



CNL(21)68

NASCO Implementation Plan for the period 2019-2024

EU – Finland

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The main purpose of this Implementation Plan is to demonstrate what actions are being taken by the Parties / jurisdictions to implement NASCO's Resolutions, Agreements and Guidelines.

*In completing this Implementation Plan please refer to the **Guidelines for the Preparation and Evaluation of NASCO Implementation Plans and for Reporting on Progress**, CNL(18)49.*

Questions in the Implementation Plan are drawn from the following documents:

- *NASCO Guidelines for Management of Salmon Fisheries, CNL(09)43 (referred to as the 'Fisheries Guidelines');*
- *Report of the Working Group on Stock Classification, CNL(16)11;*
- *Minimum Standard for Catch Statistics, CNL(93)51 (referred to as the 'Minimum Standard');*
- *Revised matrix for the application of the six tenets for effective management of an Atlantic salmon fishery, WGCST(16)16¹;*
- *NASCO Plan of Action for the Application of the Precautionary Approach to the Protection and Restoration of Atlantic Salmon Habitat, CNL(01)51;*
- *NASCO Guidelines for Protection, Restoration and Enhancement of Atlantic Salmon Habitat, CNL(10)51 (referred to as the 'Habitat Guidelines');*
- *Williamsburg Resolution, CNL(06)48;*
- *Guidance on Best Management Practices to address impacts of sea lice and escaped farmed salmon on wild salmon stocks (SLG(09)5) (referred to as the 'BMP Guidance');*
- *Guidelines for Incorporating Social and Economic Factors in Decisions under the Precautionary Approach (CNL(04)57); and*
- *Road Map' to enhance information exchange and co-operation on monitoring, research and measures to prevent the spread of G. salaris and eradicate it if introduced', NEA(18)08.*

Party:	European Union
Jurisdiction / Region:	Finland

¹ This document can be obtained from the NASCO Secretariat; email hq@nasco.int

1. Introduction		
1.1 What are the objectives for the management of wild salmon? <i>(Max 200 words)</i>		
<p>To conserve and restore Atlantic salmon stocks at levels of abundance and diversity enabling production at full natural capacity.</p> <p>To manage fisheries according to existing management plans and following the best biological knowledge and also taking into account and the broad participation of local fishing rights holders and other local stakeholders in such management.</p>		
1.2 What reference points (e.g. conservation limits, management targets or other measures of abundance) are used to assess the status of stocks? <i>(Max 200 words)</i> <i>(Reference: Sections 2.4 and 2.5 of the Fisheries Guidelines)</i>		
<p>A spawning target (Forseth et al. 2013) has been defined for the individual salmon populations or tributary complexes of the River Teno (Tana in Norwegian) system (Falkegård et al. 2014). Fifteen populations in the Teno are currently assessed for spawning target attainment (Anon 2018). Assessed populations are from different parts of the River Teno system and they may be used as indicators for other stocks as well.</p> <p>Similar method has been used for part of the Näätamöjoki (Neidenelva in Norwegian) system, but estimation of the full spawning target for this river system is underway.</p> <p>In brief, setting the spawning targets follows the following procedure: Data from nine Norwegian salmon data-rich rivers with known stock-recruitment relationships have been transferred to other, data-rich rivers. Based on the variation in productivity across the nine rivers, four productivity (egg density) categories were established. For the data-poor rivers: 1 egg m⁻² (range: 0.5-1.5 eggs m⁻²), 2 eggs m⁻² (1.5-3 eggs m⁻²), 4 eggs m⁻² (3-5 eggs m⁻²), 6 eggs m⁻² (>5 eggs m⁻²). Then, the wetted area of each river was calculated using a standardized GIS-approach, and finally each river (or parts of the river) to one of the four egg density categories. The wetted area (in m⁻²) multiplied by the egg density category results in the egg target for that river, which is then converted to number of spawning female salmon based on river-specific data on female size and fecundity.</p>		
1.3 What is the current status of stocks under the new classification system outlined in CNL(16)11?		
Stock Classification Score	Salmon Classification Category	No. rivers
0	Not at Risk	0
1	Low Risk	7
2	Moderate Risk	3
3	High Risk	6
N/A	Artificially Sustained	
N/A	Lost	
N/A	Unknown	
Additional comments: All these populations are from the Teno river system. For the Näätamöjoki, see 1.2		

