SAG(19)04

Draft Report of the Seventeenth Meeting of the Scientific Advisory Group of the International Atlantic Salmon Research Board

Scandic Ishavshotel, Tromsø, Norway

1 June 2019

1. Opening of the Meeting

1.1 The Chair of the Scientific Advisory Group (SAG), Gérald Chaput (Canada), opened the meeting and welcomed participants to Tromsø.

1.2 A list of participants is contained in Annex 1.

1.3 The Chair introduced the Secretary to explain the setup of the meeting and the review process that had taken place regarding the Rules of Procedure for the International Atlantic Salmon Research Board (the IASRB).

2. Adoption of the Agenda

2.1 The SAG adopted its Agenda, SAG(19)03 (Annex 2), with the addition of an item for information under item 8 of the agenda, 'Other business'. This related to clarification of the proposed rules and procedures of the IASRB with specifics to the functioning of SAG.

3. Review of the Updated Inventory of Research and the Metadatabase of Salmon Survey Data and Sample Collections

Research Inventory

3.1 The Secretary presented an overview of the Inventory of Research Relating to Salmon Mortality in the Sea, SAG(19)02. For 2019, the total annual expenditure on the 52 ongoing projects (5 of which are un-costed) is approximately £8.5 million. Approximately 46% of the expenditure is associated with long-term monitoring programmes. The Secretary indicated that there are seven new projects included in the Inventory in 2019, some of which have been ongoing for some time and one of which is completed. One new project involving tracking individual fish has been included since last year. The new projects are as follows:

Canada

- Coastal acoustic telemetry receiver infrastructure off the Coast of Greenland;
- Atlantic Salmon Research Joint Venture – Evaluating The Potential of Open-Ocean Acoustic Telemetry of Atlantic Salmon;
- Mapping Spatial and Temporal Distribution of Atlantic Salmon Mixed Stocks in the North Atlantic.

European Union – Ireland

- National Salmon Scale Archive (NSSA).

European Union – UK (England and Wales)

- Evaluation of potential stressors affecting Atlantic salmon at sea, particularly in estuarine and nearshore environments.

United States

- Evaluation of age-1 hatchery smolts in the Narraguagus River;
- Monitoring the energy density of Atlantic salmon prey at Greenland.

3.2 The SAG noted that there are a number of ongoing projects that were of particular relevance to NASCO and the IASRB. Not exclusively, these projects included:

- Project N22 from Norway: "Salmon at Sea" that addresses a number of research avenues and multiple disciplines related to ecology of salmon;
- Project C18 from Canada: project led by the Atlantic Salmon Federation that is currently in its 17th year of consecutive tracking of smolts and post-smolts from four index rivers in eastern Canada;
- Project EU De6: one of several European Union (EU)-led projects to further understand salmon distribution, migration and survival at sea;
- Project C41 from Canada: a new initiative to extend tracking of salmon at sea using satellite tracking tags placed on larger salmon during their second summer at sea at West Greenland.

3.3 The Chair recognised the effort and the information provided in the summary report by the Secretariat, and the SAG highlighted the great value of the current Inventory. The SAG discussed the challenges in maintaining the Inventory, in incorporating updates and assimilating all the information from the Inventory. The addition of pull-down menus for contributors to categorise projects according to SALSEA work packages and IASRB topics was felt to be a useful addition to the Inventory template. There was also a brief discussion on whether there were alternate processes for compiling and maintaining the Inventory more efficiently. The SAG was not in a position to propose alternatives but indicated that a review of alternate approaches could be included as a task for the future review of the Inventory and process.

3.4 The SAG also discussed how further to promote the Inventory. The SAG felt that Parties could promote the Inventory, (SAG(19)02), further by communicating it to the groups that contributed input to the Inventory thus completing the follow-up with contributors and making reference to the IASRB's website.

3.5 A few questions were raised regarding omissions in specific projects (such as absence of funding estimates). The Secretary clarified that the funding information was requested in relation to the relevant year and not the entire project. The SAG recommended to the IASRB that the Parties be asked to provide any comments, including omissions and corrections, on the Inventory to the Secretariat by 1 July and, thereafter, that the revised Inventory should be uploaded to the IASRB's website.

3.6 The SAG discussed a possible duplication of effort in terms of the annual reporting to the IASRB for the SALSEA – Track progress reports. The Chair suggested that that work could be streamlined, possibly by adding a 'SALSEA – Track' row to the Inventory return form. The SAG agreed to propose this addition to the Inventory template to the IASRB.

