

SAG(11)4

Report of the Meeting of the Scientific Advisory Group of the International Atlantic Salmon Research Board Hotel Arctic, Ilulissat, Greenland

Friday, 3 June 2011

1. Opening of the meeting

- 1.1 The Chairman, Mr Tim Sheehan (US), opened the meeting and welcomed participants to Ilulissat.
- 1.2 A list of participants is contained in Annex 1.

2. Adoption of the agenda

- 2.1 The SAG adopted its agenda, SAG(11)2 (Annex 2).

3. Review of the updated inventory of research

- 3.1 An overview of the updated inventory of research relating to salmon mortality in the sea, ICR(11)3, was presented. For 2011, 45 on-going and 58 completed projects had been included in the inventory with an annual expenditure of approximately £6.8 million. Six new projects had been included since the 2010 update.
- 3.2 Last year, on the recommendation of its Inventory Review Group (see document SAG(09)10 for details), the SAG had identified two particular issues with the presentation of the inventory. First, it was difficult to track projects over time because the on-going projects listed in the inventory were being renumbered each year and completed projects had no reference numbers. Secondly, only limited information was provided on completed projects, making it difficult to take account of this work in on-going research planning. A possible revised format for the presentation of the inventory, developed by the Secretariat, had been reviewed by the SAG and it was agreed that this should be used in future. Accordingly, following consultations with SAG members, the revised format had been used in presenting the updated 2010 inventory and had again been used in 2011. The SAG had also agreed that it should review the need for additional changes to the inventory at its 2011 meeting, including whether future updating might be undertaken directly by the jurisdictions through the Board's website.
- 3.3 The SAG welcomed the changes that had been made to the presentation of the inventory, which had been a valuable tool in attracting funding at the start of the SALSEA Programme and which presented a concise summary of research projects of relevance to the Board. Given the current economic climate the inventory would be a valuable tool in avoiding duplication of research efforts and prioritizing research. It was noted that there would be additional costs associated with making the inventory

available for updating via the website and possible drawbacks since the present system of liaison between the Secretariat and the jurisdictions in updating the inventory was working well. The SAG therefore recommends to the Board that the inventory should continue to be presented in the revised format (with the summary table available in both Word and Excel formats) and that updating should continue to be done through correspondence between the Secretariat and Board/SAG members.

- 3.4 The SAG reviewed the new projects included in the inventory since the last update in 2010. It was agreed that the Secretariat would seek additional information about project F2 'St Pierre and Miquelon freshwater fish management plan, including a particular program on salmon from Belle Riviere', since this appeared to relate predominantly to the impacts of an in-river hydro-power installation. If this was the case, the project might be removed but the elements relating to the origin of the fish in this river system might be included in project F1 which deals with the St Pierre and Miquelon salmon fishery sampling programme. The SAG noted that this had recommenced in 2010 and included genetic analyses, which was a welcome development.
- 3.5 The SAG agreed that the jurisdictions should be given the opportunity to provide any feedback on the inventory to the Secretariat by the end of June, with a view to the inventory being made available on the Board's website by the end of July.

4. Review of Applications for Potential Funding by the Board

- 4.1 No new applications for funding had been submitted to the Board since the last Annual Meeting. The SAG noted that the Board had previously supported expert participation in a number of relevant Workshops and Study Groups and suggested such support should be considered if a need arose and subject to availability of funds.

5. Progress with Implementing the SALSEA Programme

(a) Report on the SALSEA-Merge Project

- 5.1 Professor Ken Whelan briefly described progress with the SALSEA-Merge project including the establishment of a comprehensive database, SALSEA PGNAPES, developed in order to manage the enormous amount of information emerging from the project. The database had been developed by the Faroe Marine Research Institute and will be held by ICES. A more comprehensive report on the SALSEA-Merge project would be made to the meeting of the Board.

(b) Report on SALSEA North America

- 5.2 Mr Gérald Chaput reported on SALSEA North America. There had been no initiatives in 2009/2010 but the findings from previous studies, including marine surveys, will be presented at the Salmon Summit in La Rochelle.