1.4 How is stock diversity (e.g. genetics, age composition, run-timing, etc.) taken into account in the management of salmon stocks? (Max 200 words)	
<p>Salmon stocks in the Teno river system are extremely diverse; the complex comprises of more than 30 genetically distinct populations in tributaries and different parts of the main stem (Vähä et al. 2017), and they include 120 life history combinations of smolt ages, sea ages and previous spawning times (Erkinaro et al. 2019).</p> <p>The current fishery agreement between Finland and Norway has been designed to take into account the status of individual stocks. Multiple management measures for the Teno salmon fisheries aim at safeguarding and restoring individual populations or groups of populations. Examples include special restrictions to early season mixed-stock fishing for protecting early-run multi-sea-winter populations of the headwater tributaries.</p> <p>Finnish tributary stocks of the Teno are managed on a population-specific manner based on national legislation.</p> <p>Diversity of the River Nääämöjoki salmon population complex is still under investigation, but the results on the genetic structure will be taken into account in the future when renewing fishery agreement for the Nääämöjoki system.</p>	
1.5 To provide a baseline for future comparison, what is the current and potential quantity of salmon habitat? (Max 200 words) <i>(Reference: Section 3.1 of the Habitat Guidelines)</i>	
<p>Teno river system contains 47.2 million m² (habitat units) of production area for salmon, and the corresponding figure for the River Nääämöjoki is 5.5 million m². These figures are representing the current habitat use of the salmon populations.</p> <p>No major extensions for potential salmon habitat are likely in these near-pristine river systems.</p>	
1.6 What is the current extent of freshwater and marine salmonid aquaculture?	
Number of marine farms	
Marine production (tonnes)	
Number of freshwater facilities	0
Freshwater production (tonnes)	
Append one or more maps showing the location of aquaculture facilities and aquaculture free zones in rivers and the sea.	
1.7 Please describe the process used to consult NGOs and other stakeholders and industries in the development of this Implementation Plan. (Max 200 words)	
<p>The management plan is based on fisheries agreements and stakeholders have been involved in their preparation. NASCO guidelines and practices have been introduced and discussed with local stakeholders. A written consultation to key stakeholders was carried out for this implementation plan.</p>	

<p>2. Management of Salmon Fisheries: <i>In this section, please review the management approach to each of the fisheries in your jurisdiction (i.e. commercial, recreational and other fisheries) in line with the relevant NASCO Resolutions, Agreements and Guidelines. For Parties / jurisdictions that prosecute mixed-stock fisheries, there should at least one action related to their management.</i></p>
<p>2.1 What are the objectives for the management of the fisheries for wild salmon? <i>(Max. 200 words)</i></p>
<p>Salmon fisheries are regulated and managed to conserve and restore Atlantic salmon stocks at levels of abundance and diversity enabling production at full natural capacity.</p>
<p>2.2 What is the decision-making process for the management of salmon fisheries, including predetermined decisions taken under different stock conditions (e.g. the stock levels at which regulations are triggered)? <i>(Max. 200 words)</i> <i>(This can be answered by providing a flow diagram if this is available.)</i> <i>(Reference: Sections 2.1 and 2.7 of the Fisheries Guidelines)</i></p>
<p>A bilateral fishery agreement on the River Teno salmon fishing has been concluded between the governments of Finland and Norway; the renewed agreement has been effective since 2017. A bilateral management group consisting of government authorities and local fishing right holders is preparing annual assessments of the effects of regulations and suggested amendments, and considers the role of traditional knowledge and social, cultural and economic impacts of management.</p> <p>The Teno fishery agreement is target-based, and the regulations can be amended on a yearly basis if the status of the stocks require or allow for amendments. Fisheries authorities meet regularly, on annual basis, to assess the needs for amendments. A common management plan with Norway is underway.</p> <p>Annual assessment of the salmon stock status, and advice and recommendations for salmon management are provided by the Finnish-Norwegian scientific expert group.</p> <p>The latest bilateral agreement between Finland and Norway for the River Nääämöjoki has been concluded in 1984, and there are plans to revive the agreement in near future. For the Nääämöjoki management, a co-operative group between authorities and local stakeholders has introduced voluntary fishing regulations. Recreational fishing effort in Finland is based on a quota for the amount of fishing licences across three fishing zones, and the quotas have been set both temporally (different parts of the season) and spatially by the state authority (Metsähallitus)</p>
<p>2.3 (a) Are any fisheries permitted to operate on salmon stocks that are below their reference point (e.g. Conservation Limits)? If so, (b) how many such fisheries are there and (c) what approach is taken to managing them that still promotes stock rebuilding? <i>(Max 200 words)</i> <i>(Reference: Section 2.7 of the Fisheries Guidelines)</i></p>
<p>(a) yes,</p>
<p>(b) Eight areas (Teno river system, 6 tributaries + main stem; Nääämöjoki)</p>
<p>(c) Current Teno fishery agreement and its regulations are based on information about the status of the stocks and aimed at reducing fishing mortality down to one third of the earlier (fishing rule in force until 2016) mixed-stock fishing in the Teno mainstem fisheries. It has been estimated that this reduction of fishing mortality allows the weak stocks to be rebuild within 2 salmon generations. Designing a common management plan with Norway for implementing the regulations and to monitor the stock rebuilding is underway. New data collection and analysis for establishing biological reference points and a procedure for</p>

