

Report of the Diadromous Fish Committee (DFC)

Chair: Ted Potter (UK), Acting chair: Niall Ó Maoiléidigh (Ireland)

Rapporteur: Julian MacLean (UK)

The Committee met on 17 and 19 September 2007. Between 14 and 18 people attended, with seven of the 26 committee members present over the two days.

Opening

The agenda was adopted following the addition of items under AOB. The Committee appointed Julian MacLean (UK, Scotland) as Rapporteur.

Review of Expert Group reports and consideration of future work

Working Group on North Atlantic Salmon (WGNAS – Chair: T. Sheehan, USA)

The report was presented by the acting chair of DFC. The DFC noted the poor status of salmon stocks in general and the particular threats posed by mixed stock fisheries. The continued advice that there should be no harvest of salmon at Greenland or Faroes and further efforts to reduce exploitation in homewater countries were also considered. As part of the request to ICES from NASCO, the WGNAS considered a review of current applications of genetic stock identification techniques for salmon management, particularly in relation to mixed-stock fisheries. The Working Group on the Application of Genetics in Fisheries and Mariculture (WGAGFM) had prepared this review and supported the application of these techniques for salmon management, particularly in relation to mixed stock fisheries. The increased prevalence of the nematode parasite *Anisakis* in salmon returning to rivers in the UK, Ireland, and Iceland in recent years was discussed and measures taken by authorities in each of these countries to monitor the parasite were highlighted.

Baltic Salmon and Trout Working Group (WGBAST – Chair: A. Romakkaniemi, Finland)

The report was presented by the Chair of the WGBAST. The DFC noted that the stock assessment is now provided for six separate groups (categorized according to genetic, geographic, migration, fisheries exploitation, and fishery management criteria) of wild salmon. The main outcome of the assessment was that post survival has shown a decreasing trend, to extremely low values, over the last 20 years. Consequently, and despite reduced effort, projections of both PFA and smolt abundance do not show any rapid improvement. The ICES advice was that no TAC be set owing to uncertainties in the assessment but that reductions in catch and effort should occur in all fisheries. In relation to sea trout, the DFC notes that due to difficulties with lack of data or uncertain data, no advice was provided for sea trout stocks this year.

Joint EIFAC/ICES Working Group on Eel (WGEEL – Chair: R. Poole, Ireland)

The report was presented by the Chair of WGEEL. The long-term downward trend in recruitment was continued in 2006. In relation to stocking of eel, these practices had been shown to be affected by density-dependent factors and therefore stocking at high densities was not the best practice. The swimbladder parasite *Anguillicola* has now been found widely throughout the EU but whether this is a direct or significant cause of recent declines in eel recruitment is not certain. Restoration of eel populations is now required under a recent EU Eel Action Plan which will require strategies to overcome anthropogenic mortalities (poor water quality, impediments to fish passage, etc.). The target is to restore eel stocks to the point equivalent to the value of silver eel spawning escapement last observed in the 1970s. Forecast

simulations of eel population dynamics suggest that this will take a very long time. It was noted that with the reduction in fisheries the development of fishery-independent assessment methods was now required and eel was now covered specifically in the EU Data Collection Regulation. The possibility of DFC proposing a specific study group to review the methodologies used to analyse historical data to support the work of WGEEL was deferred until the meeting in 2008.

Study Group on Salmon Age Determination (SGSAD – Chair: J. Raitaniemi, Finland)

The item was introduced by the chair of the study group. This study group was held in late 2006 and successfully achieved the agreed ToRs. DFC noted that, at some future date, the work of this group should be expanded to include countries outside the Baltic area and even other fish species such as eel, where imaging techniques were also being developed.

Study Group on Establishing a Framework of Indicators of Salmon Stock Abundance (SGEFISSA – Chair: T. Sheehan, USA)

The report was presented by the acting chair of DFC. SGEFISSA developed a framework of indicators to provide multi-annual catch advice for each NASCO Commission Area. For the West Greenland fishery a framework was developed based on the contributing stocks for the specific management aims of this fishery. For the Faroese fishery it was not possible to develop a framework for a number of reasons, including the absence of explicit management objectives for this fishery and lack of informative indicators. Advice for the Greenland fishery will now be provided based on a full assessment leading to multi-annual catch options (Figure 1). A spreadsheet model and flow diagram outlining the framework process were prepared by WGNAS for NASCO and will be used to evaluate the multi-annual advice and the possible outcomes; this would lead to changes in catch advice provided previously over this cycle. NASCO indicated at the meeting that they were satisfied that this framework met the needs of the organization.

