CNL(14)54

Written responses from the Parties/jurisdictions to the questions raised by the Implementation Plan/Annual Progress Report Review Group

Canada

1. *Since the status of MSW salmon stocks is currently of particular concern, what measures (Action F1) were introduced in 2013 or are planned to further regulate their exploitation?*

   Canada's management of wild Atlantic salmon is reviewed annually based on the most up to date science advice taking into account input from stakeholders. As such, management measures for 2015 will address any information related to the conservation of MSW stocks.

2. *What is the anticipated timescale of activities under Action H3 and how is this expected to assist salmon conservation and management?*

   Each of the activities under H3 will undergo differing timelines as each represent differing activities.

   Regarding "entering into agreements with other federal departments…" some of this work is being reviewed through internal and external working groups. Timelines vary as per the specific work identified. Work is ongoing to identify opportunities for entering into agreements with other departments, including the provinces/territories and stakeholders, which will in turn develop timelines for implementation.

   Regarding timelines for reporting to Parliament, reports are tabled annually.

   The Multi-Agency Wild Atlantic Salmon Habitat Reporting Working Group reports in three-year cycles.

3. *The Implementation Plan for Canada provided no baseline information on current levels of sea lice or containment in salmon farms. How will progress towards NASCO's international goals for sea lice and containment be assessed and how will the findings be shared with the international community? The Review Group notes that Action A1 relates to new sea lice control measures.*

   Canada's Implementation Plan, developed in 2012 for the period 2013-2018, contains a commitment to the implementation and improvement of current sea lice and containment management tools which could possibly include such elements as legislation, regulation, policy, standards, monitoring and reporting.

   Within Canada, constitutional jurisdiction for the management of sea lice and containment within aquaculture operations is a provincial responsibility. These possible tools will support ensuring that participants, including industry and governments, act in a coordinated manner (i.e. across these multiple jurisdictions) that, using a risk and evidence-based approach, addresses impacts to wild fish populations.

As is evident in the 2014 Progress Report (and as also noted by the Review Group), a number of federal and provincial initiatives are underway that should result in further information being reported on both sea lice and containment management in future Annual Progress Reports.

In addition to these actions, as stated in Canada's Implementation Plan, Canada remains committed to the objectives of SLG(09)5 (Guidelines on Best Management Practices to address impacts of sea lice and escaped farmed salmon on wild salmon stocks).

As is the case with all other NASCO Parties, progress in meeting actions stated in Canada's Implementation Plan will continue to be made available to the international community through annual NASCO reporting cycles.

4. *In summary, what was the outcome of the risk assessment conducted prior to approval being granted for the commercial rearing of growth enhanced transgenic salmon and were the NASCO Guidelines for Action on Transgenic Salmonids, CNL(04)41 followed (Action A4)?*

On April 30, 2013, AquaBounty Canada Inc. submitted a regulatory package to Environment Canada (EC) under the *New Substances Notification Regulations (Organisms)* [NSNR (Organisms)] of the *Canadian Environmental Protection Act, 1999* (CEPA 1999) for the AquAdvantage® Salmon (AAS).

Fisheries and Oceans Canada (DFO) conducted an environmental and indirect human health risk assessment of AAS to support a regulatory decision by the Minister of the Environment and to underpin recommendations on measures necessary to manage risk. The risk assessment determined the likelihood that a harmful effect would be realized (the risk) based on the exposure and hazard assessments. Uncertainty associated with each element of the risk assessment is reported and was considered when drawing conclusions on the risk assessment and recommending measures to manage risk.

The assessment concludes with reasonable certainty that the likelihood of AAS exposure to the Canadian environment is negligible.

AquaBounty provided well-defined parameters for the scope of their proposed activities in PEI and Panama, including the conditions under which AAS eggs will be produced, transported, and grown-out. Proposed containment measures (physical, biological, and geographical containment) at the PEI and Panamanian facilities were assessed, and determined to result in a negligible likelihood of entry into the Canadian environment.

Based on the containment conditions and use scenario proposed by AquaBounty in its regulatory submission, the assessment concludes that AAS is manufactured at a location where AquaBounty is able to contain AAS in a manner that satisfactorily protects the Canadian environment and human health.

<u>Indirect Human Health Risk</u>

The assessment concludes with reasonable certainty that the risk to human health in Canada as a consequence of environmental exposure is low. This conclusion was based on the finding that the likelihood of exposure of AAS to the Canadian environment was

negligible with reasonable certainty and the finding that the hazards to human health associated with AAS as a consequence of environmental exposure were low with reasonable certainty.

Environmental Risk

The assessment concludes with reasonable certainty that the risk to the Canadian environment is low. This conclusion was based on the finding that the likelihood of exposure of AAS to the Canadian environment was negligible with reasonable certainty and the finding that the hazard to the environment was high with reasonable uncertainty.

The emphasis placed on containment to prevent exposure makes it imperative that the use scenario proposed by AquaBounty be maintained. This includes all physical, biological, geographical, and operational containment measures. Therefore, any activities outside of the well-defined parameters that have been described in the regulatory submission may be considered a significant new activity and could require a Significant New Activity (SNAc) notification.

