

Diadromous Fish Committee (I)

Chair: Niall Ó Maoiléidigh (Ireland)

Rapporteur: Malcolm Beveridge (UK)

The Diadromous Fish Committee met on Thursday, 22 September from 13.30 to 18.00 and on Friday, 23 September from 13.30 to 18.00. Between 15 and 18 participants attended.

Opening

The Chair welcomed the participants, and as it was the third year since the Committee first met and his last year as Chair, he took the opportunity to remind participants of the aims and responsibilities of the DFC that had been applied by ICES and what had been achieved since September 2003. This is attached as Annex 1 to this report.

Appointment of a Rapporteur

Malcolm Beveridge (UK) was appointed Rapporteur.

Adoption of agenda

The Agenda was adopted.

Committee business

Reports of Expert Groups

Study Group on the Status of Diadromous Fish Species [SGSDFS]

The DFC Chair presented a summary of the report, drawing attention both to the information that had been compiled to date and to the deficiencies. The attention of the Committee was drawn to the lack of information provided for a number of sections, most importantly national legislation and summary of current status by species and by country, which had only partial coverage of 12 species and no information on a further 13 North American species. The Chair reiterated that the report was to be submitted to ICES, whether complete or not, by the end of 2005.

ICES/EIFAC Working Group on Eels [WGEEL] – and other eel issues

Presentations were made by Håkan Wickström (Sweden) on behalf of WGEEL. The report contained a summary of WGEEL and summarised the outcome of the various meetings that had been held since the last DFC meeting in Vigo in September 2004. The report also considered the implications of the EC's decision to include the European eel as a mandatory species under the Data Collection Regulations (DCR).

WGEEL met in Galway in November 2004. Meetings were also held in Brussels in March 2005 and at ACFM in Copenhagen in May 2005. A meeting to consider eel data collection issues had also been held in Sweden in early September 2005 at the request of the Commission. A number of important eel publications appeared in 2005; several eel papers were also presented at the DIADFISH symposium in France in March 2005. An EC FP6 Project (Study for Informed Management of EEL – SLIME) had also been successfully submitted. SLIME, which involves partners from five member states, aims to develop biological reference points and model the effects of legal and technical measures, using real historical data.

WGEEL recommended, as it has done every year since 1999, the urgent need for a recovery plan and for minimising anthropogenic impacts. In addition, it recommended the development of new models for establishing stock status, conservation and management targets, compliance, etc., which later became the focus of the SLIME proposal. WGEEL also felt that the Water Framework Directive could be used to specifically consider eels as an ecological indicator. It recommended that restocking be accorded a priority, given the current extremely low recruitment of glass eels over much of the species' range. ACFM advice is that given that recruitment has been extremely low since 1980 and that the spawning stock is also very low, the species is almost certainly below what is considered safe biological limits.

The Commission has asked ICES whether there are sufficient glass eels for restocking to allow 40% escapement in all rivers, the 40% figure referring to escapement in the absence of pollution, fishing, and anthropogenic river obstructions. The ACFM response was that given glass eel recruitment has been reduced from several thousand tonnes to 100 tonnes per annum over the past 25 years, it is highly unlikely that such a target could be met within a period of one generation (15 years).

While no report was available, the Committee were given a verbal account of a so-called 'front-loading' meeting that was held in Brussels in March 2005 involving a discussion between DG Fish and member states. Structural Funds are already available to be used for restocking pilot projects. The Commission announced that it would require management plans from member states by 2006 at the latest. The long-term target that member states are expected to aim for is a 40% escapement, with individual member states to decide how to meet this objective. The Committee noted that Emergency Regulations, which could involve closure of fisheries for the first half of each month, with the exception of glass eel fisheries for restocking, may be imposed.

The meeting held in Sweden in early September at the behest of the EC was to consider the implications of the European eel now being covered by the DCR. The group met to decide what data should be collected, where, when, etc. Although few details are yet available, it has been decided that freshwater population data, and not just fishery data, will be required.