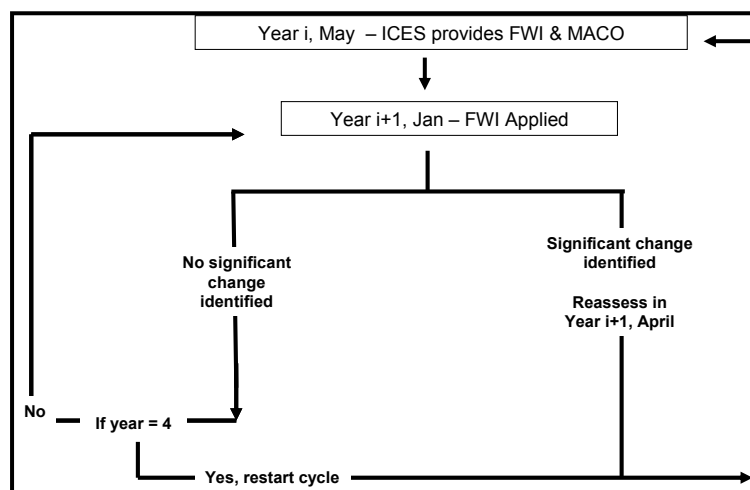


Figure 1. Catch advice – Timeline for multi-annual catch options (MACO) and framework of indicators (FWI).

Workshop on the Development and Use of Historical Salmon Tagging Information from Oceanic Areas (WKDUHSTI – Chair: Lars P. Hansen, Norway): Review of main issues and recommendations

The report was presented by the chair of the workshop. The aim of the Workshop was to begin the standardized collation of the significant amount of data on oceanic tag recoveries held by many North Atlantic countries and spanning several decades, to provide insights into the distribution of salmon at sea. The Workshop successfully developed a standardized

spreadsheet for the collation of tag recapture information and illustrated the power and advantages of using GIS techniques to handle and analyse the data.

Forthcoming symposia and theme session

Update on plans for a joint ICES/NASCO/NPAFC/PICES Symposium on “Factors Affecting Mortality of Salmon at Sea” and update from NASCO on marine research initiatives

The observer from NASCO provided an update on arrangements for a joint international symposium on the above topic. The symposium will provide a forum for presentation of the findings of the BASIS2 and SALSEA programmes. During the NPAFC meeting in October 2006, an initial meeting had been held to discuss arrangements for the symposium. Representatives of PICES, NASCO, and NPAFC attended and it was agreed to schedule the symposium for 2010 and that co-convening organizations should provide £60 000 (i.e. £15 000 each if PICES, ICES, NASCO, and NPAFC all co-convene) towards the cost. Efforts to obtain further sponsorship would also be made. NASCO agreed to make all local arrangements and it was agreed that the Steering Group would meet no later than October 2008. NASCO’s International Atlantic Salmon Research Board (IASRB) has allocated funds to the symposium. NPAFC has appointed five Steering Group members. ICES has indicated that they would be able to allocate €10 000 and could also offer to publish the proceedings in the *ICES Journal of Marine Science*. A representative of PICES indicated that salmon research was not one of PICES priority areas and that it was unlikely that his organization could be included as a convener or sponsor of the symposium. Further information was requested by the DFC as to the extent ICES could now contribute as a full convener.

Update on Theme Session (L) – Stock identification – applications for aquaculture and fishery management

The session consisted of 15 oral papers and 9 posters, most of them addressing applications for fishery management. The theme session attracted about 100 participants, and the numbers attending at the same time varied between 40 and 60. The theme session will further allow the potential for these applications to be reported and the implications for fishery management to be discussed with the scientific community, stakeholders, and resource managers.

Coordination of research programmes

Update on SALSEA research programme

A brief presentation from the NASCO observer on the SALSEA marine survey highlighted the components of the programme that would probably be funded by home countries (e.g. nearshore tracking and tagging). In addition the NASCO International Atlantic Salmon Research Board has applied to the TOTAL Foundation (France) and the Ocean Foundation (USA) for funding to support this project. This has provided funding for a major genetic meeting in 2008. There have also been commitments secured for research vessel time over the period 2007 to 2009.

A major component of the SALSEA programme has been submitted for funding under the EU FP7 funding call. The SALSEA–Merge sub-component of the research programme, aimed at investigating the migration and distribution of salmon in the ocean in relation to oceanographic features, genetic structure, and marine mortality has submitted an application for EU funding under FP7. The proposal scored highly in terms of its scientific merit, but the final outcome of the bid is still awaited. However, it was reported that even if the SALSEA–Merge is not funded or fully funded under the FP7 call for 2008 and 2009 there should still be enough progress on research on salmon at sea to present a full programme at the joint symposium on Factors Affecting Mortality of Salmon at Sea in 2010.

EELIAD

The EELIAD project aims to map silver eels as they migrate to their spawning grounds, to identify the biological and ecological characteristics that contribute to migration success and reproduction, to clarify the role of ocean systems in relation to eel migration, to identify natural and anthropogenic factors affecting recruitment, to assess recruitment nationally and internationally, and to evaluate the effect of stocking. A proposal has been submitted for EU funding under FP7. In common with the SALSEA–Merge application, this proposal received a favourable review but a final decision on funding is still awaited.