Based on the scope of the use scenario specified by AquaBounty in its regulatory submission and the outcome of DFO's risk assessment, in accordance with the DFO/EC/Health Canada Memorandum of Understanding, DFO offered the following recommendations to EC with respect to a Significant New Activity notice:

A Significant New Activity in relation to AAS could include any activity other than the following:

1. Commercial production at the AquaBounty Canada facility in PEI, as described in AquaBounty's notification, of hemizygous triploid female Atlantic salmon eyed-eggs bearing the opAFP-GHc2 construct at the EO-1α locus using milt from homozygous masculinized AAS females (neomales) and eggs from non-transgenic Atlantic salmon females that are derived from the domesticated St. John River strain.
2. Physical containment of all life-stages of AAS at the PEI facility and at the AquaBounty Panama facility that are under the singular and direct control of AquaBounty Technologies, and while in transport between the two facilities in the effective manner described in AquaBounty's notification.
3. Biological containment as described in AquaBounty's regulatory submission.

The Environmental and Indirect Human Health Risk Assessment of AquAdvantage® Salmon has undergone a National Peer Review Process that culminated with a Science Response Meeting, held in Ottawa from July 17 to 19, 2013, to solicit expert opinion on conclusions presented in DFO's comprehensive draft risk assessment. The conclusions reached in consensus at that meeting were incorporated into the current risk assessment (see http://www.dfo-mpo.gc.ca/csas-sccs/Publications/ScR-RS/2013/2013_023-eng.html).

Denmark (in respect of the Faroe Islands and Greenland) – Faroe Islands

1. *How do the veterinary authorities assess whether or not there is an issue in relation to sea lice and containment that would require enforcement action e.g. have thresholds been established for sea lice treatment?*

   The veterinary authorities conduct regular inspection of all salmon farms in the Faroes. There have been established thresholds for level of sea lice, and should any salmon farm exceed this level appropriate measures will immediately be taken.

2. *The Implementation Plan for the Faroe Islands provided no baseline information on current levels of sea lice or containment in salmon farms. How will progress towards NASCO's international goals for sea lice and containment be assessed and how will the findings be shared with the international community? The Review Group notes that Action A1 relates to new sea lice control measures.*

   There are regulatory measures in places in the Faroes to combat potential sea lice in salmon farms, and these measures are executed by the veterinary authorities as described in (1).

Denmark (in respect of the Faroe Islands and Greenland) – Greenland

1. *Do the new reporting requirements that include provision of effort data apply to both licensed and unlicensed fishermen (Action F1)?*

   Yes, the reporting requirements apply for all that fish – licensed and unlicensed.

2. *What biological data are taken into account in decisions concerning the quota to be set for factory landings and how does this influence the decision on the level of quota to be set (Action F2)?*

   The Government of Greenland is always informed of the scientific advice from ICES, however, the main focus is on the livelihood of Greenlandic population. The salmon fishery in Greenland is a subsistence fishery and the quota is mainly set from an estimate of the need of the population.

3. *Will baseline data on the status of salmon in the Kapisillit River be collected in support of the protection plan? Given the development of the protection plan for the Kapisillit River, what additional protection will be delivered by the possible inclusion of salmon in the broader biodiversity strategy for Greenland (Action H1)?*

   The Ministry of Environment and Nature is currently expecting a report pointing out the areas in Greenland that require conservation plans in order to protect the biodiversity of Greenland. The next step is for the Ministry of Environment and Nature to start working on a strategy for the biodiversity, this will be done in collaboration with the Ministry of Fisheries, Hunting and Agriculture and the Greenland Institute of Natural Resources. Whether there will be further scientific collection and which protection measures will be imposed has not yet been decided. The strategy is still in the first phase of development and the Ministry of Environment and Nature has the lead on this – the Ministry of

Fisheries, Hunting and Agriculture has not been involved yet. But will be involved in the next phase both concerning the protection of the Kapisillit salmon and other animal species such as birds and sea mammals.

European Union – Denmark

1. *What work was undertaken in relation to the control of cormorants (Action F1) and evaluation of by-catch in 2013 (Action F2)?*

   Action F1: With reference to guidelines (Great Cormorant Applying derogations under Article 9 of the Birds Directive 2009/147/EC) it is now allowed to shoot cormorant in Danish running waters to protect salmonids (brown trout, salmon and grayling).

   Action F2: The project continues in 2014 and there is no report of the results yet.

2. *What is the proposed timescale for developing more reliable stock reference points (Action F3)?*

   Action F3: The new revised management plan for salmon in Denmark is under progress but not yet finalized and published; the last is expected in 2014/15. It should be possible to have reference points for salmon in river Skjern Å. The last three rivers depend on the results in 2014, see Action H3.

3. *What progress was made in 2013 on each of the three actions related to habitat protection and restoration (Actions H1 – H3)?*

   Actions H1: The monitoring of the spawning run in all four rivers with wild salmon (river Skjern Å, Storå, Varde Å and Ribe Å) continues as usual.

   Action H2: The monitoring programme on parr of wild salmon continues.

   Action H3: The original and present spawning and grow-up areas for wild salmon (present in river Skjern Å) shall be estimated in 2014 in rivers Storå, Ribe Å and Varde Å; and rivers Sneum Å, Konge Å, Brede Å and Varde Å in the later years (in these four rivers the original salmon has disappeared but F1 stockings with parr from river Skjern Å take place.

