

## **Mariculture Committee (F)**

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Chair: Thomas W. Sephton (Canada)

Rapporteur: Ellen Kenchington (Canada)

The Mariculture Committee (MCC) met on Tuesday 21 September 2004 from 14:00–18:00 and on Thursday 23 September 2004 from 08:30–10:30. Fifteen participants attended the meetings.

### **Opening**

The Chair welcomed everyone to the meeting, took attendance, and provided housekeeping details. It was noted that only approximately half of the Mariculture Committee members were in attendance. Through the course of the year there has been a low level of interaction within the Committee, but very good interaction within the constituent working groups. This is a general problem within some ICES Science Committees. It emerged from the discussion of this issue that some members may not have received information (and hence did not respond) due to incorrect e-mail addresses: this was rectified.

### **Appointment of Rapporteur**

E. Kenchington was proposed as Rapporteur prior to the meeting and was accepted by the Committee.

### **Adoption of Agenda and Timetable**

The meeting timetable and agenda were circulated prior to the meeting, discussed briefly and adopted. A call for other business items was made but no items were added.

### **Arrangements for the meeting**

There were some last minute changes to the ASC schedule and the Mariculture Committee guest speaker for the Invited Plenary Lecture thus became Mr. Alistair Lane, Executive Director, European Aquaculture Society (EAS), Belgium. The title of his talk was “Sustainable Aquaculture Development in Europe”. Introductory notes were prepared by the Chair with the assistance of others.

This year, the Mariculture Committee had only one Theme Session: V: Mariculture in the Coastal Zone, Sustainability, Perspectives and Limitations [Convener: Josianne Støttrup, Denmark]. This was a small session with only six oral presentations and six posters. Unfortunately, the organizing committee collapsed three of the Mariculture Committee theme sessions into one due to a lack of participation. It was felt that conflicting meetings by other aquaculture associations and groups were responsible for not being able to draw the necessary participants to fulfill the intended agenda. It was also suggested that the timing of the abstracts might be a problem for some groups. Many of the Expert Groups meet in May and so there is little time to raise enthusiasm to participate amongst the Expert Group members in person. However, the overall ASC conference attendance was high this year and so this is clearly not a deterrent for others. A discussion on the process for selecting topics for theme sessions was deferred to the agenda item on Forthcoming symposia and theme session topics.

## **Committee business**

The Mariculture Committee initiated a new method to review annual WG reports by sub-groups of Mariculture Committee members with limited success. WG Chairs were reminded that reports are to be submitted within three weeks of close of the annual WG meeting. Each Chair was given 20 minutes to present the highlights of the WG meeting to the Mariculture Committee.

### **Report of Expert Groups**

Prior to the meeting the Chair asked that WG Chairs prepare short presentations on the activities of their WGs, highlighting significant results and bringing forward outstanding issues for discussion. For example, progress being made in relation to achieving the ICES action plan or ToRs being suggested for other Expert Groups to consider. This approach was proposed after the 2002 Mariculture Committee meeting as an alternative to longer presentations addressing all ToRs, given the fact that all reports are circulated to the Mariculture Committee prior to the meeting. It was noted that each WG should conclude its meeting with the ratification of the draft WG Report and that it should be available for each member to leave with a copy for further review and comment.

The WG Chairs were made aware of the proposed REGNS (Regional Ecosystem Group for the North Sea) Study Group and encouraged to attend the discussion meeting during the ASC in order to see if their expertise should be included.

### **WG on the Application of Genetics in Fisheries and Mariculture [WGAGFM] (Doc. F:04)**

E. Kenchington (Chair) presented the highlights of the report of the 2004 WGAGFM which met in Hamburg, Germany from 3 to 5 May, 2004. Fifteen persons representing ten countries were present with five others participating through correspondence prior to and during the meeting, and nine apologies received. This is a considerable improvement over the previous year and can be attributed to the updating of the membership list by the ICES Secretariat, direct encouragement from Mariculture Committee members in soliciting attendance from their official members and movement of the timing of the meeting to early May after the close of the academic year. Five terms of reference (ToR) were addressed, although one was dismissed as the appropriate information was unavailable for review. Nineteen recommendations were made arising from the ToRs. One of the ToRs was at the request of WGECON and will be used in the provision of advice to ACE. Other ToRs addressed stock structure in eels, an evaluation of reaction norms as a method for detecting evolutionary change, and a review and an assessment of the methods for determining effective population size ( $N_e$ ) in marine fishes. The WG continues to do an excellent job of completing their ToRs and addressing issues of relevance to ICES.

