CNL(17)53

Summary of discussions during the Special Session on the evaluation of Annual Progress Reports (APRs) under the 2013 - 2018 Implementation Plans

Stamatis Varsamos (European Union): thanked the Review Group for its work and provided an update on the missing APR for the European Union. He indicated that he had consulted colleagues in Portugal in order to ensure their involvement in the process. With regard to compliance with EU legislation there was progress being made both in relation to the Water Framework Directive and the Habitats Directive and he anticipated that Portugal would participate in the next Implementation Plan cycle scheduled to commence in 2019. He also referred to the lack of information on aquaculture in the Implementation Plan for France.

Bénédicte Valadou (European Union - France): indicated that France had advised that it would not be able to include information and actions related to aquaculture in its current Implementation Plan but would intend to do so in the next Implementation Plan cycle.

Steve Sutton (Atlantic Salmon Federation): thanked Canada for its APR and noted that it contained reports on a number of significant initiatives directed at the conservation of wild salmon. He noted that it is pleasing to see progress being made on these initiatives but one area where the NGOs remain frustrated is with the lack of clarity, accuracy, and completeness of information provided by the Aquaculture Management Branch of Fisheries and Oceans Canada (DFO). This was also noted by the Review Group in its assessment of Canada's APR and the Review Group had asked a number of questions to try to illicit additional information. He noted, however, that once again the same problems are evident with lack of accuracy and completeness in the responses to those questions. In particular, he referred to the question regarding the proposed aquaculture project in Placentia Bay, Newfoundland, where Grieg Seafarms plan to import and grow triploid Icelandic strain salmon. He indicated that the question posed by the Review Group was 'can Canada guarantee that the fish used will be all-female'. Canada had responded that 'All-female triploid production is planned subject to completion of hatchery and nursery construction and completion of the normal federal and provincial legislative and regulatory review and approval processes in Canada. If all approvals are secured, hatchery construction is planned to begin in 2017, first egg imports would occur in late fall 2017'. He indicated that information obtained by ASF, as part of the environmental assessment for this project, provides different information. Indeed, the environmental assessment report states that 'Since only mixed-sex triploids are currently available, DFO has received a commitment from Grieg officials to develop a schedule to transition to production to all-female lines… this is anticipated to take 3-5 years to complete. In the interim, DFO will authorize mixed-sex triploids'. He asked why there is a discrepancy between the environmental assessment report and the information provided by Canada in response to the Review Group's question and if something has changed, which means the plan is to now use all females immediately, could Canada provide details?

Sylvie Lapointe (Canada): replied that based on discussions with Grieg Seafarms officials in Newfoundland, use of all-female triploids is planned by the time of full commercial development. The project has a phased development schedule that differs from that submitted in the provincial EA registration process based on technical assessment by provincial officials.

She indicated that it is reasonably possible that initial stockings (e.g. in year one and two) may include a mixture of all-female and mixed-sex triploids dependent upon the availability of sufficient quantities of family-selected all-female milt from the supplier's facility. As the project establishes marine farm sites, mixed-sex triploid production will decline to zero. Both the egg supplier (Stofnfiskur) and Grieg Seafarms, Newfoundland do not see value in mixed-sex triploid production. This is consistent with other salmon farming companies considering the use of triploids.

Jóannes Hansen (Denmark (in respect of the Faroe Islands and Greenland): highlighted the importance of Implementation Plans and Annual Progress Reports and welcomed the progress made in terms of the clarity and utility of the information provided. He referred to the development of a risk framework for the Faroese salmon fishery and the requirement that stocks should be at a sustainable level so the reporting under APRs is important in monitoring developments. He expressed concern that not all jurisdictions were reporting or providing detailed reports and noted that stocks in southern Europe are at risk.

Rory Saunders (United States of America, Chair of the Review Group): referred to the statement from France about the timescale for completion of its Implementation Plan through inclusion of information on aquaculture, introductions and transfers. He referred to the 2017 APR submitted by France, CNL(17)30rev, and noted that this states that France is 'committed to preparing and working on a plan as early as the second half of 2017'.

