawl Surveys will increase because of its expanded remit to coordinate both coastal and offshore surveys.

Baltic – The Committee noted in particular the proposal to transfer the parentage of the Working Group on Baltic International Fish Surveys to be transferred to the Living Resources Committee. This is part of the process to ensure that the Baltic Committee evolves into an ecosystem-based Committee

13.2 Study/Working Groups to be Renamed, Established or Dissolved

The list of established, renamed and dissolved groups is provided below in Table 3 (Page 24). The Committee supported the establishment of 3 Working Groups, 4 Study Groups and 5 Planning Groups. Against this it approved the dissolution of 3 Study Groups and 1 Planning Group. In addition it approved 4 Workshops.

13.3 New Study/Working Group Chairs

The list of new Chairs is provided in Table 4 (Page 26).

14 TERMS OF REFERENCE FOR 2001 MID-TERM MEETING OF CONSULTATIVE COMMITTEE

The Chair explained various constraints with regard to holding the mid-term meeting in the ICES Secretariat next June. The Committee however acknowledged that it had an important task to complete by that time, viz the ICES Action Plan which is intended to be a companion publication to the ICES Strategic Plan. It also noted that many of the routine items conducted at this meeting, i.e., the preparation of the programme for the next ASC, the planning for the following year's ASC, and preliminary consideration of draft Council Resolutions have been largely taken on board by the Secretariat. Consequently the Committee agreed that these tasks could be conducted by correspondence, for next year at least. As noted by the Chair of ACE, the Consultative Committee had also a very important task in developing the relationship between the advisory and science process and cancelling a mid-term meeting next year should be seen as a temporary arrangement only.

The Committee finally agreed that a drafting sub group should meet in January and March to develop the Action Plan along the lines proposed under agenda item 6. It also agreed that the routine business normally carried out at its mid-term meeting should be carried out by correspondence in 2002. Draft Resolutions formalising these conclusions are included in the Draft Resolution package.

15 ANY OTHER BUSINESS

There was no other business

16 CLOSE OF MEETING

The Chair of the Oceanography Committee said on behalf of the Committee “merci beaucoup, Alain” for guiding them so competently through the mid-term meeting and the current session as interim Chair.

TABLE 1
PROGRAMME
2002 ASC

DGI, Copenhagen, from Tuesday 1 October to Saturday 5 October

The main theme of the ASC is to state the future role of ICES having taken into account the historical reflection in 1999, and the consultations with clients in 2001. There will be a full Centenary Day on Friday 4 October.

Open Lecture: Gunnar Kullenberg – Ocean Governance?

Invited Lectures:

1) **Tom Malone** ICES and the coastal module of GOOS

2) **Alan Longhurst** (yet to be approached/subject to be defined)

THEME SESSIONS

Ocean observation

20) Use of Marine Research Vessels in ICES – Options for the future. Co-convenors: N.A. Nielsen (Denmark) and M. O’Cinneide (Ireland)

5) The integration of acoustic and optical survey techniques and marine biological data for the purpose of seabed classification. Co-Convenors: J. Side (UK), Rumohr (Germany), John Anderson (Canada) and David Reid (UK)

8) Census of Marine Life: turning concept into reality. Co-Convenors: J Pope (Norway), C. Bannister (UK) and Bergstad (Norway), J. Rice (Canada) and R. O’Dor (USA)

15) Oceanography and ecology of seamounts - indications of unique ecosystems. Co Convenors: Richard Haedrich (Canada), Manfred Kaufmann, Hein v. Westernhagen (Germany)

Environmental influences on marine resources

4) Environmental influences on trophic interactions. Co-Convenors: L. Valdes (Spain) and J.C. Therriault (Canada) G. Hunt (USA) and S Greenstreet (UK)

7) Pelagic Fish Responses to Climate Variability- Consequences for fisheries and ecosystem advice: Co-Convenors: F. Borges (Portugal), D. Skagen (Norway), C. Porteiro (Spain), and B. Rothschild (USA)

9) Biological Effects of Contaminants in Marine Pelagic Ecosystems. Co-Convenors: Ketil Hylland (Norway), Thomas Lang (Germany) and John Thain (UK)

13) Ocean-shelf sea interactions: implications for biology and fisheries. Co-Convenors: Chris Reid (UK), Fatima Borges (Portugal) and Einar Svendsen (Norway)

Aquaculture: new trends and developments

2) Immunomodulators and probiotics: Alternatives to Chemotherapeutics? Co-Convenors: Ian Bricknell (U.K.) and Joel Gatesoupe (France)

3) Juvenile Fish Cultivation: Improvements in Quality. Co-Convenors: David A. Bengtson, (USA), Karin Pittman, (Norway), and Patrick Sorgeloos (Belgium)

16) Salmon: is Mariculture a Threat to Wild Stocks? Co-convenors: Jackie Doyle (Ireland), Arni Isaksson (Iceland)?; and Terje Svåsand (Norway – terje.svaasand@imr.no)

19) New Developments and Applications of Genetics in Fisheries Management and Aquaculture. Co-Convenors: Michael M. Hansen, Einar Eg Nielsen and Sheila Stiles

Ocean Governance

1) Unaccounted mortality in fisheries - Co-Convenors: Mike Breen (UK), Alain Fréchet (Canada) and Aud Vold Soldal (Norway)

10) Fishery and Environmental Management – Is there a role for Operational Oceanography ? Co-Convenors: Glen Harrison (Canada), Bill Turrell (UK) and Tom Malone (USA)

17) Shelf seas processes: the foundation for ecosystem understanding. Convenors: Charles Hannah (Canada), Wolfgang Fennel (Germany), and Harald Loeng (Norway)

18) The effects of fishing on the genetic composition of living marine resources. Convenors: Olav Rune Godø (Norway), Adriaan Rijnsdorp (Netherlands)

TABLE 1 Continued

Session Synopses

(subject to revision)

1) Unaccounted mortality in fisheries.