The WG has a process of establishing the venue of the meeting two years in advance in order to allow for the hosts to prepare. In 2005 the WG meeting is proposed for the Danish Institute for Fisheries Research, Silkeborg, Denmark, 3–6 May 2005 (E. Eg Nielsen host) with the 2006 meeting proposed for Newport, Ireland (P. McGinnity host).

The WG was active on other issues intersessionally, specifically reviewing Annex 7 of the ICES Code of Practice for the Introductions and Transfers of Marine Organisms 2003 and adding material on triploid organisms for inclusion, and also participating in the Study Group on Stock Identity and Management Units of Redfish

(SGSIMUR) (Chair: Kjell Nedreaas, Norway) which met in Bergen, Norway, from 31 August to 3 September 2004. At least three WG members attended the SGSIMUR meeting in person while two others provided comments through correspondence. This is separate from WG members who were directly involved with the study.

It was noted that 2005 will be the last meeting for the current WG Chair and that at the 2005 meeting a new chair will be elected for a three-year term to commence in 2006.

Mariculture Committee members commented on the relative balance of ToRs related to mariculture vs. fisheries (WGAGFM has both mandates) and queried whether the WG was reporting to the correct committee. The WG Chair felt that the advice was reaching the appropriate interests within ICES but that this was a matter for the Mariculture Committee to discuss, presumably with ACME, ACE, and ConC. She also stated that the WG had sufficient expertise to address questions related to mariculture and encouraged the other WG Chairs to think of WGAGFM as a resource to supplement their ToRs. In particular the WG has experts able to comment on triploids, inbreeding, heterosis, and other issues of concern to both finfish and shellfish culture. A case in point is the contribution made to WGITMO at very short notice. A. Bodoy suggested that joint or overlapping meetings might be planned in the future.

*Action Item: Mariculture Committee Chair to review the parent Committee reporting relationships of WGAGFM with ACME, ACE, and ConC.*

The Mariculture Committee Chair commented positively on the fact that WG practice is to identify a lead for each proposed ToR. The WG Chair advised that this practice was established as WG form by the previous Chair (M. M. Hansen) in order to ensure that expert advice was present at the meeting to address the ToRs (leads must put forward the ToR to the meeting, solicit consensus to proceed from meeting attendees, and must agree to attend the meeting the following year to present the ToR and contribute to the WG report).

#### **WG on Environmental Interactions of Mariculture [WGEIM] (Doc. F:02)**

No written report was submitted due to a changeover in chairmanship (E. Black outgoing, F. O'Beirn incoming). The next meeting is scheduled for Ottawa, Canada hosted by E. Black. The Mariculture Committee Chair reported good progress on all ToRs, with the following highlights:

- The implementation of the Water Framework Directive (2000/60/EC) has progressed with the publication of all the guidance documents and the restructuring of the common implementation process. However, uncertainty still remains around some of the implications of monitoring for the Water Framework Directive and how the impact of aquaculture activities in a water body will be regarded as they will be considered as one of the pressures acting on the overall quality of the water body.
- Work initiated on five documents dealing with the potential impacts of escaped aquaculture marine non-salmonid finfish species: cod, halibut, sea bass, sea bream, and turbot. Using format of risk analysis.
- Excellent synthesis document produced which summaries the state of knowledge of the literature and research on the current bath treatments and in-feed additives (treatments) used to treat salmon for sea-lice and their fate in the near and far field environment and their effects on non-target organisms (e.g., crustaceans and invertebrates). This document will be published as a book chapter.

*Action Item: Chair of WGEIM to correspond with WGAGFM and review the historical information produced by WGAGFM for the genetic implications when preparing its state of knowledge reports and the associated risk analyses information summaries.*

#### **WG on Marine Fish Culture [WGMAFC] (Doc. F:03)**

The Mariculture Committee Chair presented a report submitted by the Chair (A. Mangor-Jensen) who sent his apologies to the meeting. The WG plans to meet in May somewhere in Scotland. The WG has examined many practical aspects of marine fish culture over the last 20 years. Marine aquaculture has developed to become a profitable industry in many countries. A natural evolution of the tasks of the WG will be to focus on welfare aspects for the fish in captivity to position ICES to provide relevant integrated advice to the ICES client community.