European Union – Finland

1. *What is the process for determining the new regulations for the river Teno with Norway and how is it anticipated that this will change the management regime to facilitate stock rebuilding (Action F1)?*

   The negotiations for a new regulation are ongoing between Finland and Norway: they started in 2012 and the new regulation is anticipated to be in force in 2016. The aim of the new management regime for the mixed-stock fishery is to reduce fishing mortality, and especially facilitate stock re-building of populations with the least favorable stock status.

2. *What is the current status of stocks in the five tributaries of the Teno River for which compliance with spawning targets is currently assessed and what is the timescale and approach for assessing compliance in the other tributaries and main stem for which spawning targets will be set in 2014?*

   The current status of the five Norwegian tributary stocks indicates no compliance with the spawning targets, although there is some improvement in status over recent years. New spawning targets have been established for most of the sub-populations in 2014, and preliminary assessment of two Finnish tributary populations indicate compliance with targets in the past couple of years. Approaches for assessing compliance in other populations are under development, but resources are limited for establishing new monitoring facilities in the Teno system.

3. *The APR indicates that catch and release is not applicable in Finland. Does this mean it is not practised even though the need to reduce fishing mortality is highlighted and, if so, are there plans to promote it as part of a stock rebuilding effort?*

   Catch and release is practiced today on a small-scale only and on a voluntary basis. C/R or selective fishing (e.g. mandatory release of large female salmon late in the season) is considered as one management measure in future stock rebuilding.

4. *The APR refers to monitoring for escaped farmed salmon. What has this monitoring shown and is there an ongoing dialogue with Norway concerning containment measures (Action A2)?*

   Annual monitoring during the fishing season has indicated that the number of escapees in catches is very low, typically less than 0.5%. There is an ongoing dialogue with Norway concerning the monitoring of the occurrence of escaped farmed salmon in the Teno system.

5. *The APR focuses on the Teno River (Actions F1 and F2). Are there similar initiatives to develop new regulations and spawning targets for the Naatamo River and, if so, what is the timescale?*

   As described in the IP, new regulations will be developed for the Näätämö RIver after the Teno regulations have been completed. At the moment, there is voluntary co-operation between fishing right owners in Finland and Norway, and voluntary reductions to fishing times have been applied within the framework of the current agreement on the Näätämö River salmon fishing.

European Union – Germany

1. *No estimate of unreported catches has been provided but Action F1 refers to illegal catches. Are these illegal catches reported and included in the reported statistics and, if not, is an estimate available of the extent of such catches?*

   There are no reliable figures available about the extent of unreported and illegal salmon catches in the German Rhine catchment. It is expected that salmon sometimes is caught illegally by anglers, but there are very different opinions about the significance of these

illegal catches. The targeted catch of salmon in the Rhine river by angling is actually very unlikely. Professional and recreational net fishing on salmon is supposed to be a significant problem in the Dutch part of the Rhine and the Rhine estuary. For Germany I only have got an estimation from Baden-Wuertemberg for caught salmon by angling in 2012 about 20 salmon. I think this figure is insignificant for NASCO reporting. Overall there are no reliable estimates on unreported and illegal catches for the German Rhine catchment available.

2. *Given that the APR indicates that control of illegal harvests and by-catch is only possible in areas where fishing has been banned, are there plans to introduce bans in other areas to safeguard salmon (Action F1)?*

   Salmon is a protected species throughout the catchment area of the Rhine in Germany. Compliance with the salmon fishing ban is strictly monitored due to river police and volunteer fisheries inspectors. Because predator fishing e.g. for perch, pike perch or catfish is allowed in the Rhine river during the salmon run the monitoring of the salmon fishing ban is difficult. As mentioned above the targeted catch of salmon in the Rhine is very unlikely, but at some locations e.g. around the mouths of some special Rhine tributaries or below obstacles the probability increases to catch salmon during the salmon run. In such areas of the Rhine the introduction of general fishing ban areas is intended as precautionary measure to safeguard salmon. It is possible that further fishing ban areas are implemented in the future.

3. *Reference is made to the development of a self-sustaining salmon population in the Agger River without stocking and verification of the successful restoration of the salmon population. What criteria will be used to assess the success of the restoration programme (Action F2)?*

   According to Action 2 the main criterion to assess the success of the restoration programme is the reproductive success of naturally spawned salmon. A standardized method[1] to estimate salmon fry abundance based on utilization of point-abundance electrofishing is applied to this aim. The method was developed specially for North Rhine-Westphalia salmon project rivers. The measure is accompanied by the Institute of Fisheries Ecology of the Ministry for Climate Protection, Environment, Agriculture, Nature Conservation and Consumer Protection of the German State of North Rhine-Westphalia. Other criteria can also be relevant, but the main criterion for verification the restoration success in the specific project waters is the practical analyses and assessment of natural reproduction of salmon.