<p>assessing their attainment are underway for the River Näätamöjoki salmon population. No stock-rebuilding programme or an assessment of a possible need for one is currently available for this river.</p>
<p>2.4 (a) Are there any mixed-stock salmon fisheries? If so (b) how are these defined, (c) what was the mean catch in these fisheries in the last five years and (d) how are they managed to ensure that all the contributing stocks are meeting their conservation objectives? (Max. 300 words in total) (Reference: Section 2.8 of the Fisheries Guidelines)</p>
<p>(a) yes</p>
<p>(b) The main stem fishery of the River Teno is a mixed-stock fishery (MSF) exploiting c. 30 distinct salmon populations of the Teno system. Monitoring and stock status assessments take currently place on 15 individual populations. Monitoring data on different stocks (catch samples, genetic identification, run-timing and catch by different types of fisheries) have been used to design fishing rules and reductions to fishing pressure especially on large spawners that are important for the stock recovery (e.g. early migrating MSW females and previous spawners). Monitoring results are assessed annually before management decisions concerning changes to fishing rule for the next season.</p> <p>Potential existence of MSF in the Näätamöjoki river remains currently unknown, and the river is considered a single-stock system. Genetic study on the potential genetic population structure of salmon and the possible MSF in this system is underway.</p>
<p>(c) 64 t</p>
<p>(d) see answer to 2.3 (c)</p>
<p>2.5 How are socio-economic factors taken into account in making decisions on management of salmon fisheries? (Max. 200 words) (Reference: Section 2.9 of the Fisheries Guidelines)</p>
<p>Both rivers Teno and Näätamöjoki are in the area inhabited by indigenous Sámi people, and fishing for salmon is an important part of their culture. Traditional salmon fishing methods may be used in the fisheries, but the use of stationary gears is restricted to fishing right owners who live in the area. Salmon-based tourism is an important livelihood especially on the Finnish side of the River Teno area, which is why reasonable access to licensed recreational fishery is important. In addition, the use and ownership of fishing boats outside the area have been restricted, which also contributes to the protection of local businesses and Sámi culture.</p> <p>In River Teno the current, recently established regulatory measures have been especially designed to facilitate the rebuilding of the weakest stocks, e.g. they are especially targeting the early part of the fishing season when the MSW-dominated headwater populations are ascending, and when mostly traditional net fishery occurs. The new regulations should help the recovery of stocks while at the same time enable continuation of the use of traditional fishing methods, albeit with limited fishing times.</p> <p>The regulations have been established to allow recovery of the weakest stocks over 2 salmon generations, which is about 15 years. This allows reducing the effect on traditional fishery and ensuring that the traditional Sami fishery can continue during the recovery period.</p>
<p>2.6 What is the current level of unreported catch and what measures are being taken to reduce this? (Max. 200 words)</p>