(c) Report on SALSEA West Greenland

- 5.3 A report on SALSEA West Greenland was presented by Mr Tim Sheehan. In 2009, 412 fish had been purchased from fishermen under the enhanced sampling programme using funds made available by the US and administered by the Board. A further 358 fish had been purchased in 2010. The intention is to continue the sampling in 2011, in order to increase the sample size. Originally, the plan had been to sample a maximum of 900 fish each year for two years. Considering the labour intensive effort required to sample each individual fish, the annual sample sizes were well below the maximum target. A third year of sampling will allow for an increase in the total sample size and greater ability to discern regional trends in differences between the samples. The total sample size will remain well below the maximum target of 1,800 fish. Mr Sheehan also indicated that it will be important to integrate the information from all three elements of SALSEA in the future.

(d) Analysis of historical tagging data

- 5.4 Since 2007, ICES has held three workshops on analysis of historical tagging data. The reports of all three workshops are available on the ICES and IASRB websites. The Board had supported these workshops by funding the participation of a GIS expert and a hydrographer and this had been extremely useful in facilitating the work. Last year, a summary of the final Workshop had been presented to the SAG. The Workshop had recommended that all the tag data used by the Workshops should be compiled into a single database available to Workshop participants and held at the ICES Data Centre and that after a period of two years the data should be made freely available. Furthermore, the reports of the three Workshops will be combined into a single ICES Co-operative Research Report to be published in 2012 and the analyses initiated by the Workshops will be written up in peer-reviewed papers, including some contributions to the ‘Salmon Summit’ (see paragraph 5.8 below).

(e) Progress on stable isotope analysis of West Greenland samples

- 5.5 The Board had previously agreed to support a study to examine any changes in trophic levels of Atlantic salmon through the marine phase of their life-cycle. Mr Gérald Chaput presented a progress report. The aim is to comprehensively sample salmon at different stages of their life-cycle: smolts migrating out of rivers; post-smolts obtained in SALSEA North America; 1SW and 2SW salmon returning to rivers; and 1SW non-maturing salmon at West Greenland. He indicated that as a result of the initial funding provided by the Board, the project had expanded considerably with the employment of a PhD student. The SAG had previously recognised the importance of this study and it believes that there may be benefits from closer cooperation and coordination of the work on stable isotope analysis in different laboratories; much of the work is being carried out in universities rather than government laboratories. However, the findings from this study and work being carried out at the Universities of Southampton and St Andrews will be presented at the Salmon Summit providing an opportunity for discussions among the scientists involved. It was noted that samples from post-smolts sampled in the SALSEA Merge project were available for analysis.

(e) Reports on sonic telemetry studies

- 5.6 Mr David Meerburg described the findings from acoustic tagging projects being conducted by the Atlantic Salmon Federation in Canada. Information on sonic telemetry studies in eastern Canada, which are a contribution to SALSEA North America, are available online at www.asf.ca. Smolts (40 – 50 fish annually) from the Restigouche, Miramichi, Cascapedia and St Jean rivers were tracked as they moved from their natal rivers and out of the Gulf of St Lawrence using arrays sited at various locations along the migration pathway (including across the Strait of Belle Isle and partially across the Cabot Strait). In addition, kelts were tagged in the Miramichi and Margaree rivers. In 2010, survival increased for all smolt groups migrating through the Gulf of St Lawrence; in the case of the Cascapedia, there was very low mortality from the estuary to leaving the Gulf. It was noted that the smolt migrations coincided with kelt movements and it had been suggested that smolts might be following the migration routes of the kelts. It had also been noted that the smolts were not migrating with the predominant surface current. The SAG had previously recognised the importance of these tagging studies which have estimated levels of mortality in three different parts of the early phase of migration for several salmon stocks and explored hypotheses concerning the speed of migration and the benefits of shoaling on mortality. Dr Fred Whoriskey has been invited to present the findings from this research at the ‘Salmon Summit’. It was noted that there are ongoing acoustic tracking projects in Denmark and Norway (Salmotrack project) in the North-East Atlantic Commission area. Details are contained in the inventory of research.