3.7 In 2018, the SAG had recommended that the need for a further review of the Inventory should be reconsidered at the earliest in 2020 given that it thought that it might be appropriate to wait until after the IYS to conduct the next review of the Inventory. In

addition, it was suggested that when the review is undertaken, the Group could also consider how the information is collated and solicited. Members of the SAG were keen to highlight to the IASRB that they felt the Inventory was still very much useful and relevant.

Metadatabase

3.8 The IASRB had previously decided that it could play an important role with regard to marine salmon survey data and sample co-ordination by establishing a metadatabase of existing datasets and sample collections of relevance to mortality of salmon at sea. This metadatabase was established in 2014 and is made available on the IASRB's website. In 2015, the IASRB agreed that information on archival scale collections should, as a first step, be included in the IASRB's metadatabase. Accordingly, Parties / jurisdictions were requested to provide details to the Secretariat of any archival scale collections. The IASRB had also agreed that information on the West Greenland Sampling Programme Biological Characteristics database should be included in the metadatabase.

3.9 There have been no further updates on the metadatabase since the 2018 Annual Meeting and the Chair encouraged Parties / jurisdictions to contribute details of scale collections for inclusion in the metadatabase.

3.10 Part of the intention of creating a metadatabase was to make it available to researchers for consideration. Members involved in the creation of the metadatabase recognised that further consideration needed to be given to the next steps relating to this valuable resource. It was recognised that the Likely Suspects Framework project and related workshops will draw on the metadatabase; this process may provide some insight on the current metadatabase contents and suggestions for next steps.

4. Update on Projects / Workshops during the International Year of the Salmon

4.1 The Chair invited presentations on a number of workshops organized as part of the International Year of the Salmon.

4.2 Mark Saunders (NPAFC) was invited to provide an update and gave some background to the development of IYS research and the activities taking place in the Pacific. A number of activities and symposiums were highlighted that had engaged hemispheric collaborations between the Pacific and Atlantic research communities (Annex 3).

4.3 Fisheries and Oceans Canada (DFO) and the North Pacific Anadromous Fish Commission (NPAFC) co-hosted an IYS workshop on Pacific and Atlantic salmon status and trends in Vancouver (BC; Canada), during 23 – 24 January 2019. The primary goal of the workshop was to bring together salmon ecologists interested in working with others on representative times series of data and associated metadata to understand salmon status and trends. The specific objectives of the workshop were to:

1) identify a series of legacy datasets (and associated standards where possible);
2) look at broad temporal patterns for salmon data categories; and
3) link observed state changes and trends to potential drivers and mechanisms.

4.4 The workshop followed on from a meeting held in Santa Barbara (USA) in June 2018 (entitled 'Toward Effective Coupling of the Science of a Changing Climate with Salmon and People') and immediately preceded one developing an international salmon data laboratory. There were 25 participants at the workshop who contributed information on state changes and trends for sockeye, pink, chum, chinook and Atlantic

salmon with incidental information provided for steelhead, coho, and masu salmon. The workshop report will be published in the NPAFC Technical Report series.

4.5 Doug Bliss (Canada) updated the SAG on the 2019 Atlantic Salmon Ecosystems Forum was held in Quebec City (Canada) on 12 – 13 March 2019. The Atlantic Salmon Ecosystems Forum (ASEF) began in 2002 as the biennial 'Maine Atlantic Salmon Technical Advisory Committee Research Forum'. In 2018, the Atlantic Salmon Research Joint Venture (ASRJV), based in Canada but with US representation through NOAA, hosted the forum in Canada, coinciding with the focal year of International Year of the Salmon (IYS). The overarching theme of the Forum was the theme of the IYS: *Salmon and People in a Changing World.* The 2019 Forum included session themes based on three of the Research Themes for the International Year of the Salmon. Additional contributors to the forum were the province of Quebec, and NGOs. The topics discussed at the forum contributed to understanding the causes of Atlantic salmon declines, foster collaboration for the purpose of developing research and assessment projects related to wild Atlantic salmon. There were 150 participants at the forum with 35 oral presentations and 15 poster presentations. The conference abstracts are to be published in the near future.

4.6 The Atlantic Salmon Research Joint Venture (ASRJV) has produced a five-year science plan intended to support the development of projects in furthering the understanding of Atlantic Salmon and ultimately the conservation of the species.