<i>(Reference: Section 2.2 of the Fisheries Guidelines and the Minimum Standard)</i>	
Estimated 6 metric tons on the Finnish part of both river systems combined. Catch reporting in River Teno was made mandatory in 2017, when also a new web-based tool for catch reporting was established, but enforcement of this regulation is still not 100%.	
2.7 Has an assessment under the Six Tenets for Effective Management of an Atlantic Salmon Fishery been conducted? If so, (a) has the assessment been made available to the Secretariat and (b) what actions are planned to improve the monitoring and control of the fishery? (c) If the six tenets have not been applied, what is the timescale for doing so? (Max. 200 words) <i>(Reference: Six Tenets for Effective Management of an Atlantic Salmon Fishery, WGCST(16)16)</i>	
(a) Assessment has been conducted and it will be delivered to the Secretariat with the 2020 APR.	
(b) Monitoring and control of the fishery are implemented on a yearly basis in co-operation with Norway. In the Teno river the common monitoring program with Norway has been planned. No large changes are needed, but some coordination and certain technical improvements can be made.	
(c) Six tenets assessment can be made in 2020 the latest	
2.8 Identify the threats to wild salmon and challenges for management associated with their exploitation in fisheries, including bycatch of salmon in fisheries targeting other species.	
Threat / challenge F1	Mixed stock fishery in the main stem of the River Teno, and the cumulative fishing pressure on salmon stocks experiencing the sequence of various fisheries: the Norwegian coast, estuary, different parts of the main stem, and the tributaries.
Threat / challenge F2	Fishing in the River Näätamöjoki. The exploitation in relation to reference levels is currently unknown, but procedures to improve the situation are underway (see 2.3 c)
Threat / challenge F3	

Copy and paste lines to add further challenges which should be labelled F4, F5, etc.

2.9 What SMART actions are planned during the period covered by this Implementation Plan (2019 – 2024) to address each of the threats and challenges identified in section 2.8 to implement NASCO’s Resolutions, Agreements and Guidelines and demonstrate progress towards achievement of its goals and objectives for the management of salmon fisheries?

<p>Action F1:</p>	<p>Description of action:</p>	<p>The overall goal of Tana salmon management is to enable recovery of the weak salmon stocks to a sustainable level.</p> <p>The steps for the recovery are:</p> <ul style="list-style-type: none"> • -reduce fishing mortality to level enabling positive trend in stock development • -monitoring the stock status of individual salmon populations in the Teno system by assessing their yearly spawning target (CL) attainment • -evaluate annually monitoring results and CL attainment trends. <p>If the stock development does not show a positive trend, or if other circumstances require, yearly amendments can be made to general fishing rule through bilateral negotiations with Norway.</p> <p>Monitoring the stock status of individual salmon populations in the Teno system by assessing their yearly spawning target (CL) attainment. Management target for each population has been defined as achieving a 75% probability of attaining spawning target in a four-year period (a sliding four-year window). In particular, fishing mortality caused by various, sequential fisheries is estimated using catch data, catch samples and genetic analysis of stock contributions in mixed-stock fisheries.</p> <p>Analysis of suggested measures to react to mortality levels that deviate from the agreed target levels (addressed strongly in the new Fin-Nor agreement on the Teno salmon fisheries 2017). Annual assessment of the effect of the new agreement and its regulations: will the reduction of fishing mortality enable stock recovery?</p>
	<p>Planned timescale (include milestones where appropriate):</p>	<p>General fishing rule with Norway has been designed to enable recovery of the weak salmon stocks in a time frame of 2-3 salmon generations. The recovery period will continue many years after this IP period.</p> <p>Long recovery time is needed to enable limited traditional fishery that is important for the local Sami culture, and limited tourist fishery that is highly important for local (mostly Sami) entrepreneurs.</p> <p>Development in both fishing mortality and attainment of spawning targets are evaluated on a yearly basis, and results are published in annual stock status reports.</p> <p>Detailed stock recovery plan draft has been made in co-operation with Norway, finalizing depends on timetables with preparation of the general fishing rule for the next seven-year</p>