Among the important eel research papers published in 2005 was a paper by Dannewitz *et al.* that appeared in the Proceedings of the Royal Society (Series B; Vol. 272, pp. 1129–1137), confirming the lack of genetic structure among European eel populations. The DFC discussed whether stocking was now considered appropriate, and voiced concerns that glass eel transfers did not affect the populations from which they were removed and that the animals stood a good chance of survival in the areas to which they were being transferred. There was a discussion about the importance of the *Anguillicola* parasite that now infested more than 80% of the European eels, and the role of pesticides in egg hatching success. There was a general agreement that everything possible should be done to halt the decline of the European eel, although it was accepted that the problems were enormous and the time frame likely to be very long.

Study Group on the Bycatch of Salmon in Pelagic Fisheries [SGBYSAL]

The report, recommendations, and plans for future work were presented by the DFC Chair. Estimates of post-smolt and adult salmon bycatch, although based on an increasingly sound sampling methodology, nevertheless still varied enormously, depending on whether they were based on direct observations or on samples from trawls. They also omitted bycatches associated with other important pelagic fisheries (e.g., blue whiting). The figures therefore have not been incorporated into assessments or catch advice for the North East Atlantic Commission Area as requested by NASCO.

Given the large range in estimates of salmon bycatch which, if variance associated with the estimates is considered may indeed be larger than the reported figures indicate, it was felt that the numbers could be a significant source of mortality. One important source of uncertainty

raised was the differences in mesh sizes of the codends of various Russian trawls which had been sampled, and potential damage inflicted by gear on salmon post-smolts that passed through the codend meshes. It was also agreed that it was important to pursue the issue of salmon bycatch in other fisheries. Further studies on the behaviour of salmon post-smolts and adults in relation to trawl gear were needed.

It was noted that the work of the SGBYSAL now came under the ACFM. It was felt that although the DFC was not consulted on the matter, it agreed that this was appropriate, as the information was made available to the WGNAS for analysis and is also under ACFM control. It was nevertheless recommended that the ToR from ACFM to SGBYSAL be scrutinised by the DFC.

Overview of WGNAS and WGBAST

The DFC Chair summarised the findings of the Working Group on the status of North Atlantic Salmon, noting data deficiencies and needs. The current poor marine survival, low returns, and increased efforts to reduce exploitation to bring stocks within safe precautionary limits were noted. It was felt that the gravity of the situation was not generally understood and therefore it was suggested that a less technical summary could be posted on the ICES website or possibly linked to such a summary on the NASCO website (a recommendation that also found support during the Next Steps for the NASCO process that has just recently finished).

A report was presented by Lars Petter Hansen (Norway) summarising the findings of an inter-Nordic countries tagging study of pre-adult Atlantic salmon at sea, begun in 2002. The study, which had to date tagged some 406 salmon with data storage tags (DSTs), had many objectives, including the determination of winter habitat preferences. Data from DSTs recovered from 4 tagged fish were presented. All four fish had been tagged in the Vøring Plateau region of the Norwegian Sea and the tags were recovered in Norway and southern Sweden. The longest distance travelled was 1400 km in 128 days, by a fish recovered from the Atran River in southern Sweden. The data showed extensive diving activity by the fish, sometimes below 150 m though normally restricted to depths of 70–80 m. There was no diurnal pattern associated with the diving behaviour. As the fish neared the coast, the temperature rose and diving activity ceased. Further funds were being sought to carry out a detailed analysis of the enormous amounts of data that had been generated. The importance of such innovative studies was noted by the Committee.

The Committee was asked to consider a summary account of the WGBAST given by Aatto Romakkaniemi, Chair designate of WGBAST, which provided information on the status of stocks and recommendations. Among the more important ToRs of the WGBAST, were the requirements to not only assess the status of wild and reared stocks of Baltic salmon, but also to try to promote the rebuilding of stocks of wild fish to 50% of the natural production by 2010, while at the same time maintaining the Baltic salmon fishery as high as possible. Production has fallen from 5500 t in 1990 to 25 000 t in 2004. Six million hatchery-reared smolts are released compared to an estimated natural production of 1.5 million wild smolts. Genetic sampling of fisheries shows that wild origin salmon make up a disproportionate amount of the catches. Exploitation is decreasing everywhere in the Baltic, in part because post-smolt mortality of hatchery-reared fish has increased from an estimated 75% to 90% in recent years. Modelled trends of wild stocks over time show that northern Baltic rivers are recovering and might achieve IBSFC criteria by 2010; by contrast, the situation in the south is more pessimistic. Here the natural smolt production is declining.

