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Продовольственная и
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Organización
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para la
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y la
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EUROPEAN INLAND FISHERIES ADVISORY COMMISSION

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Joint EIFAC/ICES Working Group on Eel

Comprehensive Working Report for the period
March 2009 – February 2010

Convener: Russell Poole, Ireland**Introduction**

The EIFAC Working Group on Eel (WGEEL) has been active since the 1970's and acted as a major focus for collation of eel data and biology through its symposia in the 1980s and 1990s. A widespread severe decline in recruitment was observed between 1983 and 1985. By 1993, this decline in recruitment, along with a stock-wide reduction in landings, was leading to serious concern and since 1998, the EIFAC Working Group has operated on a joint basis with ICES, providing scientific advice on stock data and eel management, particularly in relation to the EU Action Plan for the Recovery of Eel (EU 2007: COM(2005) 472). Russell Poole (Ireland) is the current convener.

Fast-track Advice

No fast track advice was requested during this period. Individual members of the Working Group, including the Chair, provided ad hoc advice to ICES on the evaluation of Eel Management Plans.

Year 2009

In 2009, the WGEEL met in Gothenburg, Sweden, between the 7 and 12 September 2009 and the meeting was hosted by the Swedish Board of Fisheries. Thirty four people attended the meeting, from fifteen countries. The 2009 Terms of Reference (Annex 1) and Report constituted a further step in an ongoing process of documenting the status of the European eel stock and fisheries and compiling management advice. As such, the 2009 Report does not present a comprehensive overview, but should be read in conjunction with previous reports of the WGEEL. In addition to documenting the status of the stock and fisheries and compiling management advice, the WGEEL also provided scientific advice in support of the EU recovery plan for the stock of European Eel, setting up an international assessment of the eel stock, advances in stocking, quality of eels and potential spawners and advances in eel science. The abstract for the 2009 WGEEL report is included as an annex to this report (Annex 3) and the following were the main recommendations:

- Since overall recruitment remains at an all time low since records began, the stock continues to decline and stock recovery will be a long-term process for biological reasons, all negative anthropogenic factors impacting on the stock and affecting the production/escapement of silver eels should be reduced to as low as possible, until long-term stock recovery is achieved.
- The 2001 meeting of WGEEL (ICES 2002) recommended the formation of an International Commission for the Management of the European Eel Stock. Such a body could organize the monitoring and research on eel stocks and fisheries, serve as a clearing house for regular exchange of information regarding the resource status and facilitate/orchestrate management and research.

Noting the urgent need to plan and coordinate the data collection and tool development for the 2012 post-evaluation, this recommendation is re-iterated. Such an internationally coordinating and planning group could either parallel the North Atlantic Salmon Conservation Organization (NASCO), or fit into the scheme of

Regional Advisory Committees (RACs) in the European Union, albeit focused on a single most wide-spread stock (instead of a single region with many species) – an Eel Advisory Committee.

Year 2010

In 2010, the joint EIFAC/ICES Working Group on Eel will meet in Hamburg, Germany, between the 9 and 14 September 2010. The Term of Reference from ICES is in Annex 2.

Annex 1**Terms of Reference for 2009**

2008/2/ACOM15

The Joint EIFAC/ICES Working Group on Eels (WGEEL), (Convener: Russell Poole, Ireland), will meet in Gothenburg, Sweden, 7–12 September 2009, to:

- a) assess the trends in recruitment and stock, for international stock assessment, in light of the implementation of the Eel Management Plans;
- b) evaluate the European Union Eel Management Plan;
- c) develop methods to post-evaluate effects of management plans at the stock-wide level;
- d) develop methods for the assessment of the status of local eel populations, the impact of fisheries and other anthropogenic impacts, and of implemented management measures;
- e) establish international databases on eel stock, fisheries and other anthropogenic impacts, as well as habitat and eel quality related data, and the review and development of recommendations on inclusion of data quality issues, including the impact of the implementation of the eel recovery plan on time-series data, on stock assessment methods;
- f) review and develop approaches to quantifying the effects of eel quality on stock dynamics and integrating these in stock assessment methods;
- g) respond to specific requests in support of the eel stock recovery Regulation, as necessary; and
- h) report on improvements to the scientific basis for advice on the management of European and American eel

WGEEL will report by 22 September 2009 for the attention of ACOM and DFC.

Annex 2**Terms of Reference for 2010**

2009/2/ACOM18

The Joint EIFAC/ICES Working Group on Eels (WGEEL) (Convener: Russell Poole, Irealnd), will meet in Hamburg, Germany, 9–14 September 2010, to:

- a) assess the trends in recruitment and stock, for international stock assessment, in light of the implementation of the Eel Management Plans;
- b) develop methods to post-evaluate effects of management actions at the stock-wide level (in conjunction with SGIPEE);
- c) develop methods for the assessment of the status of local eel populations, the impact of fisheries and other anthropogenic impacts, and of implemented management measures (in conjunction with SGAESAW 2);
- d) provide practical advice on the establishment of international databases on eel stock, fisheries and other anthropogenic impacts, as well as habitat and eel quality related data, and the review and development of recommendations on inclusion of data quality issues, including the impact of the implementation of the eel recovery plan on time-series data, on stock assessment methods;
- e) review and develop approaches to quantifying the effects of eel quality on stock dynamics and integrating these into stock assessments;
- f) respond to specific requests in support of the eel stock recovery Regulation, as necessary; and
- g) report on improvements to the scientific basis for advice on the management of European and American eel.

