Council

CNL(20)33

Annual Progress Report
on Actions Taken Under the Implementation Plan for the Calendar Year 2019

EU – Sweden

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The Annual Progress Reports allow NASCO to evaluate progress on actions taken by Parties / jurisdictions to implement its internationally agreed Resolutions, Agreements and Guidelines and consequently the achievement of their objectives and actions taken in accordance with the Convention. The following information should be provided through the Annual Progress Reports:

- any changes to the management regime for salmon and consequent changes to the Implementation Plan;
- actions that have been taken under the Implementation Plan in the previous year;
- significant changes to the status of stocks, and a report on catches; and
- actions taken in accordance with the provisions of the Convention.

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

These reports will be reviewed by the Council. Please complete this form and return it to the Secretariat **no later than 1 April 2020**.

Party:	**European Union**
Jurisdiction / Region:	**Sweden**

1: Changes to the Implementation Plan
1.1 Describe any proposed revisions to the Implementation Plan *(Where changes are proposed, the revised Implementation Plans should be submitted to the Secretariat by 1 November).*
No revisions are proposed**.**
1.2 Describe any major new initiatives or achievements for salmon conservation and management that you wish to highlight.
Local engagement in the river organizations has resulted in local fishing rules in order to complement national legislation and reach a higher protection of weak stocks. There is also a rapid increase in catch and release in sport fishing

2: Stock status and catches.
2.1 Provide a description of any new factors that may significantly affect the abundance of salmon stocks and, if there has been any significant change in stock status since the

development of the Implementation Plan, provide a brief (200 word max) summary of these changes.
Stock status remained unchanged, but no catch was recorded from commercial fishing on the coast (fifth year in a row), i.e. mixed-stock fishing on the coast has ceased. Catch and release in wild salmon rivers has increased from 9% in 2011 to 36% in 2019. Out of 24 rivers with salmon 14 rivers reported no harvest of salmon in 2019!

2.2 Provide the following information on catches: ***(nominal catch equals reported quantity of salmon caught and retained in tonnes 'round fresh weight' (i.e. weight of whole, ungutted, unfrozen fish) or 'round fresh weight equivalent').***

	In-river	Estuarine	Coastal	Total
(a) provisional nominal catch (which may be subject to revision) for 2019 (tonnes)	16.9	0	0	16.9
(b) confirmed nominal catch of salmon for 2018 (tonnes)	13.0			13.0
(c) estimated unreported catch for 2019 (tonnes)				1.7
(d) number and percentage of salmon caught and released in recreational fisheries in 2019	755 salmon; 19.7% for the total fishery; wild and reared (enhancement & ranching). Of these 736 were wild salmon (with adipose fin); 36.8% of wild salmon.			

3: Implementation Plan Actions.

3.1 Provide an update on progress on actions relating to the Management of Salmon Fisheries *(section 2.9 of the Implementation Plan).* ***Note:*** *the reports under 'Progress on action to date' should provide a brief overview of each action. For all actions, provide clear and concise quantitative information to demonstrate progress. In circumstances where quantitative information cannot be provided for a particular action because of its nature, a clear rationale must be given for not providing quantitative information and other information should be provided to enable progress with that action to be evaluated. While referring to additional material (e.g. via links to websites) may assist those seeking more detailed information, this will not be evaluated by the Review Group.*

Action F1:	Description of action (*as submitted in the IP*):	New fishing rules: Implementing fishing rules that avoids exploitation of large salmon in weak stocks by introducing maximum length for landed fish (prohibiting catch of large salmon) or, if needed, more restrictive fishing rules. New fishing rules will be followed up with special information projects about the new rules and fisheries control. (Threat / challenge F3: Over-exploitation of large salmon in weak stocks.)
	Expected outcome (*as submitted in the IP*):	Decreased number of rivers with weak (reduced reproductive capacity) stocks.
	Progress on action to date *(Provide a brief overview with a quantitative*	Planned for 2021