#### **WG on Marine Shellfish Culture [WGMASC] (Doc. F:05)**

A. Bodoy (Chair) presented an update on the 2004 activities of WGMASC. This new WG met for the second time in 2004 in Portland, Maine (USA). The WG was established to deal with the development of shellfish culture. Because of the importance of seed availability for research, aquaculture and enhancement activities, a better knowledge of hatchery production and technology is required. Shellfish are dependant of the surrounding environment, both in terms of available food and survival rates. These can be affected by predation, pathogens, pollutants, and water quality. The WG should contribute to increase our understanding on how these different items can affect shellfish production.

The WG has a variety of ToRs that will generate good advice for ICES clients. In order to get information on the state of the industry they devised questionnaires and circulated them to major shellfish growers and hatchery operators. It was suggested that the WG could exchange ToRs with WGAGFM to fill out their guidelines for shellfish culture, particularly with respect to inbreeding and triploid production.

*Action Item: Chair of WGMASC to correspond with WGAGFM to review the information base of genetic implications of shellfish culture which WGAGFM has produced.*

*Action Item: Chair of WGMASC to work with Chair and members of WGEIM on the subject of shellfish carrying capacity as it appears in the ToR for both expert groups.*

#### **WG on Pathology and Diseases of Marine Organisms [WGPDMO] (Doc. F:01)**

The Mariculture Committee Chair noted that excellent progress on all ToRs had been made and that this WG is active in the provision of advice to ACME. The WG Chair (T. Lang) sent a request to Mariculture Committee members to ensure active participation in the WG. Of note from the annual report:

- In general, there is little information regarding disease/parasite interactions between wild and farmed fish. Emphasis should therefore be given to research in this area. Increased use of wild broodstock for the enhancement of aquaculture activities increases risk of introducing pathogens. Important to further develop and implement measures (e.g., predictive risk assessment models) to assess and minimise the risk of disease transfer from wild to farmed fish and vice versa.
- WGPDMO nominated S.W. Feist, UK as new editor for the ICES Identification Leaflets for Diseases and Parasites of Fish and Shellfish. The report on trends in important diseases affecting the culture of fish and molluscs in the ICES area 1998–2002 was published.

- WGPDMO will actively contribute to the ICES integrated regional assessment of the North Sea Ecosystem coordinated by the ICES Regional Ecosystem Study Group for the North Sea (REGNS). Contribution will focus on an assessment of data on the health status of North Sea biota for the period 2002–2004, and will also examine any trends in the prevalence of diseases over the recent decades and the results of an analysis on cause-effect relationships between diseases and environmental factors.

Mariculture Committee members noted that not all governments are able to monitor finfish health to the necessary standards in order to understand the normal background loads of diseases and parasites. This information is needed so that we are not looking backward when disease outbreaks in farmed fish occur. WGPDMO is actively involved in the REGNS Study Group (see above).

## **Consultative Committee and Mariculture Committee business**

### ***Nominations for the ASC Award Selection Committee***

ICES is restructuring the Award Selection Committee in order to increase the value of the present recognition system. A small Study Group was put together to revitalize the awards scheme. There are now five awards: Service (new), Merit (existing), President's Certificate of Recognition (new), President's Prix d'Excellence (new), and Lifetime Achievement Awards (existing). Details can be found on the ICES website. Nominations to the Awards Committee will be sought over the coming year.

Another Young Scientists conference is planned for 2007. WG Chairs were asked to identify potential young members who may wish to help organize the meeting. It was noted that a 'Young Scientist' is usually someone under 40 with less than 10 years experience. The Mariculture Committee Chair agreed to get details on the conference and to distribute them to the WG Chairs so that they can canvass their members. A couple of names were suggested at the meeting and transmitted to the ICES Secretariat.