   [1] *Nemitz A., Molls F., Steinmann I. & Freyhof J. (1999), Standardisierung von Elektrobefischungen* zur Überprüfung der Effizienz von Lachsbesatzmaßnahmen in NRW – Unveröffentlichte Studie im Auftrag der LÖBF / LAfAO Nordrhein-Westfalen, 35 S. (unpublished paper / only in German)

European Union – Ireland

1. *The APR indicates that there were improvements in the compliance with treatment target levels sea lice for all salmon age groups, areas and months in 2013 compared to 2011 and 2012 but compliance in 2013 was not 100 % (Actions H2 and A2). What proportion of farms failed to meet targets levels and what actions are taken when targets are not met?*

   Over 91% of Atlantic salmon samples and all of rainbow trout samples were below the Treatment Trigger Levels (TTL) as outlined in the Monitoring Protocol No.3 for Offshore Finfish Farms – Sea Lice Monitoring and Control, Department of Marine and Natural Resources (2000). All of the 109 inspections carried out on salmon smolts were below the TTL, 82% of the 102 inspections carried out on one-sea-winter salmon were below TTL and the one inspection to two-sea-winter salmon was above TTL.

   This information is published in the National Survey Of Sea Lice (*Lepeophtheirus salmonis* Krøyer and *Caligus elongatus* Nordmann) On Fish Farms In Ireland – 2013 (Irish Fisheries Bulletin No. 44, 29 pages. February 2014). This report can be downloaded from the Marine Institute website www.marine.ie.

   When lice levels above the Treatment Trigger Level are recorded at an offshore salmon farm a notice to treat is issued to the operator by the Marine Institute. If the initial treatment is not successful in reducing lice infestations to the required level a second notice to treat is issued, if the subsequent treatment does not result in reduction of lice infestation to the desired level the management cell process is invoked. The details of the process are set out in the Strategy for Improved Pest Control on Irish Salmon Farms, May 2008 (DAFF).

   Five Management Cells were put in place in 2012. Follow-up actions included sustained treatments, early fallowing and accelerated harvest.

   Four Management Cells were convened in 2013. Follow-up actions included sustained treatments, early fallowing and accelerated harvest.

2. *The APR states that there were no significant outbreaks of diseases in aquaculture facilities in 2013. What is the definition of a significant outbreak and does this relate to the prevalence or severity of the disease (Action A3)?*

   The approach taken to defining ‘significant’ or ‘increased’ mortality is guided by the definition outlined in Council Directive 2006/88/EC. In that context, ‘significant’ mortalities are deemed to be losses that are significantly above the level of what is considered to be normal for the farm in question under prevailing conditions. In that context, despite the fact that certain sites would have had mortalities due to Pancreas Disease and a certain degree of Amoebic Gill Disease in 2013, these were within the realm of what could be expected for these sites under prevailing conditions.

European Union – Spain (Asturias)

1. *The answer to question 2.2 suggests that there is 100% catch and release in the in-river fisheries; if this is the case why is there a reported catch?*

   In 2013 the fishing period lasted from 1 May until 31 July, with an obligation for 100% catch and release from 15 to 31 July.

2. *Action F1 suggests that poaching occurs; an estimate of unreported catch would, therefore, be expected.*

   There are no quantitative data allowing an estimate of unreported catches but the information available suggests that poaching does not occur frequently.

3. *What action is being taken to address the concerns about climate change and what were the findings of the population census (Action H2)?*

   There are no special measures in this regard, except the communication to the fishermen about the situation of the stocks.

4. *What is the anticipated timescale for developing the inventory of obstructions and what action will be taken to address them (Action H3)?*

   Despite the fact that there is an updated inventory of obstructions and fish passages, an annual monitoring is done. In addition, the fish passages can become clogged and should be cleaned.

5. *The Implementation Plan for Asturias provided no details of measures to prevent the introduction of the parasite G. salaris. A brief summary of the measures in place would be welcome.*

   This does not seem to be an issue for Asturias, where neither fish nor fish eggs have been imported for 20 years.

European Union – Spain (Cantabria)

1. *What is the proposed timescale for developing conservation limits for Cantabrian salmon stocks and how are fisheries managed in their absence (Action F3)?*

   It is expected that CLs will be established in all rivers in the future management plan that have a planned deadline at 2018 (as IP describes).

   Based on marked (DCWT) stocked salmon and electrofishing in autumn combined with annual catches and redd counting the total spawning run is estimated every year, and an estimate of the number of spawners is calculated. Both the number of wild salmon from natural spawning and spawners from stocked fish are calculated. Then TACs (Total Allowable Catch) are set for each particular river. TACs for 2014 are as follows:

   - River Asón: 25 (+5) fish.*
   - River Pas: 20 fish.

- River Nansa: 15 (+5) fish.*
- River Deva: 20 fish.

(*) TAC is increased by 5 fish if 50% of the original quota was angled by 1 June.

Angling is not allowed in River Agüera, River Saja-Besaya and River Miera.

2. *What are the timescales for the commencing the proposed actions to improve fish passage (Action H1), undertake research on the impacts of hydropower (Action H2), provide appropriate river flows (Action H3) and develop integrated catchment management (Action H4)?*

   Actions H1 and H2 will commence this year. Actions H3 and H4 will do in 2016.

3. *Is the annual report on status of salmon stocks and fisheries made available to the ICES Working Group on North Atlantic Salmon?*

   Salmon stocks and fisheries annual reports are available upon request, but have not been transmitted to ICES so far.

4. *What is the proposed timescale for the regulation of stocking in Cantabrian rivers and will it conform to NASCO guidance on stocking (Action A1)?*

   This action has just started and is expected that it will be finished in 2017.