Co-Convenors: Mike Breen (UK), Alan Frechet (Canada) and Aud Vold Soldal (Norway)

Over the last decade, there has been considerable new and innovative research into identifying and estimating unaccounted sources of mortality in fisheries. These are discard mortality, illegal, misreported, and unreported mortality, escape mortality, drop-out mortality, ghost fishing mortality, avoidance mortality, and habitat mortality. As it has been pointed out in many instances, this area of research needs to be better understood by researchers, managers, and industry. Many activities and a co-ordinated collaborative workshop on this topic are planned in 2001, where gear technologists and assessment biologists will perform case studies and simulation of the various effects of unaccounted mortality in stock assessments. A review of the current knowledge in unaccounted mortalities, means of incorporating such estimates into assessments and review of research priorities will profit attendants and is likely to stimulate further work that could be presented at the ICES Theme Session of 2002. Given these issues the Annual Science Conference is the most likely forum where all disciplines such as gear technologists, stock assessment biologists, and fisheries managers will be present and could be sensitised to unaccounted mortality issues.

Growing concern over the by-catches and discards of commercially valuable round- and flatfish in small meshed fisheries targeting Crustacean shellfish, and their alleged impact with recruitment, has led to a proliferation of studies aiming (a) to quantify the numbers of fish discarded, and (b) to remedy the problem through technical adaptations of the shellfish gears in use. The number of fish discarded are often impressive, but unless these figures are put in their proper context, very little can usually be said about the actual impact of discarding on the fish stocks (in terms of lost potential yield and revenues. Technical adaptations to the shellfish gears may not achieve their goals. A multi-disciplinary approach to the problem, combining expertise in the fields of shellfish- and finfish biology, impact modelling, gear development and bio-economics, can help to (a) identify the actual impact of discarding on the finfish stocks, (b) predict the potential gains in yield if the discard rates were substantially reduced, (c) to identify minimum performance criteria for gear adaptations (or other management actions aiming to minimise by-catches and/or discards), and (d) assess the economic consequences of such measures for both the shellfish and the finfish fisheries.

2) Immunomodulators and probiotics: Alternatives to Chemotherapeutics?

Co-convenors: Ian Bricknell, Fisheries Research Service, Marine Laboratory, P.O.Box 101, Victoria Road, Aberdeen AB11 9DB, Scotland (UK); I.R.Bricknell@marlab.ac.uk and Joel Gatesoupe, Fish Nutrition Lab, Unité Mixte INRA-IFREMER, Centre de Brest IFREMER, BP 70, 29280 Plouzané, France; Joel.Gatesoupe@ifremer.fr

In the face of multi-drug antibiotic resistance, and vaccine limitations, working towards natural disease resistance whether by genetic selection or other means has turned to a crucial issue. The use of immuno-modulators and/or probiotics in marine aquaculture has the potential to provide many benefits to the industry. Immuno-modulators can, in theory, improve fish health by up-regulating the immune system, reduce the requirement for intervention with immuno-therapeutics and improve animal welfare. They also offer the potential to improve larvae and fry survival as judicious use of these compounds could protect larvae from endemic pathogens in the hatchery.

Probiotics may have a wide range of beneficial effects on animal health, but few have been documented in fish so far. They may act directly on the host by stimulating the immune response, and the ontogeny of digestive enzymes in larvae. They may fight against pathogens by secreting antagonistic compounds like antibiotics, surfactants, etc. They may also intervene in the host-pathogen relationship by competing for adhesion sites, nutrients, or by destroying toxins. This variety allows synergy, and probiotics could be also combined with immuno-stimulants.

It is proposed that the theme session examine these topics and investigate the potential benefits and possible detrimental effects that the use of immuno-modulators and probiotics may have on marine fish culture.

(Working Group on Marine Fish Culture)

3) Juvenile Fish Cultivation: Improvements in Quality

Co-Convenors: David A. Bengtson, Department of Fisheries, Animal and Veterinary Science, University of Rhode Island, Kingston, RI 02881, USA (Bengtson@uri.edu); Karin Pittman, Department of Fisheries and Marine Biology, University of Bergen, High Technology Center, 5020 Bergen, Norway (Karin.pittman@ifm.uib.no), and Patrick Sorgeloos Laboratory of Aquaculture and Artemia Reference Center, University of Ghent, B-900 Belgium (Patrick.sorgeloos@rug.ac.be)

Hatchery rearing of commercially important marine fish is a *sine qua non* in ICES countries for modern commercial aquaculture of marketable product and for stock enhancement of commercial fisheries. In the last quarter century, many of the technical problems that caused *quantity* of larvae and juveniles reared to be a “bottleneck” for food production have been overcome. Today, it is the *quality* of the juveniles produced that is of interest, but quality means different things to different end-users. Commercial aquaculture operations increasingly want juveniles from broodstock that have been selectively bred for fast growth and disease resistance, whereas stock enhancement operations want juveniles with genetic diversity as close as possible to that of wild populations. In either case, the quality of hatchery rearing depends on broodstock nutrition and holding conditions, larval nutrition, microbial ecology of the larval rearing tanks, and many other factors. Recent studies have shown that epigenetic factors operating during the early stages of development determine quality of individuals during later stages and direct effects are not always easy to determine.

This theme session will be devoted to an examination of the genetic and environmental factors involved in improvement of juvenile quality, including a) selective breeding vs. maintenance of genetic diversity, b) biotic and abiotic factors important in the larval rearing conditions, and c) methods to assess and predict juvenile quality and subsequent performance in commercial on-growing or the natural environment. Thus, the session should be of interest to commercial aquaculturists, government scientists involved in stock enhancement programs, and academicians. We will solicit papers from people in a broad range of disciplines and from a wide geographic area.

4) Environmental influences on trophic interactions

Co-Convenors: L. Valdes (Spain) (or a suitable substitute from the WGZE) and J.C. Therriault (Canada). George Hunt (USA) and Simon Greenstreet (UK).

To attract a diversity of marine ecologists and oceanographers to ICES, we propose a recurring theme session to provide a forum for the presentation of new information dealing with environment-biota interactions. The theme, on any given year, could be altered to emphasize particular trophic relationships or interactions. Given the recent theme sessions dealing for environment-plankton-fish interactions and the one dealing with top predators, we propose that the 2002 session emphasize phytoplankton-zooplankton interactions. A potential candidate for 2003 ASC would involve benthopelagic coupling.