(f) Coordination of the SALSEA Programme

- 5.7 Last year, the Board had recognized that recent international initiatives under the SALSEA Programme had generated some extremely valuable databases. These include biological and genetic databases generated under the SALSEA Merge project, and time series of data and historical tagging information compiled by ICES workshops supported by the Board. The Board had recognized that there is a need to ensure that these databases are securely held, maintained and agreed procedures developed to allow access to the data for further research. In addition, the Board had noted the existence of some historical marine survey samples, such as those generated by the international sampling programme at West Greenland, that represent an invaluable resource dating back some 30 years or more. The need to ensure that these samples are being maintained and agreed procedures developed to allow access to them for further research was recognised.
- 5.8 The Board had, therefore, established a Working Group to work by correspondence with the Chairman of the Board and to report back to the Board no later than 1 April 2011. The Terms of Reference for this Working Group are contained in document ICR(10)5. The Working Group’s interim report, ICR(11)4 (Annex 3) was presented by its Chairman, Professor Ken Whelan. In summary, the Working Group had recommended that the most important role that the IASRB could play with regard to marine salmon survey data and sample coordination would be to establish a meta-database of existing datasets and sample collections, using the list developed by the Group as a basis. This will be an important step and the Working Group had indicated its willingness to continue its work by developing, prior to the end of 2011, a format for the meta-database and by providing initial information to populate this

database. The Working Group had also recommended that where specific issues arise, requiring the need for support to maintain these datasets and sample collections, the Board may wish to consider if it can offer assistance. The SAG supported these proposals and recommends that the Board ask the Working Group to complete this work by the end of the year so that the meta-database could be made available to the jurisdictions for checking at the same time as the inventory update.

- 5.9 The SAG discussed issues that had arisen concerning access to the databases and sample collections from the West Greenland fishery. It was noted that considerable resources had been committed to the sampling programme by a number of jurisdictions over a considerable period of time, including under NASCO's West Greenland Sampling Agreements, but that access to the data was not always readily available to the countries concerned. It was agreed that the SAG should recommend to the Board that the Chairman of the SAG develop a discussion document on possible approaches to improving access to and usability of the data, access to samples and protocols concerning their possible use, particularly destructive use.

(g) 2011 Symposium

- 5.10 The Assistant Secretary presented a progress report on arrangements for the 2011 NASCO/ICES 'Salmon Summit' entitled 'Salmon at Sea: Scientific Advances and their implications for management' which will be held in L'Aquarium, La Rochelle, France during 11-13 October 2011. The TOTAL Foundation has agreed to sponsor the symposium and funds have also been contributed by the IASRB and ICES. To date, approximately 100 delegates have registered and there is a maximum capacity of 130 participants. The Steering Committee has developed the Programme for the symposium and there will be 18 invited, 18 contributed and 20 poster papers in the following sessions: scene setting overviews; the distribution and migration of salmon at sea; food production, growth of salmon and trophic and other interactions; implications for salmon management and future research needs; and synthesis. While the focus is on the situation facing salmon in the North Atlantic, there will also be presentations from the Pacific and Baltic areas. In addition to allowing for presentation of the results of recent scientific research, the Steering Committee has gone to great lengths to ensure that there will be thorough consideration of the management implications and applications of the research findings. In particular, there will be a session devoted to the management aspects, including invited and contributed presentations, 'Take Home' messages and a discussion period devoted to the management implications. All authors have been advised that they should highlight any implications for management in presenting their scientific findings. The proceedings of the symposium will be published in the ICES Journal of Marine Science but, additionally, there will be a separate report by the Convenors dealing only with the management implications arising from the information presented. The aim is to have a prestigious, well organized and well reported event that will raise awareness of the programmes of research on salmon at sea and its implications for management of the resource. The SAG recognized the importance of this event and the efforts of the Steering Group in ensuring balance between the scientific and management aspects. It was noted that the Atlantic Salmon Trust is also holding a one day meeting in December 2011 in London to further disseminate the findings from SALSEA Merge to managers.

(h) Other activities

- 5.11 Reference was made to the Atlantic Salmon Trust's intention to develop an atlas of salmon migrations ('Paths of Silver') and sponsors are currently being sought.
- 5.12 It was noted that EIFAAC was seeking feedback from NASCO on the role it could play in relation to improvements to fish passage in rivers. It was suggested that this issue be raised by EIFAAC in its Opening Statement to the Council.

6. Other business

- 6.1 There was no other business.