Concern was expressed that the ACFM advice, which set no TAC but which recommended fishing at the same level as in previous years, was more of a summary of the situation than specific catch advice to managers and that it did not reflect the worsening situation in the southern Baltic. This may have been because of a reluctance to set a TAC as model outputs

were judged insufficiently robust, that there were many unknown parameters, such as the effect of M74, and that dioxin levels were such in some areas of the southern Baltic that salmon landings had already been prohibited. Nevertheless, the DFC recommended that a TAC should be reintroduced.

Consultative Committee and Diadromous Fish Committee business

Links with other committees and overlap; review of Expert Groups and Committee structure

A considerable amount of the Committee's time was spent in responding to the Consultative Committee's request for Committee feedback on the discussion document prepared by ICES "Reviewing the ICES Expert Group Structure" (Conc0509-17(1)), prepared jointly by the Chair and Vice-Chair of the Consultative Committee, ICES Head of Advisory Programme, and ICES Head of Science Programme. The response to this will be presented to the Consultative Committee separately.

Any other specific requirements to help DFC in its work?

There was considerable debate about shortening the two half-day sessions, if at all possible, by circulating as many reports as possible prior to the annual meeting and by trying to get more of the committee business done during the year. This would allow greater opportunities to attend Theme Sessions. Time should be focused on scientific debate. The importance of having the two half-day sessions closer together was stressed.

There was a proposal to hold an annual DFC dinner where matters could be discussed more informally and where newer and older committee members could meet.

There was a proposal to have a short, public-friendly summary of each WG and SC on ICES website.

Nominee for ASC Award Selection Committee

A Committee member, Ralph Thiel (Germany), agreed to represent the DFC.

Adequacy of the arrangements for the meeting

Facilities were considered excellent; the only comment raised was that perhaps a round table format might be preferable.

Election of new Chair

Committee members or Delegates from 10 countries were present. Two nominations were received and Malcolm Beveridge (UK) was elected as the Chair on a majority vote.

Forthcoming symposia and theme session topics

Theme Session in 2005 on Rebuilding Diadromous Fish Stocks – update

A brief overview was presented by Ted Potter (UK), Co-Convener of the Theme Session. It attracted an audience of between 60 and 150 people, compared with theme sessions in the two previous years, which had attracted audiences of around 20–30. Fifteen papers were submitted (one withdrawal; one no-show) and covered a good range of species, both diadromous and marine, and topics, including socioeconomics. Notable omissions included eels.

Theme sessions on narrower topics, such as Baltic fisheries or Atlantic salmon might be less successful. It was felt that a strategy for theme sessions should be developed. i.e., narrow (e.g., single species) and broad theme sessions in alternate years. An alternative model, to discuss

issues of narrower interest at the DFC instead of at theme sessions, was also discussed. In general, however, it was felt that broader, cross-disciplinary and cross-species sessions were likely to be more successful. It was also felt that greater efforts must be made by the Committee to raise the profile of ICES among scientists.

'Interactions between Cultivated and Wild Diadromous Fish Species' full Symposium in 2005 between ICES and NASCO – update

An update was given by one of the Theme Session Co-Conveners, Lars Petter Hansen (Norway) which is also available from the NASCO and ICES websites. The Symposium will take place in Bergen in October 2005. More than 100 participants have registered, sponsorship has been received from 19 institutions and companies and the meeting is on a sound economic footing. Despite the inclusion of "other diadromous fish" in the title, only two oral papers on species other than Atlantic salmon have been submitted. A special edition of the *ICES Journal*, to be edited by Peter Hutchinson, NASCO, has been made available for oral and poster papers and a management report.

Joint PICES/ICES/NASCO Symposium on 'Factors Affecting Mortality of Salmon at Sea' – update from NASCO on marine research initiatives

An update was presented by Peter Hutchinson, NASCO, on the inventory of research currently being carried out on salmon at sea and the SALSEA Programme. In summary, there are 52 ongoing and 12 recently completed projects. Thirteen of the projects have appeared on the inventory in the past year and four projects were completed during 2004–2005. Annual expenditure, excluding four un-costed projects, is £5.9 million. Information is being included and updated annually.