Annex 3**Abstract for the 2009 WGEEL**

From the information available indications are that the stock is at an historical minimum, continues to decline and is outside safe biological limits. Anthropogenic mortality is thought to be high on both juvenile (glass eel) and older eel (yellow and silver eel). Recruitment to the stock is at an historically low level and continues to decline with no obvious sign of recovery. Current levels of anthropogenic mortality are not sustainable and there is an urgent need that these should be reduced to as close to zero as possible until a recovery of the stock is achieved.

All glass eel recruitment series demonstrate a clear decline since the early 1980s. Between 2008 and 2009 (2009 data still incomplete) the decrease has been sharp: an in-year drop of around 50–60% for glass eel landings. For the different areas (Baltic, continental North Sea, continental Atlantic, British Isles, and Mediterranean), levels have dropped to between 1 and 9% of the 1970s levels. The continental North Sea yellow eel recruitment series have been declining continuously since the 1950s. The Baltic series have dropped to less than 10% of their initial values between the 1950s and 1970s and remain at a low level.

For the last 4 years, the series based on glass eel average between 4% (continental North Sea) and 12% (continental Atlantic) of their mean 1979–1994 value and <1% to 9% of pre 1979 levels respectively. A similar 4 year average calculated for scientific series and series based on trap for glass eels have dropped to 4–5% of their mean 1979–1994 value whereas on the other hand series based on total catch and cpue remain at a higher level (11 and 15% respectively). The series for yellow eel are currently at 17% (North Sea) to 91% (Baltic) of their mean 1979–1994 value and 5% to 7% of the pre 1960s levels respectively.

Total landings data have been found to be unreliable and it is hoped that the implementation of the European Union (EU) DCR might improve this situation. There was a great heterogeneity among the landings data with incomplete and inconsistent reporting by countries. It was, therefore, considered inappropriate to analyse trends. Changes in management practices were found to have also changed the reporting of non-commercial and recreational fisheries.

New data on habitat and historical and current silver eel production and escapement data should become available through the Eel Management Plan process. It is essential that collection of these data are coordinated and of good quality as they will likely form the basis for international stock assessment and post-evaluation of the implementation of the Regulation. The formation of an international database for recruitment and landings time-series was discussed and tested by the WG. It is hoped to further develop this to include the new data required for stock assessment. Management of such a database is an important issue.

ICES have tasked WGs to make an evaluation of the issues relating to the quality of assessment data, and to this end the WG reviewed a subset of Country Reports according to evaluation criteria. Basic data of Catch (C) and effort (f) and the main fishery indicators: C total (landings/ fishing mortality), f total, and abundance index (generally cpue) for eel are very often poorly evaluated, if not missing. Moreover, they are not clearly reported by biological stages (glass eel, yellow, silver), by fishing categories or by appropriate management unit. The indicators from recreational fishermen are generally missing and no estimation is made in the absence of data. Nothing is reported about illegal fishing. The fishery indicators for eel are not associated with a “quality value” and their representative value and accuracy is globally unknown.

The EU Regulation requires Member States to report every third year commencing in 2012 on the effectiveness and outcome of management measures implemented. It is likely that these plans will lead to an improvement in survival and silver eel escapement. These improvements, however, are not likely to lead to a substantial change in the status of the stock by 2012, because of the short time interval, the delayed effects of protection of the younger stages and indirect effects cascading through slowly. Noting the many uncertainties concerned and the low precision in existing monitoring programmes, effects of protection will be difficult to detect in 2012.

A framework for post-evaluation of management measures, both at the scale of individual Eel Management Units, and on the international scale, has been worked out in this report, but little practical experience is currently available, and the development of the tools required is not planned. It is of utmost importance that these developments are planned and initiated in time to be available for the 2012 post-evaluation. Additionally, the collection of data (under the DCR and in relation to national EMPs) should be tuned to their usage in post-evaluations. This planning process requires the involvement and commitment from relevant national and international agencies (governments and research agencies). The research required (e.g. development of generic tools for local and international post-evaluation) goes beyond the capacity of WGEEL and will require a dedicated research project. Noting the urgent need to plan and coordinate the data collection and tool development for the 2012 post-evaluation, it is recommended that international coordination and planning be established immediately for the organization and facilitation of eel management, for the development of assessment tools, for the collection of data, and for the coordination and standardization of the post-evaluations in 2012.

Stocking eel is listed as one management option in the Regulation, and a measure in most of the Eel Management Plans (EMPs) drawn up to meet the regulation, with a view to using stocking to supplement weakened stocks, or even replace lost ones, and as an aid to meeting the long-term silver eel escapement targets. Comparative experiments reviewed indicate that wild eel generally have higher survival rates than stocked ones in open systems. Current data indicate that glass eel availability is so low as to make this aspiration impossible on a stock-wide scale. This forces the conclusion that best use must be made of the remaining glass eel available for stocking. Stock should preferentially go to areas likely to maximize high quality silver eel escapement. To this end, all stocking programmes should have the facility for post-evaluation built in at the outset.

The European Eel Quality Database (EEQD) has been updated with data on contaminants, pathogens and fat levels in eel, enabling the compilation of a comprehensive overview of the distribution area. Results demonstrate highly variable data within river basin districts, according to local anthropogenic pollution, linked with land use. Persistently elevated contamination levels, above human consumption standards, are seen in many European countries. Estimation of effective spawner biomass requires quantification of the adverse effects of contaminants, pathogens and low fat levels on the capacity of eel to migrate and spawn successfully. In the absence of quantitative studies, comparisons with threshold values of toxic compounds in other fish species indicated that the body burden of compounds such as PCBs, DDT and dieldrin in eels from many parts of Europe are so high that effects at the population level are likely to occur.

Some general advances in the field of eel science were discussed in the Report. Most elements of the natural reproduction of *A. anguilla* and *A. rostrata*, including their migration routes and spawning grounds, still remain unknown, although investigations into their artificial reproduction are yielding some useful information.