7. Report of the meeting

- 7.1 The SAG agreed a report of its meeting.

8. Date and place of next meeting

- 8.1 The SAG agreed to hold its next meeting in conjunction with the Twenty-Ninth Annual Meeting of NASCO.
- 8.2 In closing the meeting the Chairman thanked the participants for their contributions.

List of Participants

Canada

Gérald Chaput
Richard Nadeau

European Union

Cathal Gallagher
Paddy Gargan
Alan Gray
Ted Potter
Jonathan White

Norway

Peder Fiske

Russian Federation

Sergey Prusov

USA

Tim Sheehan (Chairman)

NGOs

Paul Knight
Dave Meerburg
Ken Whelan

Secretariat

Peter Hutchinson

SAG(11)2

Agenda

1. Opening of the meeting
2. Adoption of the agenda
3. Review of the updated inventory of research
4. Review of applications for potential funding by the Board
5. Progress with Implementing the SALSEA Programme
 - (a) Report on the SALSEA-Merge project
 - (b) Report on SALSEA North America
 - (c) Report on SALSEA West Greenland
 - (d) Analysis of historical tagging data
 - (e) Progress on stable isotope analysis of West Greenland samples
 - (f) Reports on sonic telemetry studies
 - (g) Coordination of the SALSEA Programme
 - (h) 2011 Symposium
 - (i) Other activities
6. Other business
7. Report of the meeting
8. Date and place of next meeting

ICR(11)4

Interim Report of the IASRB Working Group on Marine Salmon Survey Data and Sample Collection

Introduction

1. At its 2010 meeting, the International Atlantic Salmon Research Board (IASRB) noted that some extremely valuable databases had been generated as a result of SALSEA-Merge and other recent initiatives such as the ICES Study Group on Biological Characteristics as Predictors of Salmon Abundance (SGBICEPS) and the ICES workshops on analysis of historical tag recovery data from oceanic areas. Both of these ICES initiatives were supported by the IASRB. In addition to these electronic datasets, there are sample collections, including scales and genetic samples from the international sampling programme at West Greenland for more than 30 years, which could be enormously valuable if accessible to researchers. These samples, for example, may have considerable potential given the development of new analytical techniques such as the genetic tools developed in recent years. The IASRB had agreed that it needed further guidance on issues such as how to securely store both electronic data and samples, accessibility of the material and the cost implications of different arrangements. It decided, therefore, to establish a Working Group comprising two representatives each from Europe and North America and one from the Russian Federation to consider these matters and make recommendations.

Terms of Reference

2. The Terms of Reference for the Working Group are contained in ICR(10)5 and are as follows:
 - Compile a listing of available databases of relevance to the SALSEA Programme including a description of these data, the size of the database and the current location and agency/individual scientist responsible for their maintenance and storage;
 - If necessary, advise on appropriate arrangements for securely maintaining these databases and for updating the data if required, including appropriate quality control procedures;
 - Develop an agreed procedure with the owners/holders of the data regarding access to the information;
 - Compile a listing of samples resulting from the international cooperative programmes held by NASCO Parties or jurisdictions both current and archival including a description of the nature and size of the samples, their storage and current locations and agency/individual scientist responsible for their maintenance and storage;
 - Advise on options to ensure that these samples are safely maintained for future use;
 - Develop an agreed procedure with the owners/holders of these samples regarding access to the information;

- Advise on the possible roles for the Board in assisting with the maintenance, storage and updating of databases (including seeking advice from ICES) and for maintaining these biological samples;
- Advise on approaches that might be adopted by the Board to encourage enhanced cooperation with regard to sharing of long time series of data being held nationally but which might support the work of the Board.

Composition and Working Methods

3. The Working Group comprised Mr Ted Potter (EU), Ms Marianne Holm and Dr Vidar Wennevik (Norway), Mr Tim Sheehan (USA) and Dr Sergey Prusov (Russian Federation) and was chaired by Dr Ken Whelan. The NASCO Assistant Secretary supported the work of the Group. The Group worked by correspondence and several members of the Group met briefly immediately after the meeting of the ICES Working Group on North Atlantic Salmon. This is an interim report and the Group is willing to continue its work if the IASRB agrees with its recommendations for taking forward this important initiative.