5. *The Implementation Plan for Cantabria provided no details of measures to prevent the introduction of the parasite G. salaris. A brief summary of the measures in place would be welcome.*

   Salmon is farmed purely for restocking purposes and hatcheries operate only with fish of local origin for stocking. *Gyrodactylus salaris* has not been detected in Cantabrian waters to date.

European Union – Spain (Galicia)

1. *What are the timescales for commencing the proposed actions to develop conservation limits (F1), develop fishing rules and undertake research in the River Miño (F2) and develop criteria for management of riparian vegetation (H1)?*

   No estimates are unfortunately possible at this stage, pending any decision on future budget.

2. *How are fisheries managed in the absence of conservation limits and the fishing rules referred to in question 4 above?*

   An old progressive scheme is still being used, where TACs are fixed from a total ban, when the habitat occupation/population levels fall under 5% of the optimum to a 25% exploitation level, when the 75% of the optimum is reached. Over this population level no TAC is fixed, as 25% seemed to be the average exploitation level in Spanish rivers in

the 1950-1970's, based on available data. This scheme applies to rivers Ulla, Lérez and Masma, with TACs based on the 10% of their runs, as population levels lie on the 5-15% range. Rivers Eo and Miño have no TACs fixed, as they are border rivers and interregional or international agreements are needed. Salmon fishing is banned in the rest of the rivers with the exception of river Mandeo, where a 5 fish quota is allowed in order to maintain local interest on the species.

3. *Are there any plans to develop estimates of unreported catch and the extent of catch and release?*

   A better knowledge of adult numbers at different stages is needed. Data are unavailable at the moment. Declaration of salmon caught and released is not mandatory at the moment.

4. *Do the stocking programmes in the A Coruña province conform to the NASCO guidance on stocking (Action F4)?*

   Yes. Only fish of local origin have been/will be used. River Sor was stocked with parr of Cantabrian parenthood (river Eo's were the closest available at the moment) and parr of southwest origin were used in river Anllóns (from adults from Ulla and Tambre rivers). Genetic assessment was used for decision making. Neither of these rivers had Atlantic salmon populations from a long time ago.

5. *The reference to the development of a 'cover index' in Action H1 is unclear and clarification would be welcome?*

   Sorry, the correct term should be "canopy index". The development of this index will be helpful in decision-making for a correct management of riparian vegetation.

6. *What actions are being taken under the EU-WFD to protect and restore salmon habitat (Action H2)?*

   The main action consists in the improvement of water quality by the correct management of waste-water and building of new treatment plants or upgrading older ones.

7. *What data on sea lice levels or containment are being collected at the experimental fish farm and how will they be taken into account in the evaluation of the project?*

   There are no reports on abnormal sea lice levels in local sea trout fisheries. No information is available for the only experimental cages present in our coastal waters.

8. *The Implementation Plan for Galicia provided no details of measures to prevent the introduction of the parasite G. salaris. A brief summary of the measures in place would be welcome.*

   G. salaris has not been reported in Galician rivers, with a water temperature range that may be unavailable for the species.

European Union – Sweden

1. *The APR refers to a reduction in landings of MSW salmon in 2013. Is this because of declining abundance or the effect of management measures? Are any additional measures planned to protect MSW salmon in addition to the introduction of a two fish bag limit in 2014 (Action F1)?*

- The summer 2013 was warm with little rain and resulted in both high water temperature in the rivers and a low water flow. It resulted in a late salmon run and also a low possibility to catch salmon in the rivers because of high water temperatures.
- In 2013 work started to implement new management measures to reduce catches of salmon both in the rivers and in the sea. This work had an effect on the rules for the fisheries in many rivers and was decided by the fishing rights-owners and sport fishing organisations. This work also seems to have had an effect on the reported commercial catches of salmon in the coastal fisheries.
- Since March 2014 gill netting for salmon at depths > 3 m is forbidden. This regulation will protect both MSW and 1SW salmon.
- In 2015 new fishing rules are planned to be implemented in the river to protect the salmon stocks.

2. *Why does the ban on gill netting for salmon only apply at depths >3m in coastal waters and how will exploitation of mixed stocks in gill net fisheries in waters < 3m be controlled (Action F2)?*

- Mixed stocks mainly occurs in coastal water at depths > 3 m. In coastal water at depths < 3 m the stocks normally are separated.
- Fisheries will be controlled by the country administration and the coast guard.

3. *The stated objective is to phase out mixed-stock fisheries on wild salmon in reared rivers and mixed stock fisheries on the coast. How will these objective be achieved given that a gill-net fishery at depths < 3 m will still be in place along the coast (Action F2)?*

- Mixed stocks mainly occurs in coastal water at depths > 3 m. In coastal water at depths < 3 m the stocks normally are separated.
- In water < 3 m the fishermen only is allowed to use 180 m gill nets and only between May to September. Between kl 10.00 – 16.00 it is not allowed to use gill nets at depths < 3 m.
- In coastal areas near salmon rivers emptying in the sea there are large protected areas. Gill netting is not allowed at all in these areas.