4.7 Peder Fiske (Norway) explained that as part of the IYS, a conference called 'The wild salmon conference' ('Villakskonferansen') was held in Trondheim, Norway 22 and 23 January 2019. The conference was science-based but was held in Norwegian to reach out to a broader audience of stakeholders, fishers and interested members of the public. The name on the conference was 'New methods give new insights – Salmon research into its second century'. The focus of the conference was not the methods themselves, but rather what had been learned using the new methods. The conference was very well attended with over 200 participants and 40 talks were given during the conference. The talks coved topics from how to best communicate science, effects of climate change, effects of cultivation, migration of salmon in rivers and at sea, survival at sea, effects of parasites and diseases, to the effects of aquaculture on wild Atlantic salmon. The program and summaries of the talks can be found on the following website https://www.vitenskapsradet.no/villakskonferansen2019.

4.8 Ken Whelan (NGO) appraised the SAG of an ICES / NASCO workshop to be held during 24 – 28 June 2019 entitled 'A Workshop for North Atlantic Salmon At-Sea Mortality (WKSalmon)'. In June 2018, both the SAG and the IASRB had discussed moving forward with a workshop to identify and obtain data to define specific salmon domains as proposed by the Likely Suspects Framework workshop. The Chair of the IASRB had requested that the Secretary liaise with ICES about the possibility of organising a data workshop to identify and prioritise data gaps in relation to candidate mortality factors. A 5-day workshop has been announced by ICES with associated terms of reference. Potential relevant data providers include experts from a number of ICES expert groups: WGNAS; EPDSG; WGOOFE; WGZE; WGSPEC; WGWIDE, as well as ICES survey group members, ICES Data Centre staff and ICES Advisory Department staff. The first workshop would be tasked to:

1) identify the available and relevant data in the Atlantic basin;
2) develop, with ICES / the MSA Marine Team, a format for uploading data to the relevant ICES database(s); and

3) identify other data sets that may be of relevance to the analysis of at-sea-salmon mortality e.g. oceanographic time-series, plankton survey data, International Ecosystem Summer Survey in the Nordic seas (IESSNS), and other relevant pelagic or demersal fish surveys and a plan developed to access these data in a relevant format for this work.

4.9 An update on the Missing Salmon project was also provided by Ken Whelan and its development into the Missing Salmon Alliance. The Alliance is a collaboration between a number of UK NGOs (Atlantic Salmon Trust, Game and Wildlife Conservation Trust, Salmon and Trout Conservation, and the Angling Trust, supported by the Fishmongers' Company London) that successfully has secured funding to employ several scientists over three years to take forward the identified research.

4.10 Salmon & Trout Conservation, the Game & Wildlife Conservation Trust and the Atlantic Salmon Trust, on behalf of the SAlmonid MAnangement Round the CHannel (SAMARCH) project, and as a contribution to the International Year of the Salmon, will host a two-day SAMARCH International Salmonid Coastal and Marine Telemetry Workshop, on 5 and 6 November 2019 in Southampton (UK). The sessions will focus on sharing knowledge of current tracking projects, new and emerging technologies, and maximising the benefits and opportunities of multiple tracking projects.

4.11 The Chair thanked all of the speakers for providing updates.

5. Developments in relation to SALSEA - Track

5.1 In 2014, the IASRB had endorsed the need for an international telemetry programme and adopted a Resolution (ICR(14)10) encouraging Parties to continue the development of local collaborative telemetry projects, encouraging the development of large international collaborative projects building on local efforts and encouraging Parties to make efforts to identify funding sources. The IASRB had noted that the telemetry programme should build on the success and identity of the SALSEA Programme and had recognised that there may be a role for the IASRB in co-ordinating efforts and supporting fund raising initiatives. In 2014, a Telemetry Workshop organized by the IASRB had developed 12 outline project proposals utilising telemetry. The IASRB had recognised that if the international telemetry programme is to proceed, it would be important to liaise with the project leaders with a view to following progress and, where appropriate, to provide support to assist with their implementation. In 2015, the IASRB had recognised the high value of the SALSEA brand and the strong impact of NASCO as the international forum for consultation and co-operation on wild Atlantic salmon. The IASRB reaffirmed its commitment to an international telemetry project under the SALSEA brand, namely SALSEA – Track. Specifically, the IASRB agreed to support SALSEA – Track as a continuing commitment to understanding the factors affecting the mortality of salmon at sea, to make funds available to prepare a vision statement for SALSEA – Track and to advance existing initiatives towards an integrated collaborative telemetry programme. In 2016, the IASRB had confirmed that it endorsed the twelve projects but noted that, if they changed substantially, they should be referred to the SAG. It was recognised that there might be scope to combine some of these projects into larger projects within the North American and North-East Atlantic Commission areas.

5.2 In 2016 and 2017, funding had been provided to the IASRB for three projects relating to marine mortality through an EU funding mechanism. Approximately €800,000 funding has been provided by the EU and this has contributed to projects costing approximately €2,000,000 being implemented.