		<p>period.</p> <p>The general fishing rule is evaluated in seven-year periods including assessment of stock development and recovery. The fishing rule aims at recovery of the weak stocks. Annual amendments to the fishing rule can also be considered if stock status is calling for action.</p> <p>New seven-year period for implemented practical fishing rules under the general treaty will be started in 2024. Evaluation of needs for amendments and related bilateral negotiations have started in 2020. An overall goal with the general fishing rule and recovery plan is to enable recovery of the weak salmon stocks within 2 salmon generations, in c. 10-15 years.</p>
	Expected outcome:	An overall reduction of fishing mortality of 30% compared to the estimated level in 2016, i.e. prior to the new agreement, and positive development in the individual stock status.
	Approach for monitoring effectiveness & enforcement:	<p>Annual evaluation of salmon stock status development.</p> <p>Evaluation of reduction in fishing mortality. Development in both fishing mortality and attainment of spawning targets are evaluated on a yearly basis, and results published in annual stock status reports.</p> <p>Based on stock status information, annual bilateral negotiation process to assess possible needs for amendments to the general fishing rule.</p>
	Funding secured for both action and monitoring programme?	Yes
Action F2:	Description of action:	Defining spawning targets for the Näätamöjoki river system
	Planned timescale (include milestones where appropriate):	<p>Completed 2021</p> <p>Field data compiled for target setting, completed 2020</p> <p>New information about distribution area and genetic stock structure compiled 2019-2021</p> <p>Current monitoring programme will be revised and fine-tuned from 2022 onwards to facilitate the new assessment needs.</p>
	Expected outcome:	Spawning target estimated, first compliance assessed in 2022
	Approach for monitoring effectiveness & enforcement:	Näätamönjoki fisheries has been monitored annually sing catch data, catch samples and electrofishing. This ongoing monitoring gives a good background to continue management work when the spawning target estimation in completed.
	Funding secured for both action and monitoring programme?	Yes

Action F3:	Description of action:	
	Planned timescale (include milestones where appropriate):	
	Expected outcome:	
	Approach for monitoring effectiveness & enforcement:	
	Funding secured for both action and monitoring programme?	Choose an item.

Copy and paste lines to add further actions which should be labelled F4, F5, etc.

3. Protection and Restoration of Salmon Habitat: <i>In this section please review the management approach to the protection and restoration of habitat in your jurisdiction in line with the relevant NASCO Resolutions, Agreements and Guidelines.</i>
3.1 How are risks to productive capacity identified and options for restoring degraded or lost salmon habitat prioritised, taking into account the principle of ‘no net loss’ and the need for inventories to provide baseline data? (Max. 200 words) (Reference: Section 3 of the Habitat Guidelines)
Not applicable for Finland. Minor concerns about habitat impacts from road building and erosion have been handled in co-operation with Norway. To avoid these problems in the future, recommendations have been given to road constructors and regional authorities responsible for road-building according to initiatives mentioned in the Water Framework Directive river-district plan. These minor habitat issues are not considered to pose risk to productive capacity at any reasonable scale and thus the principle of ‘no net loss’ is not applicable.
3.2 How are socio-economic factors taken into account in making decisions on salmon habitat management? (Max. 200 words) (Reference: Section 3.9 of the Habitat Guidelines)
Local communities have been involved in earlier consultation meetings concerning the Water Framework Directive, and they were represented in a recent EU-funded (Interreg Nord programme) joint (Fin-Nor) project which includes the question of culvert restoration and inspections of earlier restored sites. Socio-economic factors considered included the use and quality of roads and stream crossings in relation to new and restored culverts, and related close cooperation with local people.
3.3 What management measures are planned to protect wild Atlantic salmon and its habitats from (a) climate change and (b) invasive aquatic species? (Max. 200 words each) (Reference: Section 3.2 of the Habitat Guidelines)
(a) Rebuilding weak salmon stocks to reach their management targets according to present fishing rule and the common management plan also improves resilience towards climate change. Habitats in River Teno and River Näätämöjoki catchment areas are very close to a pristine stage. Catchment area is mainly wilderness with very low human population and no road network except small roads in the very lowermost parts in Norway. For such an environment, it is not reasonable to plan habitat restoration measures. Improving resilience includes considerations of habitat connectivity in small-scale topics, like culvert restoration in small tributaries. Possible

<p>higher flows, but also more severe droughts, resulting from changing climate, have been considered in designing the new/restored stream crossing structures. Assessment of the impacts of climate change has been made as part of the International River Basin Management Plan for Teno, Näätamöjoki and Paatsjoki. There are no major habitat issues in the largely pristine salmon rivers in the Atlantic area in Finland.</p>	
<p>(b) The present fishing rule in Teno River system includes orders concerning invasive fish species (must be killed if caught). Ongoing monitoring provides information on invasive species, e.g. pink salmon, entering the river system. If needed, fishing agreement includes procedures for extraordinary situations; also ongoing working groups for implementation of the fishing agreement can be used to plan actions against invasive species. Finland has a national strategy for invasive species and an Action Plan on the National Strategy against invasive species. A report concerning current situation concerning alien species in the Finnish arctic areas has recently been published (2018).</p>	
<p>3.4 Identify the main threats to wild salmon and challenges for management in relation to estuarine and freshwater habitat.</p>	
Threat / challenge H1	Minor concerns about habitat impacts from road building and erosion. Improper culvert installations may hinder fish migration in some small streams
Threat / challenge H2	

Copy and paste lines to add further threats/challenges which should be labelled H5, H6, etc.