4. *Are there plans to treat rivers infected whith the parasite G. salaris ore are there other measures planned to prevent its spread (Action A1)?*

- There are no plans to treat infected rivers. Swedish rivers have many species of fish and normally many large lakes. The impact on the ecosystem when using rotenone in order to kill all fish species is very large.

- Infestation of *Gyrodactylus salaris* on salmon was for the first time investigated in some of the rivers on the Swedish West coast in 1989. *Gyrodactylus salaris* was documented in a fish farm in river Lagan and in river Säveån, a tributary to River Göta älv.
- A monitoring programme started in the early 1990. An increase in infected rivers was thereafter noticed especially in rivers on the southern part of the Swedish West coast probably partly as a result of the expanding monitoring programme and also partly due to infection in new rivers.
- In order to prevent infestation in new rivers was restricted regulation introduced in fish farming, fish transports and stocking in two steps, 1999 and 2003.
- The last infected river was river Himleån in 2005.
- All rivers emptying north of river Göta älv are free from the parasite.

European Union – UK (England and Wales)

1. *Are any interim measures for the North-East coast beach net fishery being considered (prior to the review in 2017) in light of the increased catch in 2013? (Action F3)*

   Yes: the Environment Agency is investigating the possibility of using quotas and/or effort controls to cap salmon catches in the North East fishery.

2. *Of the 1,300 cross-compliance inspections referred to in the APR, how many resulted in prosecutions and were remedial actions required? (Action H4)*

   Firstly, to note that cross-compliance inspections undertaken in 2013 were among several thousand inspections carried out on farms across England and Wales by various agencies to ensure compliance with legislation, agri-environment scheme conditions, and so on.

   Secondly, it is necessary to explain how cross-compliance works. Where breaches are found, prosecution may not be the first option as these schemes are based around good practice rather than compliance with minimum legislative standards. The penalties consist of reductions in Single Payment Scheme payments, and the level of penalty depends on, for example, the severity of the breach and whether it is deemed to be negligent or intentional.

   In 2013, 414 such penalties were applied by the Rural Payments Agency following cross-compliance inspections in England.

   It has not been possible to separate out the penalties applied by Rural Payments Wales from those applied following inspection by other Welsh agencies. However we can confirm that 298 penalties were applied in total across Wales in 2013.

   In terms of remedial action, where repeat offences are detected, i.e. appropriate remedial action has not been taken, this will be factored in to the level of the penalty applied.

   If a breach relates to a regulatory non-compliance then the relevant enforcement bodies, including the Environment Agency and Natural Resources Wales, who manage salmon stocks in England and Wales respectively, will consider whether enforcement action,

under the appropriate legislation, may be required – so this is the point at which prosecution may occur.

We are unable to provide a figure for prosecutions following cross-compliance inspections as any such prosecutions are not necessarily solely a result of the cross-compliance inspections having taken place.

3. *How is the 'check, clean, dry' campaign promoted?*

The campaign is promoted through the GB Non-native Species Secretariat, specifically through its website which can be found at: http://www.nonnativespecies.org/checkcleandry/index.cfm. The web page contains information about the campaign including videos on, for example, biosecurity for anglers and boat owners, together with downloadable posters and other resources which are used by fishery owners and angling clubs.

Water users are also sign-posted to the campaign in, for example, press releases and at 'at risk' sites (for example at Grafham Water following the discovery of the 'killer shrimp' (*Dikerogammarus villosus*).

The Environment Agency is a partner organisation to the GB Non-native Species Secretariat, and promotes the campaign and a wider programme of better biosecurity amongst its own staff. Every Area has a biosecurity champion, the Agency uses a range of communications tools, such as e-learning, toolbox talks, workshops, to advise people about improving biosecurity.

European Union – UK (Northern Ireland)

1. What is the proportion of salmon that are released following capture by angling in the Loughs Agency area (Action F3)?

No data is available for 2013 but the figure in 2012 was 60% catch and release for salmon caught in the Loughs Agency area.

2. The APR (Action H3) refers to 'NASCO fishing data' and its use in the formulation of programmes of measures under the Water Framework Directive. What data does this refer to?

This is semi-quantitative and fully quantitative electrofishing survey data collected at monitoring sites on salmon rivers. This information is then used to identify areas for possible further more detailed investigation and which may result in identifying habitat, fish passage or water quality improvements / work to improve stocks levels. These will then become specific measures to help NI meet WFD objectives.

European Union – UK (Scotland)

- Acknowledge and take on board the comments from the Review Group around process. Those comments will allow Scotland to improve the reporting in 2015.

- Can reassure the Group that the approach adopted was designed to maximise the value and importance of the Implementation Plan as an on-going accountable programme of activity.

Norway

1. *What is the process for determining the new regulations for the river Tana with Finland and how is it anticipated that this would change the management regime to facilitate stock rebuilding (Action F4)?*

   Norway and Finland have, for the last two years, been negotiating a new agreement aiming at securing a sustainable fishery on salmon stocks in the River Tana. The present stock status calls for a considerable reduction in fishing mortality. An essential part of the negotiations is to establish a stock recovery plan. This plan will be in line with NASCO's guidelines. The negotiations are demanding, but hopefully the main conclusions will be clarified before the end of June this year.