Dan Morris (United States of America): thanked the Review Group for its work and noted the very favourable review of the APR for the Faroe Islands which set a gold standard. He highlighted the progress with regard to mixed-stock fisheries in Scotland, but noted that the Review Group still felt the report lacked clarity, and the intention of Northern Ireland to amend its Implementation Plan to take account of the Review Group's comments.

Andrew Graham-Stewart (Salmon and Trout Conservation Scotland): stated that, as the Review Group's questions make clear, Scotland's APR is lacking in relevant detail. He expressed concern about what is being concealed and suggested that underlying the APR is a hidden agenda acting against the interests of wild fish. Almost everything that the Scottish Government Department (Marine Scotland) responsible for wild salmon does is aimed at promoting and protecting the salmon farming industry. He indicated that those present at last year's Special Session on impacts of salmon farming will recall that the Scottish Government representative announced that salmon farms would be permitted to have an average of eight adult female lice per fish before they might be forced to cull or harvest. The Scottish Government representative even had the gall to suggest that this amounted to progress! He stated that in fact it was another ten months before this woefully lax policy was implemented. Marine Scotland recently published a topic sheet on the policy and it does not even mention wild fish. He indicated that the truth is that Marine Scotland's absolute priority is the salmon farming industry and it seems that it will do virtually anything to shield the industry from proper scrutiny or indeed any meaningful regulation that might ensure that the industry is managed in a way that is consistent with NASCO's goals. He stated that Marine Scotland has long been dominated by a determination to foster the growth of salmon farming and he asked if the new Scottish Government representative would agree that it is now time for Scottish Government to honour its obligations to wild salmon under NASCO and that means urgently redressing the balance between the growth of salmon farming and the protection of wild fish.

Niall Greene (Salmon Watch Ireland): noted that the Irish APR is the result of inputs from two different government departments: the Department of Communications, Climate Action and Environment has statutory responsibility for the protection and conservation of wild salmonids and the Department of Agriculture, Food and the Marine has responsibility for the development and regulation of aquaculture, including salmon farming. He indicated that the part of the APR prepared by the Department of Communications, Climate Action and Environment, and concerned with the current state of wild salmon stocks, the challenges they face and the actions being taken by the authorities is, on the whole, an honest assessment of the situation. That part dealing with the impact of salmon farming on wild salmonids, prepared by the Department of Agriculture, Food and the Marine is, on the other hand, a litany of alternative facts underpinned by the opinion of its own scientific advice that the impact of sea lice on salmon survival is 1% - an outlier from almost the entire universe of published research on the subject. He asked if the Irish competent authority for the protection and conservation of wild salmon shares the views of the Irish department responsible for aquaculture reflected in the APR? He also asked for clarification of the official view of the competent authority on the impact of sea lice on wild salmon survival at sea.

Denis Maher (European Union - Ireland): responded that it was important to set some context since he represents the Irish ministry with responsibility for natural resources, including the conservation and protection of wild fish, particularly salmon, and hence participates in NASCO on behalf of the Irish Government. He indicated that Inland Fisheries Ireland (IFI) is the statutory scientific advisory body to the Department of Communications, Climate Action and Environment. The relevant competent and statutory authority for aquaculture licencing and development is the Department of Agriculture, Food and the Marine. That Department had been consulted in relation to the three questions submitted in advance of this meeting and provided the responses which have already been delivered. He indicated that from a wild fish perspective, the Department of Communications, Climate Action and Environment and IFI have consistently set out their position as regards the development of aquaculture. This position is to support the development of aquaculture which is environmentally sustainable and which is consistent with EU and international environmental obligations and requirements in particular the EU Habitats Directive under which salmon is included at Annex II. When consulted on aquaculture proposals it is this policy that guides inputs to the Department of Agriculture, Food and the Marine. He noted that the question posed is essentially what is the view of Ireland's wild fisheries authorities regarding the impact of sea lice on wild Atlantic salmon. He set out that position by referring to the published and peer reviewed work of IFI scientists. He indicated that IFI collaborated in an international study published in 2012 to examine the impact of sea lice on the marine survival of Atlantic salmon. The results reveal that that on average 39% of salmon mortalities were attributable to sea lice which impacts wild salmon numbers. The study involved experts from the Scottish Oceans Institute at the University of St Andrews, the Department of Zoology at the University of Otago in New Zealand, the Atlantic Veterinary College at the University of Prince Edward Island in Canada, the Institute of Marine Research in Norway, the Norwegian Institute for Nature Research and IFI. The study concludes that sea lice, which were likely acquired during early marine migration in areas with salmon farming, elevate local abundance of sea lice. The research was published in Proceedings of the Royal Society. The concern also raised is not only for a 39% loss in salmon abundance, but also the loss of genetic variability. Because natural mortality rates are high, even a proportionally small additive mortality from parasites can amount to a large loss in adult salmon recruitment. He stated that the finding that sea lice are responsible for 39% of the mortalities of salmon in the North-East Atlantic Ocean was considered significant in the context of declining salmon stocks across Europe. He indicated that the IFI