Progress to Date

4. The Working Group has made initial progress and its responses to each of its Terms of Reference are detailed below. The ToRs relating to compilation of a listing, secure maintenance and accessibility are repeated for both datasets and sample collections. In the interests of brevity, however, the responses are combined under the ToRs relating to datasets and not repeated for the ToRs relating to samples.

Compile a listing of available databases of relevance to the SALSEA Programme including a description of these data, the size of the database and the current location and agency/individual scientist responsible for their maintenance and storage.

5. The Working Group identified the following preliminary list of relevant datasets that relate to the marine phase of salmon and are, therefore, of relevance to the SALSEA Programme:
 - SALSEA-Merge
 - SALSEA North America
 - SALSEA Greenland
 - Faroes fishery sampling
 - Greenland fishery sampling
 - Various homewater coastal studies (e.g. Ireland, Norway, UK)
 - ICES historical tagging database
 - SGBICEPS
 - Genetic baseline databases
6. The Working Group recognises that most of these datasets include samples (scale samples as a minimum) as well as data. Some of the datasets and sample collections have been derived from collaborative international programmes while others are predominantly the result of initiatives by a single country or agency.

7. The Working Group concluded that it would be valuable for the IASRB to develop a meta-database detailing *inter alia* what data and samples exist, whether they were derived from international collaborative programmes or national research, where they are held, the person responsible for them, and their accessibility to researchers. This meta-database could be held by the IASRB and might be made available on the IASRB website, if funds permit. The Working Group is willing to further refine this listing, to develop a database format for holding this information and to populate the database if the IASRB agrees to the establishment of such a meta-database. The existence of this meta-database would serve to highlight the value of the datasets and sample collections and hopefully minimise the risk of them being disposed of without prior warning. The information developed by the Working Group could then be validated by IASRB members before it is made publicly available. The Group believes that there might be other datasets and sample collections (particularly scale samples) held in national laboratories which would have relevance to the SALSEA Programme and which might also be included in the meta-database, in due course. Details of these datasets and sample collections might be sought through a request to Board members, perhaps in conjunction with the annual request for the updating of the inventory.

If necessary, advise on appropriate arrangements for securely maintaining these databases and for updating the data if required, including appropriate quality control procedures.

8. The Working Group considers that this is not a matter for the IASRB as the individual datasets and sample collections are believed to be managed appropriately by the individual or agency responsible. However, this would need to be checked with the 'owners' on a case by case basis, in order to identify any issues of which the Group may be unaware. While there may be risks, and costs, associated with holding datasets and sample collections in one location, the current locations had generally been chosen for a good reason (e.g. location of specific expertise or laboratory facilities). However, the Working Group believes that this issue might need to be re-visited with involved parties when specific experts retire or take-up different responsibilities or if costs become a problem. Where there are proposals to dispose of sample collections, these might first be offered to other laboratories and a mechanism to facilitate this might be included in the meta-database.
9. The Working Group does not believe that the Board can play any significant role in maintaining or updating the datasets and sample collections other than establishing and updating the meta-database that will highlight their existence and accessibility. This in itself is a valuable step forward in raising awareness of the existence of the information, providing information concerning its accessibility and highlighting its significance to the international community. Reports could be made to the IASRB on the status of the datasets and sample collections included in the meta-database and the IASRB, through its Scientific Advisory Group (SAG), might advise how this information may support new research initiatives that are notified to the IASRB.

Develop an agreed procedure with the owners/holders of the data regarding access to the information