2. *How are the costs and benefits of hydropower generation assessed against conservation and restoration measures for salmon (Action H2)?*

   There will be no regular quantifications of costs and benefits when the new set of Rules of Operation will be given to the owner. Instead an evaluation of the positive and negative effects will be carried out. If the positive values turns out to exceed the negative values new conditions will be set.

3. *How are geographical areas with the highest risk of negative impacts from sea lice and biggest potential for further growth of salmon farming (or sea lice impact?) being assessed (Action A1)?*

   The geographical areas with highest risk of negative impact on Atlantic salmon from sea lice are identified through the annual surveillance system, as previously described. A report is available at web-site of the Institute of Marine Research who coordinate the program for the Competent Authority on Fish diseases – the Norwegian Food Safety Authority (http://www.imr.no/nyhetsarkiv/2013/mai/overvaking_av_lakselus_2013/nb-no).

Russian Federation

1. *What is the anticipated timescale and process for the development of management measures for the coastal fishery (Action F2) and the introduction of science-based quotas for the indigenous people's fishery (Action F4)?*

In 2013 new amendments to the procedure rules of the Regional Commissions on Regulation of Harvesting the Anadromous Fish came into force by the order of the Ministry of Agriculture No. 170, 08.04.2013. Since 2014 quotas for indigenous people's fisheries should be based on scientific advice.

2. *No information has been provided on unreported catch or the extent of catch and release. The Review Group notes that there is an action (F1) intended to develop estimates of unreported catch. What is the timescale for meeting these two reporting requirements to NASCO*?

   Unreported catches: no time scale has been established yet for developing estimates of unreported catches.

   C&R: there are no obligations in the legislations of the Russian Federation to report released fish as fisheries quotas are established for removing biological resources from nature habitat. However, a procedure for reporting catches in C&R fisheries on a voluntary basis is now under development and will be implemented through Regional Anadromous Commissions.

3. *Inventories of salmon rivers are being developed or have been completed in some areas, but the APR indicates that completion of this task requires additional funding (Action H1). Will a lack of funding prevent this task being completed as scheduled by 2018?*

   The inventory of the Barents Sea rivers has been established and the work on developing the inventory of salmon rivers of the White Sea basin of Murmansk and Archangelsk regions is under way. The funding is required to establish inventory for Karelian salmon rivers and the work will be completed as scheduled by 2018.

4. *The Implementation Plan for the Russian Federation provided no baseline information on current levels of sea lice or containment in salmon farms. How will progress towards NASCO's international goals for sea lice and containment be assessed and how will the findings be shared with the international community? Will the new Federal Law on Aquaculture and subsequent bylaws provide for this baseline data collection (Action A1)?*

   New Federal Law on Aquaculture came in force in January 2014. No bylaws came in force yet. The Russian Federation will provide more information about how sea lice levels will be managed in next year's report.

5. *What measures are planned, other than monitoring, to minimise this risk of the further spread of G. salaris by anglers (e.g. increasing awareness of the risks, mandatory disinfection of gear, and treatment of the River Keret) (Action A2)?*

   No measures such as mandatory disinfection of fishing gears have been planned by authorities to minimize the risk of the further spread of the *G. salaris* by anglers. However information brochures about the risk of spreading the parasite have been published and disseminated. Some recreational fisheries companies on the Kola Peninsula conduct disinfection of fishing gears on a voluntary basis. Regarding the Keret river where *G. salaris* was found in the 1990s, no treatment program has been developed for this river and there are no plans for such a program.

USA

1. *What were the results of the surveillance conducted routinely in rivers for potential poaching activity (Action F2)?*

   The National Marine Fisheries Service's Office of Law Enforcement, the Maine Department of Marine Resource's Marine Patrol, and the Maine Department of Inland Fisheries and Wildlife's Warden Service have the responsibility, among others, of enforcing federal and state laws pertaining to the protection of Atlantic salmon. These enforcement agencies cooperate with all levels of overt enforcement, this being the best deterrent to thwart illegal activity. These agencies also engage in covert operations that have resulted in several high profile cases. In 2011, for example, a man was sentenced to six months in federal prison for snagging and selling Atlantic salmon in the Piscataquis River (a tributary to the Penobscot). Both Federal and State agencies investigate and prosecute vigorously all violations.

   Link to news story: http://bangordailynews.com/2011/05/11/news/bangor/dover-foxcroft-man-sentenced-to-six-months-for-taking-selling-salmon/

2. *What is the expected impact of the reduced financial support on the maintenance of the hatchery programme for stock rebuilding of endangered salmon populations, including for maintaining genetic diversity in the hatchery programme (Action H5)?*

   Every effort is being made to minimize the potential for loss in genetic diversity as a result of adjustments that have to be made to the conservation hatchery program due to reduced funding levels. In section 1.2 of the Annual Report of Actions taken under the United States' Implementation Plan, we referenced a structured decision analysis that is ongoing. The objective of the project is for partners to align priorities and ensure available resources are used in a manner that maximizes potential returns and reduces genetic risks. There are currently no plans to further constrict budgets of the federal hatcheries described in action H5. As budgets become more certain in the coming months, the seven alternatives identified in the structured decision analysis process will be assessed. The alternative with the highest benefit and lowest risk (that is achievable within budget constraints) will be selected and implemented.