<p>3.5 What SMART actions are planned during the period covered by this Implementation Plan (2019 – 2024) to address each of the threats and challenges identified in section 3.4 to implement NASCO’s Resolutions, Agreements and Guidelines and demonstrate progress towards achievement of its goals and objectives for the Protection, Restoration and Enhancement of Atlantic Salmon Habitat?</p>		
Action H1:	Description of action:	Recommendations have been given to road constructors and regional authorities responsible for road construction to avoid small migration barriers and erosion. Few culverts will be restored after damage from floods
	Planned timescale (include milestones where appropriate):	Ongoing spread of information. Restoration of impacted culverts in 2020-2021
	Expected outcome:	No new problematic areas Restoration of few impacted culvert sites
	Approach for monitoring effectiveness & enforcement:	Monitored as a part of the Water Framework Directive planning. A collaborative project between Finland and Norway for inspecting and improving road culverts has been started in 2017. The catchments are very remote, mostly wilderness. Very sparse road network.
	Funding secured for both action and monitoring programme?	Expected
Action H2:	Description of action:	
	Planned timescale (include milestones where appropriate):	
	Expected outcome:	
	Approach for monitoring	

	effectiveness & enforcement:	
	Funding secured for both action and monitoring programme?	Choose an item.

Copy and paste lines to add further actions which should be labelled H3, H4, etc

4. Management of Aquaculture, Introductions and Transfers, and Transgenics:
<i>Council has requested that for Parties / jurisdictions with salmon farms, there should be a greater focus on actions to minimise impacts of salmon farming on wild salmonid stocks. Each Party / jurisdiction with salmon farming should therefore include at least one action relating to sea lice management and at least one action relating to containment, providing quantitative data in Annual Progress Reports to demonstrate progress towards the international goals agreed by NASCO and the International Salmon Farmers Association (ISFA):</i>
<ul style="list-style-type: none"> • 100% of farms to have effective sea lice management such that there is no increase in sea lice loads or lice-induced mortality of wild salmonids attributable to the farms; • 100% farmed fish to be retained in all production facilities.
<i>In this section please provide information on all types of aquaculture, introductions and transfers, and transgenics (including freshwater hatcheries, smolt-rearing etc.</i>
4.1 (a) Is the current policy concerning the protection of wild salmonids consistent with the international goals on sea lice and containment agreed by NASCO and ISFA? (b) If the current policy is not consistent with these international goals, when will current policy be adapted to ensure consistency with the international goals and what management measures are planned to ensure achievement of these goals and in what timescale? (Max. 200 words for each) <i>(Reference: BMP Guidance)</i>
(a) No aquaculture facilities in the catchment areas of the Rivers Teno and Näätamöjoki
(b)
4.2 (a) What quantifiable progress can be demonstrated towards the achievement of the international goals for 100% of farms to have effective sea lice management such that there is no increase in sea lice loads, or lice-induced mortality of wild salmonids attributable to sea lice? (b) How is this progress monitored, including monitoring of wild fish? (c) If progress cannot be demonstrated, what additional measures are proposed and in what timescale? (Max. 200 words each) <i>(Reference: BMP Guidance)</i> <i>The measures by which these goals may be achieved, and against which the Review Group will be measuring the effectiveness of the Implementation Plan, are set out in the BMP Guidance SLG(09)5 (Best management practice; reporting and tracking; factors facilitating implementation) as agreed by NASCO and ISFA.</i>
(a) No aquaculture facilities in the catchment areas of the Rivers Teno and Näätamöjoki. Marine aquaculture takes place in the Norwegian territory on the Barents Sea coast.
(b) see above
(c) see above