Physical processes at a wide variety of spatial and temporal scales are becoming recognized as important for the profitable foraging of many groups of organisms from zooplankton to fish to seabirds and marine mammals. At the larger spatial and temporal scales, places where these transfers are concentrated may be hotspots of particular concern for conservation of marine resources. We wish to explore these ideas over a wide range of organisms and spatial scales.

We wish to at least have papers on copepods, on jellyfish, and a couple each in fish, birds and mammals. Some of the recent remote sensing work on mammals, birds and fish could usefully be presented. One further area of interest would be in contrasting responses of predators to regions of enhanced production as opposed to areas with mechanical aggregation of prey. It would therefore be useful to have papers on bio/physical coupling and production and on mechanical aggregation.

5) The integration of acoustic and optical survey techniques and marine biological data for the purpose of seabed classification

Co-Convenors: J. Side (UK), Rumohr (Germany), John Anderson (Canada) and David Reid (UK)

In 2000 and 2001 a range of workshops will take place considering issues like seabed imaging and marine habitat classification in the North Atlantic. At the 99th Statutory Meeting in Bruges it was recognised that links need to be established between rapidly developing imaging technologies and the sampling, identification and classification of biota, in order to be able to produce standardised international habitat maps that will serve as a basis for sustainable management of the marine resources. (*Contributes to Scientific Objective 1^e*)

The theme session will address the following items:

- Progress in linking biological sampling techniques with geophysical sampling techniques to prepare marine habitat maps
- Progress in developing a ICES marine habitat classification
- Progress in the production of large scale (*i.e.* international) habitat maps
- Standardisation of data and the development of a joint (ICES) database
- Habitat maps supporting the designation of marine protected areas or the implementation of management plans.

(MHC)

7) Pelagic Fish Responses to Climate Variability - Consequences for fisheries and ecosystem advice

Co-Convenors: F. Borges (Portugal), D. Skagen (Norway), C. Porteiro (Spain), and B. Rothschild (USA)

In the last ten years, there has been increasing interest in the relationship between climate and the stock size of many important commercial fish species. A number of species show a clear correlation with climatic indices like, Global Temperature Anomaly, Atmospheric Circulation Index, (Klyashtorin, 2000) depending of the different systems of the globe oceans to which the specific marine population is adjusted .

Data reflecting multi-decadal climatic changes have been recorded for centuries, although identification of the long-term patterns is relatively recent. Accepting those multi-decadal changes as real, scientists from several fields have accepted the challenge of understanding the causal processes and mechanisms which generate them. By nature, these processes are extremely complex (Rothschild 1995), as are their consequences and implications. For example, Bakun (1996) suggested that upwelling intensity was linked to large-scale climatic effects, thus linking climate change to the rate of nutrient transport into the eutrophic upper ocean layer, and ultimately to changing primary production. Although several hypotheses on the processes are already being tested by *in situ* experiments in the different systems of the ocean environment world-wide, several questions about their implications remain to be posed. A key question for ICES is: What difference does it make in terms of the current scientific tools for provision of fisheries management and ecosystem advice when productivity regimes are alternatively high and low?

The pelagic fish marine species are among the best candidates to investigate this question. Due to their trophic position they usually respond faster than demersal fishes to environmental change, and their common ocean habitats, such as upwelling systems, are frequently highly dynamic. The Californian and Japanese sardine population-environment relationships are particularly well studied (Kawasaki 1992, Lluch-Belda *et al* 1992, Wada and Jacobsen , 1998), but there many other populations from the both sides of the Atlantic which are being investigated currently. In some cases, such as Californian Sardine, harvest control rules that take account of environmental indices are already in place, to adjust harvest during the transitional periods between the different productivity regimes of the pelagic stocks. In Japanese Sardine fishing mortality rates are maintained low and vary with regime, but it has been difficult to find an index that is a useful basis for management advice during the transition between productivity regimes.

The purpose of this session is to bring together scientists from both sides of the Atlantic, and globally, to consider how to incorporate decadal-scale productivity regimes in advice on management of pelagic stocks and ecosystem, and to identify priorities for future collaborative research.

The following activities will be addressed:

- Identification of quantifiable major physical forces controlling regime shifts and indices available to physical oceanographers, meteorologists and biologists to monitor and track the limits and transition of the regimes in their different temporal and spatial scales.

- Real time environmental indices to be used as recruitment indices in short term predictions for short lived small pelagic fishes or invertebrates, and their dependence on temporal and spatial scales involved in biological processes and timing of fisheries.
- Integration of valid and well monitored environmental variables in the stock assessment modeling and in stock recruitment- relationships.
- Monitoring growth, maturity, fecundity, condition factor, gonado-somatic indices as indicators of regime shifts and its possible use in medium-term projections;
- Implications in natural mortality rates, regarding pelagic fish as forage in species interactions and communities including regime shifts.
- Definition of long-term biological reference points F_{max} , $F_{0.1}$, F_{msy} , F_{pa} and B_{max} , B_{msy} , B_{pa} , considering more than one regime of productivity and harvest control rules to change between regimes.
- Feedback dialogue between scientists and stakeholders for definition of adequate management strategies in pelagic fisheries linked with advice for the ecosystem.

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8) Census of Marine Life: turning concept into reality

Co-Convenors: J Pope (Norway), C. Bannister (UK), O.A. Bergstad (Norway), J. Rice (Canada) and Ron D'Or (USA)

The Census of Marine Life project aims to assess and explain the abundance and distribution of marine life globally by co-ordinating data mining, and the collection of new data, on the biomass distribution of the various trophic levels in a range of sea areas around the world. ICES has a large amount of current and historical data on the species composition and abundance of higher trophic levels in such major parts of the ICES area as the north east Arctic, the Baltic, the North Sea, and the seas off Iberia. It also has a growing body of knowledge about deep sea species. The session will solicit papers attempting to compile and collate such data as a first step in developing an ICES contribution to the global Census of Marine Life programme.

9) Biological Effects of Contaminants in Marine Pelagic Ecosystems.

Co-Convenors: Ketil Hylland (Norway), Thomas Lang (Germany) and John Thain (UK)

A series of seven Sea-Going Workshops on Biological effects of Contaminants in Pelagic Ecosystems was held during 2001 in the North Sea, mainly in the German Bight and Statfjord areas. This represented one of the largest international research activities in the field of biological effects to be conducted so far.