	measure, or other justified evaluation, of progress. Other material (e.g. website links) will not be evaluated):	
	Current status of action:	Ongoing
	If 'Completed', has the action achieved its objective?	
Action F2:	Description of action (*as submitted in the IP*):	Fin-clipping smolts: Continue the ongoing fin-clipping (adipose fin) program, started in 2005, of all reared and stocked salmon and brown trout smolt in order to separate wild and reared salmon in mixed stock river fisheries. (Threat / challenge F2: Mixed-stock fisheries in three rivers (wild and reared salmon.)
	Expected outcome (*as submitted in the IP*):	Enable anglers to distinguish between wild and reared salmon in mixed stock fisheries to avoid landing wild salmon. Only reared salmon are landed in these rivers (all wild salmon released alive).
	Progress on action to date *(Provide a brief overview with a quantitative measure, or other justified evaluation, of progress. Other material (e.g. website links) will not be evaluated):*	Fin-clipping of the adipose fin is carried out on all reared smolts that are released. The fin-clipping, and the status of smolts, are checked by fisheries officers at the County Boards.
	Current status of action:	Completed
	If 'Completed', has the action achieved its objective?	Yes
Action F3:	Description of action (*as submitted in the IP*):	Coastal MSF: Avoiding mixed-stock fisheries on the coast to counteract effects of decreased marine survival by reducing exploitation of weak stocks. (Threat /challenge F1: Decreased marine survival makes all, but especially already weak, salmon stocks more sensitive to exploitation).
	Expected outcome (*as submitted in the IP*):	Catches of salmon in coastal waters will stay negligible (<100 salmon) to mitigate effects of low marine survival and help restore weak stocks.
	Progress on action to date *(Provide a brief overview with a quantitative measure, or other justified evaluation, of progress. Other material (e.g. website links) will not be evaluated):*	Since 2015 there has been no reported harvested of salmon in the commercial coastal fishery. Thus, the former mixed-stock fishing on the coast is gone. But a few salmon may be caught by non-commercial gillnetting, especially in mixed-stock fishery outside River Lagan (ranched salmon) where there also can be wild salmon in the catches.

	Current status of action:	Ongoing
	If 'Completed', has the action achieved its objective?	
Action F4:	Description of action (*as submitted in the IP*):	Riverine MSF: Avoiding mixed-stock fisheries in rivers with stocking of reared salmon in the main river stem and production of wild salmon in tributaries. (Threat /challenge F2: Mixed-stock fisheries in three rivers (wild and reared salmon)). New fishing rules will be followed up with designated projects to inform about the new rules and fisheries control.
	Expected outcome (*as submitted in the IP*):	Recovery of wild salmon stocks in tributaries to the rivers Göta älv, Nissan and Lagan. No landed wild salmon in rivers with mixed stocks of reared and wild salmon from 2021 and onward. Increase the status of tributary stocks above reduced reproductive capacity in 2030 (two generations).
	Progress on action to date *(Provide a brief overview with a quantitative measure, or other justified evaluation, of progress. Other material (e.g. website links) will not be evaluated):*	To be initiated in 2021.
	Current status of action:	Not started
	If 'Completed', has the action achieved its objective?	
Action F5:	Description of action (*as submitted in the IP*):	Genetic diversity: Successively improve knowledge of genetic diversity and status of all stocks in the main rivers, and larger tributaries in order to maintain genetic diversity. Has been ongoing since 2015. (Threat /challenge F5: Maintaining genetic diversity of stocks and biodiversity of salmon rivers). This action may lend itself to a more qualitative approach to monitoring as it focuses on learning and increasing knowledge, which is hard to quantify. The aim will be to improve the genetic baseline by increasing the number of analyzed individuals.
	Expected outcome (*as submitted in the IP*):	Improved genetic baseline and genetic diversity data will give a new tool for management (see section 1.1).
	Progress on action to date *(Provide a brief overview with a quantitative measure, or other justified evaluation, of progress. Other material (e.g. website links) will not be evaluated):*	A compilation of the genetic status of stocks will be published in 2020. The results show that the salmon rivers on the Swedish west coast can be assigned to two stock complexes, southern and northern. However, they are more similar to one another than with Baltic salmon or landlocked salmon in the large Lake Vänern. Work is ongoing with Norwegian colleagues to compare the genetics of west coast stocks with the data from other Atlantic salmon stocks. This will enable us to identify alien salmon with genetic tools.