10. The Working Group notes that there are a number of different types of data in the list shown in paragraph 5 above. The tagging data is quite old and there should be relatively little sensitivity about releasing these data more widely. Many of the SGBICEPS data time series are, however, part of on-going programmes and the project managers may be less willing to release them. Many of the older datasets and sample collections were also collected as part of national programmes and there may be considerable sensitivity about access to them. The Working Group concluded, therefore, that it may not be possible to develop generic guidance concerning access to the datasets and sample collections, but those responsible for the national datasets should be consulted with regard to whether, and if so how, the data may be accessed, and this information should be included in the meta-database. With regard to datasets and sample collections derived through international programmes, the Working Group believes that these may have additional significance and provide new insights into the marine phase of salmon given the development of new analytical tools. This might be particularly so for the material derived from the West Greenland fishery sampling programme, conducted for many years under agreements developed by the West Greenland Commission. The Working Group has not developed procedures concerning access to these datasets and sample collections but believes this issue should be considered further by the Board. It may be, for example, that the Board would wish to be advised of any requests for access to these datasets and sample collections in the future, particularly where destructive analysis (e.g. of scales) is proposed.
11. The Working Group also discussed the disposition of datasets and sample collections from shorter-term international programmes such as SALSEA. Some funding agencies may require the datasets to be made publicly available after a suitable period of time, although it was noted that under European Commission funded projects it is possible to 'ring fence', at the start of the project, existing datasets that will be analysed as part of the research. Furthermore, it may not be appropriate for laboratories to charge for access to datasets and sample collections when they have been collected under funding from another agency such as the European Commission. The Working Group believes that the project teams responsible for international datasets and sample collections (e.g. SALSEA) should agree protocols for storing and making datasets accessible following completion of the project, in agreement with the funders. This information should also be included in the meta-database. Where national data are compiled into international databases (e.g. tagging data) any restrictions on access to the data should be included within the documentation (e.g. with data held by the ICES data centre).
12. The Working Group noted that several datasets and sample collections are not well documented and this might be one of the greatest restrictions on making them accessible to other researchers. The Working Group concluded, therefore, that efforts should be made to ensure that all relevant national and international datasets and sample collections are fully documented and included in the meta-database. Again, this might be achieved through a request from the IASRB to the members of the Board.

Compile a listing of samples resulting from the international cooperative programmes held by NASCO Parties or jurisdictions both current and archival including a description of the nature and size of the samples, their storage and current locations and agency/individual scientist responsible for their maintenance and storage

13. See paragraphs 5 - 7 above.

Advise on options to ensure that these samples are safely maintained for future use.

14. See paragraphs 8 - 9 above.

Develop an agreed procedure with the owners/holders of these samples regarding access to the information

15. See paragraphs 10 - 12 above.

Advise on the possible roles for the Board in assisting with the maintenance, storage and updating of databases (including seeking advice from ICES) and for maintaining these biological samples

16. The Working Group does not believe that the IASRB can play any significant role in maintaining, storing or updating the databases or maintaining samples other than in establishing and maintaining the meta-database. This in itself is a valuable step forward in raising awareness of the existence of the information, providing information concerning its accessibility and highlighting its significance to the international community. The Board could also play a role in seeking from the Parties updated and additional information through an annual report linked to the return of information on the inventory of research related to mortality of salmon at sea.

17. The Working Group notes that there may be issues going forward regarding the costs of maintaining the datasets and samples and, given the international significance of some of this information and material the Board may wish to consider if it can offer assistance, if a need arises and if funds permit. Some assistance may also be appropriate in the form of support to allow compilation of datasets/samples, to modernise the databases, where appropriate, and in establishing inventories of samples where these are lacking. The Working Group recommends that these matters be given further consideration in future, if any issues arise.

Advise on approaches that might be adopted by the Board to encourage enhanced cooperation with regard to sharing of long time series of data being held nationally but which might support the work of the Board

18. The Working Group notes that recent ICES Study Groups and workshops have been successful in identifying, compiling and analysing multiple datasets and that the Board has supported expert participation in these initiatives. The Working group believes that the Board should consider continuing to support such initiatives, as funds permit, if further relevant study groups or workshops are established in future. The Working Group notes that attendance at these Study Groups and workshops has been constrained by availability of funds, and that even with IASRB assistance, this had somewhat restricted the progress made.

‘Next Steps’

19. The Working Group believes that the most important role that the IASRB can play with regard to marine salmon survey data and sample coordination is to establish a meta-database of existing datasets and sample collections, using the list developed by the Group as a basis. This will be an important step and if the Board agrees, the Working Group is willing to continue its work by developing, prior to the end of 2011, a format for the meta-database and by providing initial information to populate this database. The Group believes that where specific issues arise requiring the need for support to maintain these datasets and sample collections the Board may wish to consider if it can offer assistance.

Ken Whelan
IASRB Chairman