Draft resolutions for Expert Groups and Theme Sessions

Workshop on Salmon Historical Information – New investigations from old tagging data (WKSHINI – Chair L. P. Hansen, Norway) 2008

This will be a continuation of work to collate, examine, and analyse historical tagging data to support ICES advice to NASCO and the SALSEA marine research programme. The DFC proposed that this workshop be held in 2008. NASCO, who funded an oceanographer for the initial workshop, kindly agreed to fund the participation of a GIS expert for the 2008 meeting. Draft ToRs were discussed and agreed.

Study Group on Salmon Age Determination (SGSAD – Chair J. Raitaniemi, Finland)

DFC resolved to proceed with this study group and draft ToRs were discussed and agreed. The study group will meet in late autumn 2008 in Moscow or St Petersburg.

Study Group on Data Requirements and Assessment Needs for Baltic Sea Trout (SGBALANST – Chair: Stig Pedersen, Denmark)

It was proposed that this SG meet by correspondence between November 2007 and February 2008. It was further decided that the group would benefit from some interaction with workers in the North Atlantic also.

Study Group on Modelling to Support Salmon Management Advice: Possible group to meet by correspondence to facilitate communication between research groups developing salmon assessment models in the Baltic and North Atlantic

This was a request from the WGNAS in 2007. The scope of the study group was discussed and it was noted that a workshop to progress forecast methods for pre-fishery abundance is going ahead in DFO, Moncton in November 2007, which overlaps on this request. It was decided to allow this group to meet before developing a specific resolution covering North Atlantic and Baltic assessment methodologies.

Theme Session on Problems and solutions for the assessment, conservation, and restoration of rare, threatened, and endangered fish species: (based on a proposal held over from 2006)

A theme session entitled Strategies for Monitoring Conservation and Restoration of Rare Threatened and Endangered Species was proposed by the DFC in 2006 for inclusion in the 2008 ICES ASC programme. This has been re-titled (above) to allow more scope for authors to contribute.

Matters arising from Consultative Committee and Advisory Committees

Proposals for new Advisory process

There was a concern that objectivity may be compromised if, as under the new proposals, stakeholders would be allowed on review groups. NASCO have already raised this issue with ICES. Under the new proposals advice would in the future be delivered by the advisory committee rather than the expert group chair. NASCO was of the opinion that the expert group

chair was in an ideal position, having been directly involved in formulating the advice, for this role and did not see any advantage in changing this procedure.

Proposals for a new Science Structure, and the roles of the Consultative and Science Committees

Modification of the current science committees was noted. The possible merging of DFC with RMC, LRC, and MCC to form a new Resource Biology committee was discussed. DFC members felt that the best way to deal with diadromous species was through the current committee and wished to report this to the Consultative Committee. The DFC is currently the only committee whose remit also deals specifically with inland fisheries and fresh-water habitats encompassed within the life cycles of diadromous fish, and it is difficult to envisage how this role would merge easily with the proposed Resource Biology committee.

DFC also discussed the proposal for science committees to meet twice a year and queried whether this meant that ICES would be increasing the responsibilities or workload of the science committees.

Any other business

Galathea 3 programme

The aims were to investigate the spawning biology and genetic structuring of European and American eels. Trawls conducted across three transects over the potential spawning area were conducted to map the larval distribution. In addition biotic and oceanographic data were recorded in conjunction with these trawls to provide a description of the environmental conditions experienced by the early larval stages. Approximately 300 eel larvae were caught and these have been preserved for future genetic analyses, which will allow European and American eels to be distinguished and may allow investigation into sub-structuring within each species. Further, analysis of trace element distribution isotope ratio work from otoliths will be used to reconstruct temperature preferences of the larvae. No adult eels were caught but further deployment of pop-up tags, as trialled on emigrating silver eels from Ireland in 2006, was seen as a way forward in locating the precise spawning areas of the European eel.

International Sturgeon Action Plan

Sturgeon was once a widespread species, but its current status is critical. Two points of note were discussed. First, the International Sturgeon Action Plan drawn up by WWF and IUCN is to be approved by the Berne Convention later this year. Second, the captive breeding programme has been successful, for the first time, in producing 7000 juveniles. It is hoped that this success can be repeated on an annual basis. However, there were concerns that should these fish reach maturity no suitable habitat may be available for spawning adults. Indeed, no natural spawning has been recorded in the past 10 years.

Arrangements for meeting

DFC wished to thank ICES for providing a suitable room for the meeting, but wished to point out that the simultaneous timetabling of all science committees proved problematic for those participants who were members of more than one committee.

Closing

The acting Chair, Niall Ó Maoiléidigh, thanked committee members, and other participants, for their support and feedback and gave a commitment to pass on this committee's best wishes for a speedy recovery to the Chair of DFC Ted Potter.