	Current status of action:	Ongoing
	If 'Completed', has the action achieved its objective?	This action is near to be completed.
Action F6:	Description of action (*as submitted in the IP*):	Stock status: Annual assessment of each river stock's reproductive capacity (stock status). Ongoing, since 2017 using an improved assessment model. Stocks with a salmon habitat less than 2 hectares or with smolt estimates <500 smolt will be assessed only if data (electrofishing, automatic fish counters) is available from other programmes (outside salmon monitoring). In rivers where smolt and spawner counts are not available electrofishing data is used together with the stock/recruitment function from the index river to set a conservation limit. (Threat /challenge F4: 46% of river stocks are assessed as having reduced reproductive capacity).
	Expected outcome (*as submitted in the IP*):	Attain essential data for better local and national management by estimating number of smolt, ascending individuals and parr in salmon smolt traps, fish counters and electrofishing surveys respectively. Yearly estimates of parr densities at spawning and nursery grounds in all rivers with an estimated smolt production >500 smolt annually. Yearly estimates of stock status in these rivers. In rivers with smaller habitat/production status is estimated if data are available from other programs.
	Progress on action to date *(Provide a brief overview with a quantitative measure, or other justified evaluation, of progress. Other material (e.g. website links) will not be evaluated):*	River specific CL's (Conservation limits) have been established (Tamario & Degerman 2017), where the stock status for each river is assessed using electrofishing data (abundance of parr; >0+). CL's have also been established for the required number of ascending salmon in all rivers, but there are too few rivers with automatic fish counters to use this S/R-relation at present (except for Rivers Ätran and Högvadsån – which both had good reproductive capacity). However, electrofishing data was available from 24 rivers with tributaries. With the suggested method for setting and evaluating stock status, 6 (25 %) stocks were found to have good productive capacity, 9 (37.5 %) had risk of reduced and 9 (37.5 %) had reduced reproductive capacity.
	Current status of action:	Ongoing
	If 'Completed', has the action achieved its objective?	Completed for the year 2019, ongoing 2020 - 2024
Action F7:	Description of action (*as submitted in the IP*):	Exploitation in rivers: Monitor exploitation in two rivers to be able to assess exploitation effects on stock status. This data can then be

		extrapolated to other rivers. (Threat /challenge F4: 46% of river stocks are assessed having reduced reproductive capacity). Ongoing since 2000.
	Expected outcome (*as submitted in the IP*):	Attain exploitation data used for the ICES WGNAS salmon stock complex assessment by data collection in fish counters and salmon traps combined with fishery statistics.
	Progress on action to date *(Provide a brief overview with a quantitative measure, or other justified evaluation, of progress. Other material (e.g. website links) will not be evaluated):*	No fishing occurs on the coast since 2015. All exploitation is from sport fishing or brood stock harvesting. Both with good reporting. However, as stated above, we have only two rivers with wild salmon where a fish trap and a fish counter, respectively, enable a precise estimate of exploitation. This work continued in 2019, and the exploitation rate was estimated to 3% and 22%, respectively.
	Current status of action:	Ongoing
	If 'Completed', has the action achieved its objective?	Completed for the year 2019, ongoing the year 2020 – 2024.
Action F8:	Description of action (*as submitted in the IP*):	Improve catch statistics: In rivers, with regard to catch and release and fin-clipping. Focus will be on informing people responsible for river fisheries of the requirements for satisfactory catch statistics. National mandatory reporting of recreational catches are not permitted according to Swedish fishery legislation, but if stock status/or the presence of mixed-stock fisheries cannot be assessed the river stock as a whole could be considered as weak status. (Threat /challenge F1- F4: Decreased marine survival makes all, but especially already weak salmon stocks more sensitive to exploitation; Mixed-stock fisheries in three rivers (wild and reared salmon); Over-exploitation of large salmon in weak stocks, 46% of river stocks are assessed as having reduced reproductive capacity).
	Expected outcome (*as submitted in the IP*):	Improved catch statistics resulting in better management advice.
	Progress on action to date *(Provide a brief overview with a quantitative measure, or other justified evaluation, of progress. Other material (e.g. website links) will not be evaluated):*	During 2018 and 2019 catch statistics have improved, but are still not satisfactory with regard to the reporting of fin-clipped fish, and catch and release. During 2020-2021 recreational fishing associations will have articles in their magazine informing about the need for improved catch statistics. Since 2018 catch statistics are gathered by one organisation which will improve quality control and communication with fishing right owners, previously there were two independent organisations (two County Boards).
	Current status of action:	Ongoing
	If 'Completed', has the action achieved its objective?	