### ***ConC update and requests***

Bureau and ICES Delegates are to finalize a resolution to open the participation of the WGs reporting to Science Committees (e.g., all our WGs) to all those who are authorised by the WG Chair (in cooperation with the WG members) and able to participate and contribute to achieving the WG ToRs. Currently ICES rules state that only those nominated or identified by national Delegates can attend WG meetings. This will increase exposure of the WG to those outside of normal ICES interactions who would not normally be allowed to attend. Success stories of WGs (Fish Technology, Ballast Water) welcoming 'outsiders' into their meetings prompted this change, thereby broadening the awareness of ICES and providing a vehicle for introducing new blood to the organisation. WG Chairs must still deliver products to meet their ToRs. Some questions were raised as to whether some members would still be identified as official members as this can be an important factor in getting permission to attend the meeting. The Chair of WGAGFM stated that this has been the practice of that Working Group for over a decade and that two classes of attendees are recognized; observers who participate in the meeting but do not vote on recommendations or put forward ToRs, and official members who participate fully. This has allowed students and local scientists to contribute expertise to the meetings.

The ConC discussion of having WG Chairs become ex officio members of Science Committees was not approved by the Delegates as this might introduce an imbalance among countries on matters that required a vote.

### **ACME update and requests**

WG chairs should be consulted early in the year by assigned ACME contacts so that advice can be organized well in advance of advisory meetings. The Mariculture Committee Chair advised that there is now a new term – “Expert Groups” – which will eventually be used throughout ICES to replace SG and WG.

### **Mariculture Committee action and responses**

The Mariculture Committee is still monitoring the Strategic Plan and reviewing WG ToRs in that context.

### **Forthcoming symposia and theme session topics**

The Mariculture Committee Chair advised the ConC that there are a number of conflicting aquaculture science conferences and symposia occurring within the same timeframe as the Annual Science Conferences (ASC) in 2005 (Aberdeen) and 2006 (The Netherlands). For example, EAS, WAS, the National Shellfish Association, and the European Marine Biology Association have conferences and symposia that will attract many who might otherwise attend the ASC. For the future it was felt that larger over-arching theme sessions are more likely to succeed. Also, ICES should consider seriously the possibility of co-sponsoring sessions as part of other aquaculture conferences and events in order to maintain its visibility in mariculture.

### **2005 ASC and supporting Resolutions**

The conference will take place in Aberdeen, Scotland. The Mariculture Committee forwarded a Theme Session, co-sponsored by Marine Genomics Europe, entitled “Integrating / implicating genetics into fisheries management”. This proposal was prepared by F. Volckaert (Belgium), endorsed by WGAGFM at their 2004 meeting, and put forward by E. Kenchington to the Mariculture Committee. This theme session was accepted by ConC. The programme is now full and no further theme sessions are available.

### **2006 ASC and supporting Resolutions**

This conference will take place in the Netherlands and submissions for theme sessions are needed by June 2005 for the ConC meeting. It was suggested that a session on carrying capacity might be suitable.

*Action Item: WG Chairs to submit theme session suggestions to Mariculture Committee Chair by April 2005.*

### **2007 ASC and supporting Resolutions**

The 2007 ASC will be held in Finland, but no other information is available at this time.

### **Symposia**

ICES is now over-booked with symposia and is looking at 2007–2008 for suggestions. The limiting factor for symposia is the ability of the ICES Secretariat to be involved in organizing and publishing the final documents.

Upcoming symposia relevant to Mariculture Committee WGs:

Symposium on Interactions of Wild and Cultured Atlantic Salmon, 16–18 October 2005. Bergen, Norway [Diadromous Fish Committee lead].

*Action Item: WG Chairs to submit symposia suggestions as well as opportunities to co-sponsor events with other mariculture organisations to Mariculture Committee Chair by September 2005.*

## **Action Plan progress and future Mariculture Committee topics**

The Mariculture Committee was asked to assess the performance of underlying WGs and Committees.

### **Strategic Plan and WG ToRs**

The Action Plan Audit 2004 will eventually become an integrated database. By making the Action Plan a living document the Mariculture Committee will be better able to assess performance and be more pro-active as opposed to simply accounting for the previous years' activities. For example the move by WGMAFC to deliver products relevant to fish welfare will result in the production of leading position documents similar to the ICES Introductions and Transfer Code, which is widely used. The form will likely have to be altered to include more information, but as this is only the second year of the process no changes have been made. Currently WG performance is evaluated by one of three categories. In theory, ICES Science Committees should be able to see at a glance which WGs are in line with the Strategic Plan and identify their performance. However, at present the evaluations are made based on reading the reports, and it was suggested that cumulative impact (advice over a number of years) is not captured. This would be needed to know when to retire ongoing ToRs.