<p>4.3</p>	<p>(a) What quantifiable progress can be demonstrated towards the achievement of the international goals for achieving 100% containment in all (i) freshwater and (ii) marine aquaculture production facilities? (b) How is this progress monitored, including monitoring of wild fish (genetic introgression) and proportion of escaped farmed salmon in the spawning populations? (c) If progress cannot be demonstrated, what additional measures (e.g. use of sterile salmon in fish farming) are proposed and in what timescale? (Max. 200 words each) <i>(Reference: BMP Guidance)</i> <i>The measures by which these goals may be achieved, and against which the Review Group will be measuring the effectiveness of the Implementation Plan, are set out in the BMP Guidance SLG(09)5 (Best management practice; reporting and tracking; factors facilitating implementation) as agreed by NASCO and ISFA.</i></p>
	<p>(a)(i) No aquaculture facilities in the catchment areas of the Rivers Teno and Näätämöjoki, and current legislation protect these catchments from aquaculture development also in the future by preventing transfer of any biological material (eggs, fish) from outside these catchments.</p>
	<p>(a)(ii) No ocean coastline in Finland, marine aquaculture takes place in the Norwegian territory on the Barents Sea coast.</p>
	<p>(b) see above</p>
	<p>(c) see above</p>
<p>4.4</p>	<p>What adaptive management and / or scientific research is underway that could facilitate better achievement of NASCO's international goals for sea lice and containment such that the environmental impact on wild salmonids can be minimised? (Max 200 words) <i>(Reference: BMP Guidance and Article 11 of the Williamsburg Resolution)</i></p>
	<p>No aquaculture facilities in the catchment areas of the Rivers Teno and Näätämöjoki, nor Atlantic coastline (i.e. marine aquaculture) in Finland. See above.</p>
<p>4.5</p>	<p>What is the approach for determining the location of aquaculture facilities in (a) freshwater and (b) marine environments to minimise the risks to wild salmonid stocks? (Max. 200 words for each)</p>
	<p>(a) No aquaculture facilities in the catchment areas of the Rivers Teno and Näätämöjoki.</p>
	<p>(b) No coastline in Finland, marine aquaculture takes place in the Norwegian territory on the Barents Sea coast.</p>
<p>4.6</p>	<p>What progress has been made to implement NASCO's guidance on introductions, transfers and stocking? (Max. 200 words) <i>(Reference: Articles 5 and 6 and Annex 4 of the Williamsburg Resolution)</i></p>
	<p>Introduction of fishes is prohibited in the River Teno drainage area by the agreement of the River Teno fishery between Finland and Norway. However, in the River Näätämöjoki, fish releases are possible in the drainage area although they have been directed and permitted only to lakes outside the salmon migration area. Introduction of new fish species or non-indigenous fish stock to this area is prohibited without a permit from the regional fishery authority. Unlikely case for such a permit would require a thorough evaluation of potential adverse impacts on the Atlantic salmon populations.</p> <p>Most of the waters in the River Teno and Näätämöjoki drainage area are state-owned and managed</p>