The main objectives of the Workshops were to bring together specialists for practical work aiming at the identification and assessment of methods to detect biological effects of contaminants in pelagic organisms that may be used for routine monitoring purposes. There is increasing evidence for contaminant effects on pelagic organisms and there is therefore a need to study and monitor possible impacts, especially as current biological effects and monitoring programmes have been restricted to benthic habitats. Besides field sampling of pelagic organisms (fish embryos, larvae and adults as well as bacteria, phyto- and zooplankton), exposure experiments with cod and blue mussels were carried out on a contaminant gradient in each of the two main study areas. Accompanying measurements included chemical analysis of tissue and water extracts and hydrographic measurements and modelling.

Contributions are invited which address studies carried out in the framework of these Workshops. Contributions which describe similar activities carried out outside of the framework of these workshops are also welcome.

10) Theme Session: Fishery and Environmental Management – Is there a role for Operational Oceanography?

Co-Convenors: Glen Harrison (DFO, Halifax, Canada, harrisong@mar.dfo-mpo.gc.ca), Bill Turrell (FRS Marine Laboratory, UK, turrellb@marlab.ac.uk), Tom Malone (University of Maryland, USA, malone@hpl.umces.edu)

A major challenge in the coming years is to incorporate environmental parameters and their assessment into management protocols applied to commercial fisheries and the marine environment. The move towards an “ecosystem approach” in both fishery and environmental management will require the routine delivery of well tailored specific products derived from comprehensive and rigorous environmental assessment and monitoring. Such monitoring in the 21st century may involve synoptic observations of physical, chemical and biological variables with data streams that are operationally linked with process models to provide timely and skilful predictions of such important statistics as sustainable fish yields. Questions which arise include:

- What key processes or properties should be monitored in regional operational oceanographic observing systems that are relevant to fisheries and environmental management? To what extent should the monitoring of environmental variables (including the spatial extent and condition of critical habitat) be synoptic in time and space with fisheries observations, e.g., stock assessments?
- What form should this monitoring take? What are the required time and space scales of observation? What technologies will be needed (measurements and platforms)?
- What products will be required by fishery and environmental managers? To what extent do these products need to be provided in near real-time, i.e., what are the acceptable time lags between sampling or measurement and the availability of the product? How will models have to be improved to function in an operational mode?
- What are the requirements and mechanisms for transitioning current research and monitoring activities into an operational framework?
- Is the development of such an operational ecosystem approach to fisheries and environmental management realistic?

The ICES/IOC Steering Group on GOOS is already contemplating these questions, and attempting to formulate a policy for ICES in order that it maintains a leading role in the science of fishery and environmental management. Oceanographers and managers from all relevant disciplines are invited to contribute to this debate, in order to help build a consensus view of how to proceed towards providing the new tools for management in the coming decade.

13) Ocean-shelf sea interactions: implications for biology and fisheries .

Co-Convenors: Chris Reid (UK) Fatima Borges, Portugal and Dr. Einar Svendsen (Norway)

Recent studies on both sides of the Atlantic, in the North Sea and Gulf of Maine/Scotian shelf regions have demonstrated that inflows from the boundary currents at the shelf edge can have pronounced effects on adjacent shelf ecosystems. Changes in zooplankton communities appear to provide a good indicator of such inflow events. In the case of the North Sea a change circa 1988 associated with such inflows has been termed a regime shift. All trophic levels including fish were affected and the biomass of the benthos, at least at one time series station, has doubled. Nutrients, oxygen, current speed and other variables also appear to be associated with the change. Other work has shown that pulsed northerly movement of warm water in the slope current may be implicated in the biological changes. On the other side of the Atlantic, studies as part of US GLOBEC, have shown a pronounced impact on the plankton and ecosystem through incursion of cold water from intermediate depth Labrador slope water. The forcing mechanisms behind these events, their biological response and their impact on fish stocks is poorly understood. The consequence of such events may be long-lived and likely to have major implications for fish stock management. The purpose of this session will be to bring together scientists from both sides of the Atlantic to examine in an interdisciplinary way the effects of oceanic inflows onto shelf seas with the aim of identifying priorities for future collaborative research.

The following activities will be addressed:

1. Identification of historical events in shelf systems that may have been caused by major oceanic incursions.
2. The role that atmospheric variability and climate change may be playing in forcing such incursions.
3. Description of the biological responses and specifically zooplankton communities to oceanic flows into shelf systems.
4. Quantification of the physical processes and their variability that contribute to oceanic inflows.
5. Responses of fish at varying stages in their life cycles.
6. Modelling the physical basis of inflow events and resulting ecosystem responses.

Contributions will be accepted for both oral and poster sessions.

15) Oceanography and ecology of seamounts - indications of unique ecosystems

Co-Conveners: Richard Haedrich (Canada), Manfred Kaufmann (?), Hein v. Westernhagen (Germany)(hwesternhagen@awi-bremerhaven.de)

Seamounts are ecosystems spatially separated from continental shelves, sometimes several hundreds or thousands of miles. In addition they are located between the deep-sea and the euphotic zone. As such they harbour a particular array of species that have firstly, the potential to invade these relatively isolated areas and secondly, frequently live below the euphotic zone. Thus seamount communities, including those from the mid-oceanic ridges, are exposed to unique living conditions for reproduction and dispersion as well as for maintaining their livelihood.

Several submarine mounts and ridges have developed, and still maintain, large fish populations with considerable biomass, which have even triggered various exploratory and commercial fishing operations in the past.

Contributions on the ecology, biology and taxonomy of target and non-target species as well as contributions dealing with the links between hydrographic, oceanographic and biological processes on and around seamounts are invited.

Three topics will be addressed in particular

- Biodiversity and macro-ecology of seamounts (endemism at seamounts - isolated habitats or stepping stones in the Sea? - community structure and regional fauna)
- Food web structure over seamounts (links between currents and topography important for the aggregation and production of plankton and micronecton - modification of benthic-pelagic coupling over seamounts)
- Vulnerability of seamount ecosystems (prospects for nature conservation and the potential role of marine nature reserves - sustainable use and limits to exploitation for commercially important species)

16) Salmon: is Mariculture a Threat to Wild Stocks?