3.2 Provide an update on progress on actions relating to Habitat Protection and Restoration *(section 3.5 of the Implementation Plan).* ***Note:*** *the reports under 'Progress on action to date' should provide a brief overview of each action. For all actions, provide clear and concise quantitative information to demonstrate progress. In circumstances where quantitative information cannot be provided for a particular action because of its nature, a clear rationale must be given for not providing quantitative information and other information should be provided to enable progress with that action to be evaluated. While referring to additional material (e.g. via links to websites) may assist those seeking more detailed information, this will not be evaluated by the Review Group.*		
Action H1:	Description of action (*as submitted in the IP*):	Liming: Continued liming of acidified salmon rivers and tributaries to counteract acidification. There are presently 18 river systems in the liming program. (Threat / challenge H3: Acidification (increasing mortality of salmon eggs and fry)). Liming has been ongoing since 1976.
	Expected outcome (*as submitted in the IP*):	Keep pH-levels above 6.0 and inorganic aluminium at non-toxic levels, thereby minimizing mortality of salmon eggs and fry. Keeping pH-levels above 6.0 and inorganic aluminium at non-toxic levels will also keep a generally high biodiversity (especially invertebrates, amphibians and fish) in salmon rivers.
	Progress on action to date *(Provide a brief overview with a quantitative measure, or other justified evaluation, of progress. Other material (e.g. website links) will not be evaluated):*	The Swedish liming programme is presently (spring 2020) revised by the Swedish Agency for Marine and Water Management. It is expected that liming in west coast salmon rivers will continue for many years to avoid loss of salmon production.
	Current status of action:	Ongoing
	If 'Completed', has the action achieved its objective?	Completed for the year 2019, ongoing 2020-2024
Action H2:	Description of action (*as submitted in the IP*):	Habitat survey: Compiling habitat surveys, adding quality assured and new data when required to map good as well as degraded and lost salmon habitats resulting from Threat / challenge H1-H4 (hydropower exploitation, channelizing, acidification and water withdrawal) to be able to take the correct management actions.
	Expected outcome (*as submitted in the IP*):	Data compilation, using field surveys, electrofishing data & GIS analyses, will form the basis for further actions to improve quality and extent of salmon habitats. As stated above several other species and ecosystem services will also benefit from relevant actions identified.
	Progress on action to date *(Provide a brief overview with a quantitative*	A compilation of available habitat was made in 1999 and again in 2016. During 2022 a new compilation will be carried out with the assistance of the County Boards.

	measure, or other justified evaluation, of progress. Other material (e.g. website links) will not be evaluated):	During 2018 a salmon habitat index was developed (score from 0 to 8 depending on habitat quality). The index will be published internationally in 2021. The index will enable both habitat size and quality to be assessed in the future.
	Current status of action:	Ongoing
	If 'Completed', has the action achieved its objective?	
Action H3:	Description of action (*as submitted in the IP*):	Habitat restoration: Develop *best available methods* to restore salmon habitats that have been degraded or lost due to Threat /challenge H1-H4 (hydropower exploitation, channelizing, acidification and water withdrawal).
	Expected outcome (*as submitted in the IP*):	Web-based guidelines for *best available methods* for restoration to be available publically on a "Restoration website" by the Swedish Agency for Marine and Water Management.
	Progress on action to date *(Provide a brief overview with a quantitative measure, or other justified evaluation, of progress. Other material (e.g. website links) will not be evaluated):*	In 2020 a manual on aquatic restoration will be published in Swedish (replacing the existing manual from 2008). Work on the website will continue until 2021-2024.
	Current status of action:	Ongoing
	If 'Completed', has the action achieved its objective?	
Action H4:	Description of action (*as submitted in the IP*):	Habitat restoration: Continued habitat restoration in salmon rivers to counteract degraded and lost salmon habitats resulting from Threat / challenge H1-H4 (hydropower exploitation, channelizing, acidification and water withdrawal) and to strengthen salmon stocks. Habitat restoration has been ongoing since the late 1970s.
	Expected outcome (*as submitted in the IP*):	Improved conditions facilitating increased smolt production, salmon genetic diversity and general aquatic and riparian biodiversity.
	Progress on action to date *(Provide a brief overview with a quantitative measure, or other justified evaluation, of progress. Other material (e.g. website links) will not be evaluated):*	Through EU-funding a large restoration project has started in River Rönne å in 2019. Three dams and power plants will be eliminated, increasing the available habitat considerably. In River Bäveån and River Örekilsälven fishways are planned at the lowermost power plants.