findings were supported by those of Krkošek *et al*. (2013) published in the Journal of Fish Diseases which demonstrate that sea lice cause losses of 34% of wild salmon returning to rivers in the West of Ireland. In 2014, IFI were part of a team of top international scientists from Norway, Scotland and Ireland that undertook a definitive review of over 300 scientific publications on the effects that sea lice can have on sea trout stocks. The team reviewed all available published studies and concluded that sea lice have negatively impacted wild sea trout stocks. He noted that the study was funded by the Norwegian Seafood Research Fund which provides investment in Norwegian seafood industry-based R&D. The study also examined the potential effect of sea lice on salmon and concluded that sea lice have a potentially significant and detrimental effect on marine survival of Atlantic salmon with potentially 12 to 44% fewer salmon spawning in salmon farming areas. These conclusions concur with previously published IFI research on the potential impact of sea lice from marine salmon farms on salmon survival. The most recent study by IFI, entitled 'Quantifying the contribution of sea lice from aquaculture to declining annual returns in a wild Atlantic salmon population' was published only last month in the international journal 'Aquaculture Environment Interactions'. The study used 30 years of data from the Erriff river (National Salmonid Index Catchment) in the West of Ireland to evaluate the effect of sea lice from salmon aquaculture on wild Atlantic salmon and showed that smolts migrating to sea can become infected with sea lice from salmon farms and suffer increased mortality soon after leaving the coast. The results from this long-term study indicate that returns of wild adult salmon can be reduced by more than 50% in years following high lice levels on nearby salmon farms during the smolt out-migration. To quote from the authors 'We find that the predicted 50% reduction in 1SW salmon returns following a high lice year is greater than the average year-to-year variation attributable to environmental effects'. Modelled lice impact levels and a fitted stock-recruitment relationship were used to estimate how annual returns of Erriff salmon might have looked over the last 30 years in the absence of a serious impact of sea lice from aquaculture. He noted that the results suggest that Erriff salmon returns could now be twice as large without the observed anthropogenic lice impacts, but would probably show a similar long-term decline.

Bill Hicks (Salmon and Trout Conservation UK): Indicated that his concern is that the Scottish Government has not put in place the legislative framework necessary to protect wild fish from sea lice emanating from salmon farms. He wished to ask two questions about two obvious deficiencies. He noted that in answer to the Review Group's questions (CNL(17)20 page 10) relating to the protection of wild fish from sea lice, Scotland relies on the 2007 Act as amended by the 2013 Act and the April 2017 policy on the regulation of sea lice pursuant to those Acts. That policy states that persistent levels of eight sea lice per fish may lead to enforcement action. However, the Scottish Government's position is that those Acts cannot be used for the purpose of protecting wild fish. That has been made clear on a number of occasions. Their view is that those Acts and, therefore the new policy, can only be used for the protection of the health of the farmed fish. It has nothing to do with the protection of wild fish. He indicated that there is, therefore, no clear legislative framework which would enable the Scottish Government to take enforcement action against fish farms for the purpose of protecting wild salmon. His first question was, therefore, in two parts as follows:

- Will the Scottish Government representatives please confirm that, in their view, the 2007 and 2013 Acts and their new Policy cannot be used for the purpose of protecting wild fish?