5.3 The Chair referred participants to paper ICR(19)04, which contains an update on the outline project proposals developed in 2014 and the European Union funded projects. The Chair proposed that the SAG recommend to the IASRB that the updates on SALSEA – Track initiatives be included in the Inventory to ensure that all projects are captured and / or updated annually.

5.4 Niall Ó Maoiléidigh was asked to provide the SAG with a talk on the INTERREG Sea Monitor project, another of the SALSEA – Track projects that had not been able to be provided to the Secretariat in time for inclusion in the paper ICR(19)04. The Chair thanked Dr Ó Maoiléidigh for informing the SAG about the project and suggested that the SAG recommend to the IASRB that the paper ICR(19)04 be revised to include this project and redistributed.

5.5 In 2017, the SAG received a report on a new approach to tracking, 'ROAM', based on a technique for sub-surface oceanographic monitoring. This technique may offer potential for fine scale positioning of salmon at sea obtained with satellite tags and related archival tag technologies. The Council had recognised that it would be important for the IASRB to be kept informed of developments in relation to this technology. Tim Sheehan (USA) stated that he would provide an update on progress with the ROAM project to the IASRB.

5.6 Dave Meerburg (NGO) briefly updated the SAG on smolt and kelt tracking studies carried out by the ASF in the Gulf of St Lawrence.

6. Progress Reports on Projects Funded by the IASRB

6.1 No new projects were supported in 2018 and no applications for funding were received.

7. Review of Project Applications for Potential Funding by the IASRB

7.1 Cathal Gallager (EU) was invited to update the SAG on the EU-funded SMOLTrack projects, the first of which was started in early 2017. Tagging has highlighted the high mortality rates of smolts as they migrate out to the nearshore environment and shown temporal differences between 2017 and 2018 (in the second SMOLTrack project). A new website is available for the project: www.smolttrack.eu. A new tranche of funding from the EU is available and it is anticipate that the SMOLTrack project will be expanded to include more partners to range from northern Finland to northern Portugal in a third project. The LICEtrack project was also highlighted.

7.2 The IASRB had previously agreed that it would be important to have reserves available to it so that it could continue to support initiatives such as the Greenland and Faroes GSI projects, where the IASRB's support had assisted in securing additional funding from other sources. These projects had resulted in new information of value to management with limited financial support from the IASRB. The SAG recognised that the IASRB has limited resources and recognised that if it is to continue to play a role in supporting research on salmon at sea, it should consider how it can address this situation.

8. Other Business

8.1 The Chair referred the members of SAG to paper ICR(19)03, 'Chair's Proposed Revisions to the Rules of Procedure for the International Atlantic Salmon Research Board' and highlighted the aspects of the Rules of Procedure that related directly to the SAG (items 10 to 12). The Secretary clarified that the idea was that the SAG would meet at the request of the IASRB and therefore each SAG meeting would have a specific Terms of Reference relevant to the requirements specified by the IASRB. The

SAG noted that clarification on the development of the Terms of Reference and whether the SAG would meet as discussed in the report of the inter-sessional meeting of the IASRB (ICRIS(19)04) would be welcomed, where paragraph 7.3 provides specifics on the interactions of SAG and IASRB that could be included in the procedures for the SAG.

8,2 The Chair clarified further that the members of the SAG would be specified and retain their positions for the identified term. The Chair requested comments from the SAG regarding how the SAG meetings were conducted (i.e. only identified representatives were seated at the table) and the approach was considered to be effective by SAG. Members of the SAG recognised that how meetings were conducted could change given the proposed revisions to the rules.

8.2 No other business was raised.

9. Report of the Meeting

9.1 [The SAG agreed the report of the meeting.]

10. Date and Place of the Next Meeting

10.1 The SAG noted that if the proposals contained in the 'Review of Procedures Relating to the Work of the International Atlantic Salmon Research Board and its Scientific Advisory Group', to be considered by the IASRB and Council, there was no defined date for the next meeting. However, if a further regular meeting is to be held, the SAG agreed that it should be held in conjunction with the Thirty-Seventh Annual Meeting of NASCO (2 – 5 June 2020)]

11. Close of the Meeting

11.1 The Chair of the SAG thanked the participants for their contributions and in particular the Secretariat for their excellent work in support of the IASRB and the meeting of the SAG. The Chair closed the meeting of the Scientific Advisory Group.

Annex 1. List of participants

Annex 2: Agenda

Annex 3: Summary of IYS workshops and activities from NPAFC Mark Saunders