3. *With regard to implementing the protective measures identified in the 2003 Biological Opinion concerning aquaculture, what has been the outcome of the continuing collaboration with Canadian provincial and federal agencies to inform new regulations for consistency with US federal permit requirements (Action A1)?*

   The US and Canada have a long history of collaborating on actions of mutual concern to each country. In reference to action A1, there is a process of information exchange that was agreed to over many years of collaboration. The process of information exchange and collaboration has its roots in Annex 1 of the Williamsburg Resolution and was clarified as recently as 2010 (NAC(10)4). The current NAC reports were specifically designed to reduce the reporting burden and fill gaps in communication and coordination between the United States and Canada. In 2013, the United States expressed concern and disappointment that the NAC report tabled by Canada (NAC(13)4) lacked the specificity

previously agreed to and desired. The most recent draft of the NAC report submitted by Canada (NAC(14)4). is a substantial improvement. The United States welcomes the recent discussions with staff members to advance our common interests in salmon conservation. In particular, a staff level discussion on February 28, 2014 was very helpful, including follow-up from Canada identifying points of contact within each province.

4. *Have there been any incidents of disease outbreaks of concern to wild salmon linked to bait fish importation or transfer (Action A2)?*

   No.

5. *How is the coordination of state programs that stock salmonids to support recreational fisheries being achieved and are there concerns that continuing stocking of brown trout could impact endangered salmon populations (Action A4)?*

   Coordination on these programs occurs between the Maine Department of Inland Fisheries and Wildlife which is responsible for the management and promotion of recreational fisheries and the Maine Department of Marine Resources which is responsible for the conservation and development of marine and estuarine resources.

   There are concerns that the stocking of brown trout could negatively impact endangered Atlantic salmon populations. Given these concerns, most stocking locations of non-native trout occur in lakes, ponds, and riverine areas that are not accessible to Atlantic salmon. Thus, the primary strategy to maintaining recreational fisheries for non-native trout is spatial segregation. A limited amount of brown trout stocking continues to occur in the Kennebec River, including its major tributary (the Sandy River). The Maine Department of Marine Resources and Inland Fisheries and Wildlife continue to discuss areas of potential overlap, competition, and predation as they arise.

6. *As the United States was unable to publish current levels of sea lice in salmon farms in their Implementation Plan, how will progress towards NASCO's international goals for sea lice be assessed and how will the findings be shared with the international community?*

   In order to gain a better understanding of the temporal and spatial distribution of sea lice throughout the Gulf of Maine, NOAA National Marine Fisheries Service (NMFS) has recently funded several studies to investigate the presence and abundance of sea lice on wild fish communities in embayments with salmon farms (Cobscook Bay) and areas without (Penobscot Bay). More recently, researchers at the University of Maine are investigating lice loads on wild fish in Cobscook Bay (Jensen 2012 unpublished) and Cobscook and Penobscot Bays (George 2013 unpublished) using a variety of collection methods (trawling, seining, etc.) to quantify the prevalence of sea lice on wild fish communities. Both studies compared the differences in lice loads among and between areas with and without salmon farms. Overall, both studies examined 29 different species of marine fish (n=3,597), with no wild or hatchery origin Atlantic salmon sampled. Three host species (lumpfish, C*yclopterus. lumpus*; three-spine stickleback, *Gasterosteus aculeatus*; and blackspotted stickleback *G. wheatlandi*) were observed as having at least one louse per fish. In 2013, a sub-sample of fish from Penobscot Bay (n=236) and Cobscook Bay (n=592) was analyzed in the lab to identify different lice species and life

stages. All of the lice identified on the samples analyzed were *Caligus elongatus* and most were of the non-motile pre-adult Chalimus stage. The prevalence and intensity of lice loads varied substantially between areas with only three infected fish in Penobscot Bay as compared to 118 fish observed with lice loads in Cobscook Bay. Further, comparing lice loads on three-spine sticklebacks within Cobscook Bay revealed a significant difference in lice presence on fish between production areas (inner, central and outer bays) for the two years examined (2012-2013) with a slight increase in the outer bay compared to inner ($p=0.0022$) and central ($p=0.00082$) areas. Also, within Cobscook Bay there was a significant difference in lice loads among three-spine sticklebacks across years (2012-2013) with a slight increase in the inner ($p=0.013$) and central ($p=0.024$) sections of Cobscook Bay in 2013. Comparing the stocking sites and areas for the same years indicated a difference from 2012 (sites stocked in inner/middle Cobscook Bay) to 2013 (sites stocked outside of Cobscook Bay) due to different management actions (site fallowing and Bay management areas).

Another study funded by the National Marine Fisheries Service was initiated in 2013 and is being conducted by researchers at the University of Maine to investigate "The role of wild and farmed fish in modulating the infectious pressure of the sea louse (*Lepeophtheirus salmonis* Krøyer 1837)". One of the proposed goals of the project is to determine the infectious pressure of sea lice throughout Cobscook Bay. The researchers are deploying 4 small sentinel cages containing approximately 70 farmed salmon each in areas of close proximity to salmon net pens and areas further away within Cobscook Bay. The cages will be in place for one week every month over the course of a year. No preliminary information from this study is available at this time.

We emphasize that the current results are preliminary, but we will report results more formally when they are available. We will also attempt to facilitate additional lines of research as funding allows.