Co-conveners: Jackie Doyle (Ireland), Arni Isaksson (Iceland)?; and Terje Svåsand (Norway – terje.svaasand@imr.no)

Salmon stocks are depleted, and in certain areas they are outside safe biological limits. In recent years it has been suggested that increased farming activities of Atlantic salmon could be playing an important part in the depletion of wild salmon stocks.

The production of farmed Atlantic salmon was close to 700,000 tons in 2000 compared to a total catch of about 4,000 tons of wild salmon. Norwegian data indicate that 452,000 Atlantic salmon escaped from farms in 1999 and salmon of farmed origin accounts for approximately 20% of wild Norwegian catches. Furthermore, the incidence of farmed salmon in spawning populations is high in some rivers which may lead to the possibility of irreversible changes in genetic structure.

Farmed salmon are also regarded as a major vector for diseases and parasites. There are strong indications that salmon lice, and as noted by the ICES Working Group on North Atlantic Salmon, could be an important factor in determining the level of marine mortality of post smolts leaving the river.

In order to address the above issues, papers and posters are invited which address interactions between wild and farmed salmon with special focus on the effects of genetic and ecological impacts of escapees and disease and parasite infections. Papers and posters which address the following specific topics are particularly welcome:

- survival and behaviour of escaped Atlantic salmon;
- ecological effects of escaped farmed salmon on the reproductive success of wild salmon;
- the gene flow between escaped farmed salmon and wild stocks, and their potential effects on genetic diversity and survival of wild stocks;
- salmon lice: the influence of farming activity on the infection rate of wild salmon stocks.

17) Shelf seas processes: the foundation for ecosystem understanding

Co-Convenors: Charles Hannah (Canada), Wolfgang Fennel (Germany), and Harald Loeng (Norway)

This session will address physical oceanographic processes in coastal ocean-circulation, turbulence, upwelling, etc.

Papers & posters are invited to focus on the following issues

- modelling of circulation and transports.
- turbulence in the coastal ocean boundary layers and the water column.
- measurements, comparisons, and validations.

18 The effects of fishing on the genetic composition of living marine resources

Convenors: Olav Rune Godø (Norway), Adriaan Rijnsdorp (Netherlands)

The subject of this theme session is based on an on-going international project led by IIASA (International Institute for Applied System Analysis).

The literature is replete with evidence for the effects of high and selective fishing pressure on population abundance and composition and on other characteristics like growth and age at maturation. The evidence on long-term effects of fishing on the genetic composition of stocks has until now been quite vague, particularly because the methodology to study the problem has been poorly developed. Nevertheless, taking into account the number of depleted and overexploited fish populations, and the increasing extent of time series of scientific data, and recent methodological developments, the time is thought to be mature for a theme session on this issue. The main objective is to review the evidence from available long time series as well as to see what insight is available from modelling approaches to resolve the problem. Important scientific questions are:

- Are the high exploitation pressures presently experienced by many stocks eroding their genetic composition?
- How can analyses of long time series help to elucidate the problem?
- What methods and results, empirical as well as theoretical, are available to tackle these questions?
- Should these considerations impact on current management practices?

19) New Developments and Applications of Genetics in Fisheries Management and Aquaculture

Co-Convenors: Michael M. Hansen (mmh@dfu.min.dk), Einar Eg Nielsen (een@dfu.min.dk), Danish Institute for Fisheries Research, Dept. of Inland Fisheries, Vejlsovej 39, DK-8600 Silkeborg, Denmark (population genetics), Sheila Stiles (sheila.stiles@noaa.gov), NOAA Fisheries, Northeast Fisheries Science Center, 212 Rogers Avenue, Milford, CT 06460-6499 USA (aquaculture genetics)

The past few years have witnessed accelerating developments in genetics, including both the use of biotechnology and Bayesian- and Markov Chain Monte Carlo-based statistical methods in population genetics and in aquaculture.

For instance, in population genetics methods are now available that allow for determining the population of origin single individuals and for assessing whether individuals have ancestors from different populations. These methods could be of particular use in forensics, for assessing the genetic impact of farmed fish on wild populations, and in

ecological studies, i.e., following the drift of larvae from different populations. Other developments include methods for determining demographic parameters, including expansion or decline of populations. On a general level, microsatellite DNA markers have now, in several cases, demonstrated weak but statistically significant genetic differentiation in marine fishes, which is of obvious interest in the management of populations.

In aquaculture genetics marker-assisted selective breeding programmes have now been implemented in several cases. In the near future, it is also expected that this area will benefit from developments in genomics. Other developments may be addressed such as the use of polyploids and GMOs in aquaculture, considered both from a production and an environmental perspective.

This theme session will focus particularly on the new and vastly improved possibilities for integrating population genetics in fisheries management and for improving aquaculture production, but also will consider problems, pitfalls, and environmental issues connected to these developments.

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20) Use of Marine Research Vessels in ICES – Options for the future.

Co-convenors: N.A. Nielsen, Denmark, M. O’Cinneide, Ireland

The aims of this sessions are to promote cooperation and shared activities among ICES members, in line with Goal 5 of the ICES Strategic Plan - to consider quality assurance and standards in Research Vessel programmes and to review new technologies and potential future applications for research vessels.

Contributions to this session will be by invitation only. The session will be of interest to the ICES marine research community and agencies which finance the research vessels.