It was decided that Mariculture Committee members would be called upon to assist in evaluating the performance of the Expert Groups as part of the annual review of the Expert Group Annual Reports. The members of each Mariculture Committee subgroup would be called upon to offer a subjective review of the annual performance of the assigned Expert Group, based on the information contained in the Annual Report which they had reviewed previously. Clarification of the exercise will be provided by the Chair.

### **Integrated ecosystem advice and deliverables**

A letter was sent by the Chair of the Consultative Committee (J. Rice) to WG chairs, asking what information they could or would like to contribute to ecosystem advice to ICES Science Committees. So far, no response has come back, but not all WG chairs present had received a copy of the letter. Generally, issues such as genetics, carrying capacity, disease, and introductions would seem relevant. The main opportunities / needs for input from Expert Groups reporting to Science Committees are found in the sections on effects of the environment on the fisheries, and effects of the fisheries on the ecosystems. WG Chairs should be informed that there is a need to make a reference to integrated advice and ecosystem approaches in WG ToRs. The WG can/should suggest ToRs for other expert groups (in relation to providing integrated advice), with ConC controlling the administration of workloads. Mariculture Committee members noted that the letter was very biased towards fisheries and may have alienated ACME WGs.

*Action Item: WG Chairs to identify to the Chair of Mariculture Committee any opportunities to provide integrated advice as part of their ongoing activities.*

There is also need for a mechanism to alert ICES to significant atypical ecosystem events that must be incorporated into the ecosystem approach of providing advice: suggestions are wanted. An example was given of the drastic decline of capelin off

Iceland which would have implications for predator species (birds, mammals, fish); notification of this event should be given to the appropriate groups. The Mariculture Committee suggested that the ICES newsletter might be a vehicle to relay such information. Concerns were voiced over the validation of an event before broadcasting information to others. It was mentioned that the new reporting format for ICES assessment WGs asks whether there has been an unusual event in the region. Once verified, these could easily be collated into a relational database and made available to ICES members on the web page. The updates could be sent out in an electronic newsletter to all WG Chairs with internet links to the reports. It was suggested that one of the OSPAR groups is charged with recognizing any unusual changes or effects that occur and that a member of ICES usually sits in on the OSPAR meetings. This information could be given directly (electronically) to ICES.

Day 1 of the meeting adjourned at 17:45 on 21 September 2004.

### **Review draft Resolutions and WG ToRs**

A discussion and review of the proposed ToRs for each WG was completed. The Mariculture Committee was particularly careful to review the ToRs for concrete deliverables and to highlight those changes or new ToR that we want brought to the attention of the Delegates and Bureau so that they fully understand the importance of ratifying the ToR. Venues and meeting dates were also verified where possible. Each ToR was also viewed for cross links or redundancy to other WG ToRs. It was noted that WG Chairs should be given a rationale for removing ToR, especially if they were not present at the meeting.

*Action Item: Mariculture Committee Chair to identify all changes to WG ToRs and corresponding rationale to appropriate Chairs at the conclusion of the ConC meeting.*

For WGAGFM it was noted that while many of the current ToR are fisheries-oriented, in the past some very good reports have been produced dealing with mariculture practices, specifically breeding programmes for fish and shellfish. The Chair of the Mariculture Committee asked that these reports be given to him, along with the WGAGFM private website link so that the Chairs of the other WGs could benefit from these. For WGPDMO the number of ToRs has increased again. In 2003 the WG was unable to complete their ToR due to the number. In 2004 these were reduced to 9 but in 2005 there are 11, some given to the WG.

### **Any other business**

Best management practice documents should be examined and prepared. Several are available from various countries, but these have not been reviewed. The EU is planning on developing these and it would be good to make sure that the expert groups review them before they are released. There was discussion about whether a single Best Practise document is appropriate for all ICES countries, but this is something that could be addressed through the review process.

The Chair advised that the Mariculture Committee meeting format could include presentations if desired.

### **Closure**

The meeting adjourned at 10:15 on 23 September 2004.