- Will they as a matter of urgency start taking steps to put in place a clear statutory framework to enable them to take action, if necessary, to protect wild fish from fish farms?

He indicated that his second question related to a different point. At the moment, unlike in most NASCO countries, sea lice figures for individual farms are not made public in Scotland. Records for individual farms have to be kept, but in the published data they are hidden in area averages. He suggested that there is no justification for not making the individual figures public and it could easily be done without delay as no new primary legislation would be needed. The only purpose of keeping individual figures secret can be to protect farmers with a poor lice record from public scrutiny and embarrassment. He asked the following question:

- Will the Scottish Government representatives take steps to require individual farm lice figures be made public? And if not why not?

Mike Palmer (European Union - UK (Scotland): indicated that firstly, Marine Scotland disagreed with the charge that the Scottish policy position unduly favoured the aquaculture sector. He pointed to the joint ministerial statement on aquaculture published by Scottish ministers in March 2017 and the Scottish Government position, expressed therein, of maintaining a rounded and balanced view which recognised both the economic importance of aquaculture and the need to protect wild salmon within a context of environmental sustainability. The Scottish Government was pursuing both these goals and did not see them as mutually exclusive. On the eight lice per fish question, he said that this was the wrong number to focus on. The Scottish Government's sea lice enforcement policy starts at 0.5 lice per fish as the trigger for starting treatment and then at three lice per fish for agreeing actions required to bring numbers back down again. The number of eight lice per fish is an upper limit which the Scottish Government and the aquaculture sector would hope to avoid given the actions taken at lower levels. It acts as an extreme reference point for the requirement to take welfare action on the fish. With regard to legislation, he noted that Marine Scotland had a commitment to introduce wild fisheries legislation for the current Parliamentary session. If any stakeholder wished to make a proposal for what it should contain they were at liberty to do so. Finally, on farm level lice reporting, he explained that Marine Scotland took a partnership collaborative approach with the sector, which had seen improvements in levels of reporting. Marine Scotland wanted to continue to work with industry to see how much further reporting arrangements could be developed, rather than imposing measures on the sector. Public reporting was now disaggregated across thirty areas and Marine Scotland had made it clear that if current levels of reporting were not deemed to be sufficient it reserved the right to take stock of the arrangements and move to more fine-grained reporting requirements. He indicated that this would be part of the review of the reporting policy to which Marine Scotland is committed.

Nigel Milner (Institute of Fisheries Management): referred to the River Tyne which has the largest rod fishery for salmon in England and Wales following natural recovery of the stock as a result of improvements in water quality in the river. He noted that there is also a hatchery programme with stocking at two to three times the mitigation level. He asked, given the risks associated with stocking identified during the Theme-based Special Session, if the Environment Agency would comment on this programme and the risks to wild stocks and consider following the excellent policy regarding stocking in Wales.

Lawrence Talks (European Union - UK (England and Wales): replied that the Environment Agency stock salmon into the River Tyne to mitigate for the loss of spawning habitat in the River Tyne catchment due to Kielder reservoir, which is one of the largest manmade lakes in Europe. This is an obligation set out under Schedule 1 of the Northumbrian Water Transfer Scheme and is paid for by Northumbria Water. The number of juvenile salmon stocked into the River Tyne has been reduced over recent years and is now 390,000 juvenile salmon (2016).