TABLE 2

2003 Proposed Theme Sessions

- 1) Size-dependency in population processes of marine and freshwater organisms. Co-Convenors: P. Pepin (Canada), E. Houde (USA), H. Gislason (Denmark), J. Pope (Norway), and J. Rice (Canada)
- 2) The Scope and Effectiveness of Stock recovery Plans in Fisheries Management. Convenor: P. Connolly (R. Ireland), C Bannister (UK) (Possible Co-Convenors: Olle Hagström (EC) ???, Lars Karlsson (Sweden))
- 3) Experience with and Perspectives on Marine Protected Areas as a Tool for Conservation of Biodiversity and Improvement of Sustainability of Fisheries. (Co-Convenors ??)
- 5) “Acoustic seabed classification – Applications in fisheries science and ecosystem studies”. Co conveners: D Reid (UK) and??
- 6) “Monitoring techniques and estimating abundance of land-breeding seals”. Co-convenors: T. Härkönen, Sweden, and M. Hammill, Canada
- 7) Recruitment Processes: Applying new tools to solve old problems Co-convenors: E Houde (USA), P Pepin (Canada), P Petitgas (France)
- 8) Fleet based predictions – Techniques and concepts (Co-convenors: Laurie Kell (UK)? P Degnbol (Denmark), J. Sutinen (USA), T Bjørndal (Norway))
- 9) Organising fish stock assessment – the efficient use of scarce human resources (Co-Convenors: Gerd Hubold (Germany)? and Ralph Mayo/Fred Serchuk (USA)??
- 10) Session J/2001 revisited (Co-convenors??)
- 11) Regional Long Term Changes in the spatial distribution, abundance and migration of pelagic and demersal resources. Co-convenors ???
- 12) Deep Sea Fish, Fishing and Ecological Impacts. Co-Convenors: N. Hammer (Germany), P. Lorance (France), O. Bergstad (Norway) and J. Gordon (UK)
- 13) Baltic Ecosystem (Co-convenors??)
- 14) review the historical use of technical measures and evaluate their effectiveness, with special emphasis on North Sea gadoid fisheries.

TABLE 2 continued

2003 Session Synopses

1) Size-dependency in population processes of marine and freshwater organisms

Co-Convenors: P. Pepin (Canada), E. Houde (USA), H. Gislason (Denmark), J. Pope (Norway), and J. Rice (Canada)

There is renewed interest in the possibility of analysing and modelling size-dependent processes in predator-prey relationships in order to estimate potential productivity, and to predict the consequences of exploitation on the dynamics and recruitment potential of fish and shellfish. The proposed theme session will provide a basis for extending observations and theory beyond those available for early-life stages of fish to encompass those for other organisms and to include results of research on organisms, life stages, and size across the entire food web.

It is suggested that the following theme session of the Living Resources and Resource Management Committees be also adopted for salmonids:

2) The Scope and Effectiveness of Stock recovery Plans in Fisheries Management

Convenor: P. Connolly (R. Ireland), C Bannister (UK)

Possible Co-Convenors: Olle Hagström (EC) ???, Lars Karlsson (Sweden)

1. There are several recovery plans developed for fish stocks, e.g. the salmon action plan in the Baltic and the rebuilding plan for Irish Sea Cod;
2. There are a number of long-term strategies adopted in management that include as a specific objective rebuilding of the stock to higher levels than those seen at present, e.g. Icelandic cod, Baltic Cod and North Sea Herring,
3. There are other stocks for which long-term objectives have been agreed for management use without these having specific rebuilding targets included, e.g. Norwegian spring spawning herring, North Sea plaice and Northeast Atlantic mackerel.

The theme session shall address the following topics

- A presentation of case studies that illustrates the design, potential, implementation, monitoring and evaluation of recovery plans for a range of species, geographical areas and stock units;
- A presentation of models that are suitable to investigate the likely outcomes
- Identify the elements of a recovery plan and distinguish the elements that are relevant from a biological advisory perspective from other elements that are found in the management decisions. The reasons why these additional elements are present shall be explored
- Identify different types of recovery plans and relate these to the situations under which each type of plan is expected to be effective. Their design and likely success include an understanding of the social context in which the plan shall operate. But also depend on such life history characteristics as lifespan, age at first maturity, natural mortality and growth rate, as well as the time and space distribution of juveniles and spawners relative to different fisheries.
- How have the existing recovery plans performed compared to their expected performance. Where deviations from the expected performance are identified discuss the reasons for these deviations: have the biological models failed or is it the implementation of the management measures that had not lead to the desired target.

The theme session shall conclude by identifying the required conditions under which a recovery plan can be expected to lead to the desired results.

3) Experience with and Perspectives on Marine Protected Areas as a Tool for Conservation of Biodiversity and Improvement of Sustainability of Fisheries. (Co-Convenors ??)

A Theme Session in about 2002 on experience with and perspectives on Marine Protected Areas as a tool for conservation of biodiversity and improvement of sustainability of fisheries would be appropriate. A model of particular

interest would be choosing several different areas within the ICES region, and identifying for each one individual experienced in fisheries science and one experienced in conservation biology to prepare parallel contributions on siting and sizing an MPA in that area.

From 2000 Minisymposium

5) “**Acoustic seabed classification – Applications in fisheries science and ecosystem studies**”. Co conveners: D Reid (UK) and??

(FTC)

6) “**Monitoring techniques and estimating abundance of land-breeding seals**”. Co-conveners: T. Härkönen, Sweden, and M. Hammill, Canada

(MHC)

7) **Recruitment Processes: Applying new tools to solve old problems** Co-conveners: E Houde (USA), P Pepin (Canada), P Petitgas (France)

Recent studies provide new knowledge and understanding of stock structure, ontogenetic migrations, transport and retention. Results come from new methodologies combined with more traditional approaches. Application of biochemical indices (and refinements of such indices as nucleic acid ratios and genetic markers) and larval “tagging” studies (eg tetracycline or other chemical marks on otoliths), analyses of otolith chemistry (eg stable isotopes) and bio-physical modelling are very effective in diagnosing status of early-life stage processes and dynamics.

The session should

- 1) Examine and evaluate new methods
- 2) Provide case studies, particularly examples detailing field experiments
- 3) Emphasize interdisciplinary research (eg physics, chemistry, genetics)
- 4) Evaluate potentials of new instruments, analytical approaches or modelling tools.