<p>by the Metsähallitus. The transfer plans to move fish from an area to another within the drainage area have to be included in the management plan by the local Fisheries Region, where stakeholders have their representation. In addition Metsähallitus has to apply for a permit from the Ministry of Agriculture and Forestry to transfer fish within the drainage area of the rivers Teno and Näätämöjoki.</p>
<p>4.7 Is there (a) a requirement to evaluate thoroughly risks and benefits before undertaking any stocking programme and (b) a presumption against stocking for purely socio-political / economic reasons? (Max. 200 words each) <i>(Reference: Guidelines for incorporating social and economic factors in decisions under the Precautionary Approach and Annex 4 of the Williamsburg Resolution)</i></p>
<p>(a) see 4.6. If stocking within strict rules described in point 4.6 are made, an evaluation is required.</p>
<p>(b) yes.</p>
<p>4.8 What is the policy / strategy on use of transgenic salmon? (Max. 200 words) <i>(Reference: Article 7 and Annex 5 of the Williamsburg Resolution)</i></p>
<p>As aquaculture is prohibited in the River Teno drainage area, the question of transgenics is not applicable in this area. EU Policy is followed and applied in relation to this issue, and legislation prevents transgenic or other salmon introductions to these river systems.</p>
<p>4.9 For Members of the North-East Atlantic Commission only: What measures are in place, or are planned, to implement the eleven recommendations contained in the ‘Road Map’ to enhance information exchange and co-operation on monitoring, research and measures to prevent the spread of <i>Gyrodactylus salaris</i> and eradicate it if introduced, including the development and testing of contingency plans? (Max. 200 words) <i>(Reference ‘Road Map’ to enhance information exchange and co-operation on monitoring, research and measures to prevent the spread of G. salaris and eradicate it if introduced, NEA(18)08)</i></p>
<p>Legislation on Gyrodactylus –related issues (fish transfers, disinfection etc.; n:o 1376/2004) has been implemented.</p> <p>A preparatory report ”The protection of Rivers Teno and Näätämö against Gyrodactylus salaris” for the Gyrodactylus salaris prevention plan has been completed in 2012. Eviron julkaisu 1/2013, ISSN 1797-299X, ISBN 978-952-225-120-6. This report gives guidance for practical work, but needs for a more comprehensive plan in co-operation with Norway is being evaluated.</p> <p>The ongoing practical work to prevent G. salaris continues. Main elements of this work are:</p> <ul style="list-style-type: none"> • Active information about the threat of G. salaris and measures needed for spread prevention (brochures, billboards, roadside information boards, information at fishing-licence sales) • Disinfection station network in the northernmost Finland, training of staff at fishing-licence sales points for disinfection • Increased focus on active information at Finnish-Russian boarder station in the River Tuloma watershed, to minimize risks on G. salaris spread from this direction after the lower reaches of the river were infected in 2016. There is a migration barrier, a 63 m high hydroelectric dam with no fishway, between the infected area and the upper catchment area in the Finnish territory, and no natural spread is expected.

4.10 Identify the main threats to wild salmon and challenges for management in relation to aquaculture, introductions and transfers, and transgenics.	
Threat / Challenge A1	Gyrodactylus salaris
Threat / challenge A2	Aquaculture salmon escapees
Threat / challenge A3	

Copy and paste lines to add further threats/challenges which should be labelled A4, A5, etc.

4.11 What SMART actions are planned during the period covered by this Implementation Plan (2019 – 2024) to address each of the threats and challenges identified in section 4.10 to implement NASCO’s Resolutions, Agreements and Guidelines and demonstrate progress towards achievement of its goals and objectives for aquaculture, introductions and transfers, and transgenics?		
Action A1:	Description of action:	<p>Continue the spread of information. Applying and enforcing the current, renewed legislation for preventing spread of G.salaris.</p> <ul style="list-style-type: none"> • Active information about the threat of G. salaris and measures to spread information (brochures, billboards, roadside information boards, information at fishing licence selling points • Disinfection station network in the northernmost Finland, training of staff at fishing-licence sales points for disinfection • Increased focus on active information at Finnish-Russian boarder station in the River Tuloma watershed, to minimize risks on G. salaris spread from this direction.
	Planned timescale (include milestones where appropriate):	Ongoing
	Expected outcome:	Spread of G. salaris is prevented
	Approach for monitoring effectiveness & enforcement:	monitored along with other biological monitoring (samples from electrofishing)
	Funding secured for both action and monitoring programme?	Yes
Action A2:	Description of action:	<p>Continuation of monitoring the incidence of farmed salmon in the catches. In addition, genetic monitoring will enable more effective detection of possible escapes in wild populations. Other measures are mostly Norwegian responsibility. No new actions planned.</p> <p>New genetic baseline on Teno salmon populations will be collected in 2019-2021. This will help in assessing the impact of escaped farmed salmon on wild salmon populations.</p>
	Planned timescale (include milestones	Ongoing monitoring. The new SNP-based genetic baseline will be completed in 2021 and annual genetic stock identification

	where appropriate):	analysis on mixed-stock catches will continue thereafter on a yearly basis.
	Expected outcome:	Improved and timely information about the amount of aquaculture escapees for decision-making if necessary
	Approach for monitoring effectiveness & enforcement:	Escaped salmon abundance will be monitored as part of other biological monitoring of wild salmon populations
	Funding secured for both action and monitoring programme?	Expected
Action A3:	Description of action:	
	Planned timescale (include milestones where appropriate):	
	Expected outcome:	
	Approach for monitoring effectiveness & enforcement:	
	Funding secured for both action and monitoring programme?	Choose an item.

Copy and paste lines to add further actions which should be labelled A4, A5, etc

References:

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