The inventory formed the basis for establishing and scoping potential SALSEA work packages and tasks. The inventory also showed that some aspects are already being carried out: e.g., the EC ARC Project, the development and testing of new fishing gear, the influence of contaminants on survival. However, little work was being conducted on salmon abundance and movements at sea. The total cost of investigating Atlantic salmon in the open sea is estimated at £7.5 – 10 million, depending upon the number of voyages that are conducted.

A fundraising agency was commissioned to produce a report on the likelihood of raising the funds required for the research. While it was recognised that there was strong public support for the work, the funds required were too high to be raised from the private sector alone; contracting parties should raise £4 million and the balance would come from the private sector, although this too would incur additional costs, estimated to be in the region of £350 000. Requests to raise funds were currently with contracting parties.

The SALSEA proposal was also currently out to peer review with two senior scientists from the BASIS (Bering-Aleutian salmon International Survey) project and had been sent to ICES for comment. It is proposed that funds currently with NASCO for SALSEA be expended on project-related workshops.

The symposium is currently being proposed for 2008 or 2009; this was appropriate as the BASIS programme finishes in 2006, and although SALSEA will not have finished by then there will undoubtedly be enough data and findings to discuss. The proposed symposium will be debated at the NPAFC meeting in Korea in October, where it will be raised by Malcolm Windsor, NASCO.

Review of proposed theme sessions for 2006

In view of the proposed new strategy of alternating between broad and narrow theme sessions it was felt that there might be an opportunity to propose a theme session for 2006 entitled:

“Is there more to eels than SLIME”. Conveners: Andrew Pawsen (UK), Håkan Wickström (Sweden), and Erwin Winter (The Netherlands).

2007 ASC and suggestions for open session speakers

A theme session on “Application of Genetic Identification to Management of Salmon Stocks” in 2007 has been proposed by DFC. It was proposed that consideration be given to broaden this with more emphasis on applications of genetic stock identification to aquaculture and fisheries management. A tentative title – ‘Stock identification – applications for aquaculture and fisheries management?’ – was put forward. Terje Svaasand (Norway) agreed to be one of the Co-Conveners, and a second convener will be sought from the Mariculture Committee as there is a broad overlap on this topic.

Proposals for 2008

A theme session on “Strategies for Monitoring and Assessing Diadromous Fish” proposed for 2006 has been held over and may be considered for 2008. As there was great concern internationally at the status of many diadromous fish species which were considered threatened or endangered, greater effort should be made to attract the interest of IUCN, WWF, and other groups who often have specific interests/responsibilities for endangered diadromous species such as eels, lampreys, and shad and to involve these concerned groups in joint symposia in the future.

Action plan and future DFC topics

Action Plan progress and audit

There was little to report since last year, other than the move from a spreadsheet-based to a programme-based system, since funds had only recently been made available to progress this.

Possible interactions with DIADFISH

Feedback was requested on the DIADFISH meeting that had been held in March in France. While it had been lively and well attended, there had been no publications so far and as far as the Committee knew there was no follow-up meeting organised as yet. However, DIADFISH has an informative website which should be visited regularly for updates. Nevertheless, there was a request to invite Eric Rochard, DIADFISH, to make a presentation to next year’s DFC meeting.

Draft Resolutions

Resolutions for Working Groups/Study Groups and review of ToRs

No new Working Groups or Study Groups were proposed. The Terms of Reference for the Study Group on the Bycatch of Salmon in Pelagic Trawl Fisheries (SGBYSAL) and the Baltic Salmon and Trout Working Group (WGBAST) were noted. The draft Terms of Reference for ICES/EIFAC Working Group on Eels (WGEEL) for 2006 was noted. It was noted that ToR (f) had been included because of the increasing understanding of the role of pollution and parasitism in determining spawning numbers and egg hatching success.

The ToR for the Study Group on Salmon Scale Readings (SGSSR), operated via the Baltic Salmon and Trout Working Group, was approved. It was also agreed to consider whether to broaden its remit to include all Atlantic salmon in 2006.