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8) **Fleet based predictions – Techniques and concepts** (Co-conveners: Laurie Kell (UK)? P Degnbol (Denmark), J. Sutinen (USA), T Bjørndal (Norway))

The Theme session will address the following case studies:

- i) North Sea Herring splitting the autumn spawning herring TAC between IV and IIIa
- ii) Central Baltic Herring splitting between the Gulf of Riga and Open sea
- iii) Northeast Arctic Cod splitting between the Norwegian and Russian Fishing fleets – an example of the use of FLEKSIBEST
- iv) The Faroe Islands effort management system – predicting stock development in an effort management system

Topics to be addressed include:

- i) Fleet reaction to stock structure and overall abundance, to management and to market demand and prices
- ii) Technical interactions and how these are affected by relative stock abundance
- iii) Prediction techniques for fleet based approaches

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9) **Organising fish stock assessment – the efficient use of scarce human resources** (Co-Conveners: Gerd Hubold (Germany)? and Ralph Mayo/Fred Serchuk (USA)??

The Theme Session will address the following case studies

- i) The ICES system for producing assessments.
- ii) The Canadian and USA systems used on the American/Canadian East coast.
- iii) The information system behind the EC Common Agricultural Policy (CAP).
- iv) The information system in OSPAR and HELCOM
- v) The Information system on OECD

Topics to be addressed include

- i) How to organise international information systems
- ii) Criteria for when it is useful to establish and ICES fish stock assessment
- iii) Review of usefulness of ICES fish stock assessments as input to management

10. Session J/2001 revisited (co-convenors??)

Following the success of Session J (Life History, Dynamics and Exploitation of Living Resources) during this years ASC, and recalling previous problems with finding a home for species-scientists and their papers on life history and biology, LRC proposes that this Theme session should be repeated at regular intervals, commencing in 2003.

LRC

11 Regional Long Term Changes in the spatial distribution, abundance and migration of pelagic and demersal resources. Proposed for 2003.

The conveners should represent: Arctic Seas, North Sea, Baltic Sea, Western waters, Southern waters, other waters.

Justification: As stocks of some key commercial species decline, assessments are deteriorating due to the declining quality of fisheries data, leading to an increasing dependence on the results of survey series. Also, as stock abundance declines, spatial patchiness, and the likelihood of changes in distribution due to species interactions and climate change, become increasingly important. There is scope to use survey data and fisheries log book data to examine the spatial heterogeneity of abundance within species and areas, and to attempt to find evidence of environmental shifts by comparing both the relative abundance across species within regions, and the relative abundance within species across regions.

LRC

12) Deep Sea Fish, Fishing and Ecological Impacts

Co-Convenors: N. Hammer (Germany), P. Lorance (France), O. Bergstad (Norway) and J. Gordon (UK)

Deep-sea resources have been attracting increasing attention as the fish stocks in the traditional fishing areas have declined, and there is therefore an increasing need for precise information on stock structure, fisheries biology and abundance, and the ecosystem effects of fishing. The session will seek papers updating our knowledge of these factors as a basis for developing an approach to their management. These papers will include the results of a project to develop the potential of otolith microchemistry for identifying stock structure of deep sea species (EU Fair Project OTOMIC).

(LRC/RMC)

13) Baltic Ecosystem

to be developed by Baltic Committee

14) review the historical use of technical measures and evaluate their effectiveness, with special emphasis on North Sea gadoid fisheries.

Arose from the 2002 FTFB tors.

Table 3 Lists of the various Working Groups, Study Groups, and other Groups and Workshops that were dissolved, established, or renamed by virtue of Council Resolutions at the 2000 Annual Science Conference.

Type of Action	Name	
Dissolved	Steering Groups	
	Steering Group for a Sea-Going Workshop on Pelagic Biological Effects Methods [SGSEA]	
	Study Groups	
	Study Group on Baltic Cod Age Reading [SGBCAR]	
	Baltic Herring Age Reading Study Group [BHARSG]	
	Study Group to evaluate the effects of Multi Species Interactions [SGEEMI]	
	Planning Groups	
	Planning Group on Comparing the Structure of Marine Ecosystems in the ICES Area [PGECML]	
	Established/Re-established	Working Groups
		Fisheries Statistics Liaison Working Group [WGSTAL]
Working Group on Integrated Data Management [WGIDM]		
Working Group on the Assessment of Southern Shelf Stocks of Hake, Monk and Megrin [WGHMM]		
Planning Groups		
Planning Group on Aerial and Acoustic Surveys for Mackerel [PGAAM]		
ICES-EuroGOOS Planning Group on the North Sea Pilot Project [PGNSP]		
Planning Group on Commercial Catch, Discards and Biological Sampling [PGCCDBS]		
Planning Group on North Sea Cod and Plaice Egg Surveys [PGEGBS]		
Planning Group on Commercial Catch, Discards and Biological Sampling [PGCCDBS]		
Study Groups		
Study Group on the Development of Marine Data Exchange Systems using XML [SGXML]		
ICES/AMAP Study Group for the Assessment of AMAP POPs and Heavy Metals Data [SGPOP]		
Study Group on Cold Water Corals in Relation to Fishing [SGCOR]		
Study Group on Age-length Structured Assessment Models [SGASAM]		
Workshops		
Workshop on the Transport of Cod Larvae [WKTCL]		
Workshop on New perspectives in understanding and predicting eutrophication [WKNUPE]		
Workshop on MSVPA in the North Sea [WKMSNS]		
Workshop Course on Fish Stock Assessment Techniques [WKCFAT]		

Renamed**Steering Group**

The ICES/OSPAR Steering Group on Quality Assurance of Biological Measurements Related to Eutrophication Effects [SGQAE] will be renamed the ICES/OSPAR Steering Group on Quality Assurance of Biological Measurements in the Northeast Atlantic [SGQAE]

Study Group

Study Group on an ICES/IOC Microplankton Protist List [SGPHYT] will be renamed the Study Group on an ICES/IOC Checklist of Phytoplankton and other Protists [SGPHYT]

The Study Group on Multispecies Predictions in the Baltic will be renamed the Study Group on Ecosystem and Multispecies Predictions [SGMPB]

Table 4 **New Study/Working Group Chairs**

The Council's attention is drawn to the following new Chairs of Working Groups, Study Groups, and other Groups and Workshops:

Chairs	Group
Working Group	
R. Furness ,UK	Working Group on Seabird Ecology [WGSE]
L. Edler, Sweden	Working Group on Phytoplankton Ecology [WGPE]
A. Isenor, Canada	Working Group on Marine Data Management [WGMDM]
H. Thorsteinsson, Norway	Herring Assessment Working Group for the Area South of 62°N [HAWG]
E. Hjorleifsson, Iceland	North-Western Working Group [NWWG]
M. Bell, UK	Working Group on <i>Nephrops</i> Stocks [WGNEPH]
S. Flatman, UK	Working Group on the Assessment of Southern Shelf Demersal Stocks [WGSSDS]
A. Biseau, France	Working Group on the Assessment of Southern Shelf Stocks of Hake, Monk and Megrin [WGHMM]
D. Cross, Eurostat	Fisheries Statistics Liaison Working Group [WGSTAL]
F. Smedes, Netherlands	Working Group on Marine Sediments in Relation to Pollution [WGMS]
J-P. Robin, France	Working Group on Cephalopod Fisheries and Life History [WGCEPH]
R. Oeberst, Germany	Baltic International Fish Survey Working Group [WGBIFS]
P. Wiebe, USA?	Working Group on Integrated Data Management [WGIDM]
E. Black, Canada	Working Group on Environmental Interactions of Mariculture [WGEIM]
D. Somerton, USA	Working Group on Fishing Technology and Fish Behaviour [WGFTFB]
Study Group	
C. Hannah, Canada	Study Group on Modelling of Physical/Biological Interactions [SGPBI]
G. Hällfors, Finland	Study Group on an ICES/IOC Checklist of Phytoplankton and other Protists [SGPHYT]
O. Tully, Ireland	Study Group on the Biology and Life History of Crabs [SGCRAB]
R. Gelfeld, U.S.A. and A. Isenor, Canada	Study Group on the Development of Marine Data Exchange Systems using XML [SGXML]
M. Tasker, UK	Study Group on Cold Water Corals in Relation to Fishing [SGCOR]
F. Riget, Denmark	ICES/AMAP Study Group for the Assessment of AMAP POPs and Heavy Metals Data [SGPOP]
C. Bannister, UK and M. Azevedo, Portugal	Study Group on the Further Development of the Precautionary Approach to Fishery Management [SGPA]
K. Guldbrandsen Froeysa, Norway	Study Group on Age-length Structured Assessment Models [SGASAM]
Planning Group	
J.A. Jakobsen, Faroe Islands	Planning Group on Surveys on Pelagic Fish in the Norwegian Sea [PGSPFN]
E. Shamray, Russia	Planning Group on Aerial and Acoustic Surveys for Mackerel [PGAAM]

H. Loeng, Norway	ICES-EuroGOOS Planning Group on the North Sea Pilot Project [PGNSP]
J. Dalskov, Denmark	Planning Group on Commercial Catch, Discards and Biological Sampling [PGCCDBS]
J. Casey, UK	Planning Group on North Sea Cod and Plaice Egg Surveys [PGEGBS]
J. Dalskov, Denmark	Planning Group on Commercial Catch, Discards and Biological Sampling [PGCCDBS]

Steering Group

W.R.Turrell, UK	The ICES/IOC Steering Group on GOOS [SGGOOS]
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Workshop

J. Quinlan, USA and M. St. John, Germany	Workshop on the Transport of Cod Larvae [WKTCL]
T Smayda, USA	Workshop on New perspectives in understanding and predicting eutrophication [WKNUPE]
M. Vinther, Denmark and C.M. O'Brien, UK	Workshop on MSVPA in the North Sea [WKMSNS]
C.L. Needle, UK; and C.D. Darby, UK	Workshop Course on Fish Stock Assessment Techniques [WKCFAT]

ANNEX 1

Plan and timetable for developing Action and Workplans in support of the ICES Strategic Plan

A) Science Committee Action Plans (SCAPs) should be based on the integration ideas in draft proposals by the Resource management, Living Resources and Oceanographic Committees

Structure of SCAP:

Committee remit

Introduction

Action plan

1. Review and rationalise existing committee working, steering and study groups
2. Identify and establish priority areas of scientific activity with particular emphasis on cross-committee collaboration
3. Identify areas of work to support the advisory process
4. Contribute to the Annual Science conference and symposia

Action Plan point 1 (*Review and rationalise existing committee working, steering and study groups*) should include text detailing

- monitoring review and peer review procedures
- Scientific Committee meetings to discuss WG/SG/PS that have completed their reports and others to be formed in the coming year(s)

Action Plan point 2 (*Identify and establish priority areas of scientific activity with particular emphasis on cross-committee collaboration*) should be sub-divided into sub-sections (e.g. RMC) but with written details of WG/SG/PG (c.f. LRC) not ToRs and with (planned) actions and (expected) outcomes (e.g. OCC).

Timetable

End of October 2001 – Chair to send draft to scientific committee members.

End of November 2001 – revision by Chair based upon comments received.

December 2001 - copies to members of Consultative Committee for comment before Consultative Committee sub-group meeting in January 2002.

The SCAP, once agreed, will be reviewed annually at the Statutory Meeting in order to ensure that the concerns of the Scientific and Advisory Committees are fully addressed.

B) Advisory Committee Action Plans (ACAPs) should be simpler to produce than the SCAP as linkages to science committees need only be stated (with reference to SCAP) in their Action Plan point 2.

Advisory Committees need to ensure that the Science Committees will assist their response to regulatory commissions, Member countries and partner organization requests for advice.

ACAPs primarily respond to external requests for advice but ACE and ACME are also mandated annually to provide any other advice that the Council or the Committee themselves may consider relevant.

Less of a need to revise annually than SCAPs.

Parenting of groups specifically relevant to the provision of advice not done by scientific committees.

Timetable

End of October 2001 – Chair to send draft to advisory committee members.

End of November 2001 – revision by Chair based upon comments received.

December 2001 - copies to members of Consultative Committee for comment before Consultative Committee sub-group meeting in January 2002.

C) Sub-group of CONC

To produce a draft generic work plan based around the SCAPs and ACAPs.
Timescale - the foreseeable future.

Draft structure of ICES Work Plan based on SCAP/ACAPs:

- ICES remit
- Introduction
- Work plan
 1. Review and rationalise ... etc.
 2. Identify and establish ... etc.
 3. Identify areas ...etc.
 4. Contribute to the ... etc.

Work Plan point 2 (*Identify and establish ... etc.*) written around ICES Strategic goals.