He noted that the stocking programme follows guidelines including factorial mating, with offspring being returned close to the same locations as the adult fish were captured; stocking is focussed on areas with lower than optimum salmon densities; and more recently precocious parr have formed a component of the broodstock as would be the case in a fully natural environment. He indicated that in terms of risks, there have been no measured or observed detrimental impacts of the hatchery stocking, which has taken place since 1978. Further, over this period, salmon stocks on the River Tyne have improved dramatically and the river is now the most productive salmon fishery in England. Although this improvement is in a large part due to water quality improvements and better regulation since the 1960s, the Environment Agency supports the work of the Kielder Salmon Centre, which is seen as an asset to rural Northumberland, providing a focus for salmon and wider environmental education. The Kielder Salmon Centre also provides fish for research. He indicated that in the light of Natural Resources Wales' revised stocking policy, the Environment Agency reviewed its stocking Operational Instruction in 2015 in consultation with the England Fisheries Group. This resulted in a decision to no longer permit salmon stocking into SSSI and SAC rivers where salmon are a feature of interest. Further, salmon from the Kielder Salmon Centre are now only stocked into the Tyne catchment and are no longer stocked to other rivers. He noted that to conserve and enhance River Tyne salmon stocks, in addition to stocking, the Environment Agency works with a wide range of partners to improve catchment conditions for salmon, which has included, for example, the construction of a fish pass on Hexham Weir.

Siegfried Darschnik (Der Atlantische Lachs): asked three questions in relation to the report for Germany. First, does prioritising supplying all programme waters sufficiently with young-of-the-year salmon, using foreign imported genetic material over import independence, represent the renunciation of the prime goal of establishing a particular, locally adapted strain of wild and breeding salmon from returning adult fish and finally the renunciation to establish an indigenous, self sustaining salmon population in North Rhine Westphalia Rhine tributaries? Also how is the term 'sufficiently' to be seen in this context i.e. sufficient for what purpose? Second, does the use of the domesticated ranching Gudena strain, well adapted to handling, artificial propagation and rearing represent the implementation of the new strategy and is there the expectation to get a sufficient number of returning adults to establish a ranching scheme comparable to the Gudena? Third, why is it that only Baden Wuerttemberg recognizes smolt predation by cormorants as a serious threat to the establishment of a salmon population. If this conviction is not shared by the other federal states, namely North-Rhine-Westphalia and the ICPR, why have our questions on last year's EU-Germany report, concerning this crucial issue, not been answered in any factual way? What other reasons do you recognise and what is their proportionate contribution to the near 100% loss of downstream migrating smolts leading to the absolute discrepancy between the number of smolt equivalents produced by stocking and natural reproduction given in your table in Annex 3 and the catastrophically low number of returning adults?

Stamatis Varsamos (European Union): thanked Mr Darschnik for his intervention but noted that a similar intervention had been made at the 2016 Annual Meeting and he had nothing further to add to the response given at that time.

Steve Sutton (Atlantic Salmon Federation): indicated that he wished to address a question to the United States about the Canadian APR and Canada's response to the question about the Grieg aquaculture proposal in Placentia Bay, Newfoundland. He noted that the Review Group had asked the following question to Canada: 'The North American Commission Protocols for the Introduction and Transfer of Salmonids appended to the Williamsburg Resolution state

that: 'Reproductively viable strains of Atlantic salmon of European origin, including Icelandic origin, are not to be released or used in aquaculture in the North American Commission Area'. With regard to the approval of the Placentia Bay aquaculture project, can triploid rates of 100% be assured?' He noted that the answer provided by DFO indicates that triploidy success rate may be as low as 99%, and that demonstrating 100% efficacy is not possible. Likewise, the environmental assessment for the project recognises that despite the use of triploidy, some risk of genetic introgression remains because some of the fish grown in the sea cages will be reproductively viable. Given this, he asked if the United States considers that the project is consistent with the Williamsburg Resolution and, if so, what is the rational for that conclusion?

Dan Morris (United States of America): responded that Canada has reached out to the United States to discuss the proposed Placentia Bay aquaculture project and the United States appreciates Canada's efforts to date to provide information about it. He indicated that the United States is following this project closely to understand the risks involved and because the triploid technology may hold promise, and the techniques may find their way into proposals from industry in the United States at some point in the future. The United States views NASCO as an important venue for information exchange particularly in relation to novel approaches and technologies that may be applied to common challenges faced by the international community. He indicated that he would not provide a legal opinion on the Williamsburg Resolution and suggested that questions about the Placentia Bay proposal be directed to Canada.