The Terms of Reference for the Working Group on North Atlantic Salmon (WGNAS) were noted. It was recommended that ToR 5, to assess the genetic effects of introgression of farmed salmon on wild salmon, be given to the Working Group on the Application of Genetics in

Fisheries and Mariculture. It was also noted for clarification that ToR 6 had been introduced in anticipation of a request for multi-annual advice.

Any other business

An additional item, to seek the views of the DFC on a proposed ICES/German Government evaluation of the impact of the establishment of 10 Marine Protected Areas (MPAs) within the German EEZ, was presented by Adi Kellermann, Head of Science Programme at ICES. He summarised the purpose of establishing the MPAs, including the additional possible benefits for fisheries and focused on the consideration of the impacts of fishing activities in the MPAs – to what extent did they impact on the areas, did they need regulating, and how to balance regulations affording environmental protection with the rights of fishers? €300,000 had been made available by the German Government to fund ICES to establish a Study Group and support a series of workshops over the next three years to consider these issues. Although it was recognised that this was not a typical ICES venture, it was recognised as being of wide interest and there were no objections to ICES involvement. Concern was expressed that although funding would cover travel and stay for workshop participants, it did not cover staff costs.

There was a request to circulate all presentation from the 2005 DFC meeting to members. The Chair agreed to do this.

Close

A vote of thanks for the outgoing Chair, Niall Ó Maoiléidigh (Ireland), was proposed.

Annex 1: Report of the Chair of the Diadromous Fish Committee 2005

DFC after 3 years – A short review

The Chair took the opportunity to remind Committee members of the aims and responsibilities of the DFC that had been imposed by ICES and to recount what had been achieved since September 2003. Among its activities the DFC has:

- stimulated scientific debate and cooperation and recommended the establishment of various expert groups;
- proposed and/or jointly organised a theme session in each of the past three years that have been directly relevant to the remit of the DFC;
- established study groups (SGBYSAL, SGSDf) and assumed responsibility for SGSSR (previously run by the Baltic Committee);
- reviewed the progress of working/study groups (SGSDf, SGSSR, SGBYSAL) and scrutinised reports by WGNAS, WGEEL, WGBAST and taken forward recommendations;
- proposed two symposia, the ICES/NASCO Symposium on farmed/wild salmon and other diadromous fish interactions (Bergen, October 2005) and a symposium on factors affecting the mortality of salmon at sea in 2008/2009;
- recommended ToRs for the WGNAS to review the appropriateness and possible development of an experimental tagging programme for investigating the behaviour of escaped farmed salmon.

The DFC has also:

- reviewed the status of diadromous fish stocks;
- evaluated and improved analytical tools for quantifying consequences of habitat alterations;
- evaluated and increased the knowledge base of the effects of human activities on diadromous fish stocks;
- reviewed issues associated with habitat protection and enhancement in freshwater, estuarine and coastal habitats;
- developed and implemented a programme for gaining a fuller understanding of the factors that contribute, and;
- by the end of 2005 it will have produced a baseline status report on diadromous fish.

The DFC has participated in the work of ICES. It has participated in the Consultative Committee, specifically commenting on the Action Plan audit, the proposed restructuring of ICES, and reviews of ICES. The DFC has provided reviewers for ACFM and WGNAS and made available the report of the DFC for scrutiny by the ASC. The DFC has provided volunteers for ICES Award Committees and feedback on keynote speakers.

Delegates believed it most important that the diadromous fish interests has a voice at ICES. It was noted that the DFC was still on trial and that it was important to demonstrate that the DFC was doing useful things. The numbers of participants attending the DFC, typically 15–20, were believed to be similar to those attending other committees. Considering the fact that DFC business is largely concerned with coastal and inland environments, it was pointed out that two of the five ToRs for the DFC specifically mentioned freshwater and that this was a special area of expertise not normally covered by ICES, but which would become increasingly important as scientific advice was being sought more and more on diadromous fish species in the context of the ecosystem approach.

Similarly, as there was great concern internationally at the status of many diadromous fish species which were considered threatened or endangered, greater effort should be made to attract the interest of IUCN, WWF, and other groups who often have specific interests/responsibilities for endangered diadromous species such as eels, lampreys, and shad, and these concerned groups should be involved in joint symposia.