	Current status of action:	Ongoing
	If 'Completed', has the action achieved its objective?	
Action H5:	Description of action (*as submitted in the IP*):	Connectivity: Publish national guidelines for best available technology (BAT) of fish passages, to let salmon pass hydropower plants and other migration obstacles (Threat /challenge H1, hydropower exploitation, channelizing, acidification and water withdrawal), based on a compilation of existing knowledge, from international and national literature. This action may lend itself to a more qualitative approach and monitoring because it is hard to measure the increase in knowledge that the guidelines will produce.
	Expected outcome (*as submitted in the IP*):	A handbook will facilitate decision-making in planning new fish passages.
	Progress on action to date *(Provide a brief overview with a quantitative measure, or other justified evaluation, of progress. Other material (e.g. website links) will not be evaluated):*	A new handbook has been produced by the Swedish University of Agricultural Sciences (February 2020) and submitted to the Swedish Agency for Marine and Water Management for approval and publication on the Internet.
	Current status of action:	Ongoing
	If 'Completed', has the action achieved its objective?	
Action H6:	Description of action (*as submitted in the IP*):	Water regulation: Development of national guidelines for water regulation that can protect or restore salmon habitats. (Threat / challenge H1, H2 and H4, hydropower exploitation, channelizing and water withdrawal). Water regulation that leave riverbeds dry or with very low or irregular flows (hydropeaking) will result in degraded or lost salmon habitats. See also action H8.
	Expected outcome (*as submitted in the IP*):	Water regulation that can protect or restore salmon habitats.
	Progress on action to date *(Provide a brief overview with a quantitative measure, or other justified evaluation, of progress. Other material (e.g. website links) will not be evaluated):*	Two new research projects (Ecospill and Ecopeaking) have started to address the problem. Collaboration between the University in Umeå and the Swedish University of Agricultural Sciences. The projects are scheduled to report in 2021.
	Current status of action:	Ongoing

	If 'Completed', has the action achieved its objective?	

3.3 Provide an update on progress on actions relating to Aquaculture, Introductions and Transfers and Transgenics *(section 4.11 of the Implementation Plan).* ***Note****: the reports under 'Progress on action to date' should provide a brief overview of each action. For all actions, provide clear and concise quantitative information to demonstrate progress. In circumstances where quantitative information cannot be provided for a particular action because of its nature, a clear rationale must be given for not providing quantitative information and other information should be provided to enable progress with that action to be evaluated. While referring to additional material (e.g. via links to websites) may assist those seeking more detailed information, this will not be evaluated by the Review Group.*		
Action A1:	Description of action (*as submitted in the IP*):	*Gyrodactylus salaris:* Continued monitoring of *Gyrodactylus salaris* to assess impact in already infected populations of salmon and to detect the potential spread of the parasite to new rivers. The monitoring program has been ongoing since 2001. First investigations were made in1989-1992. In the present program, salmon fry and parr are collected with electrofishing and then screened for *Gyrodactylus*. Cooperation with Norway (Norwegian Veterinary Institute) to determine species and haplotype. eDNA may be introduced in the monitoring from 2020. (Threat / challenge A4: Impact of *Gyrodactylus salaris* on stocks).
	Expected outcome (*as submitted in the IP*):	Continuous information on impact in already infected populations of salmon and detect potential spread of the parasite to new rivers.
	Progress on action to date *(Provide a brief overview with a quantitative measure, or other justified evaluation, of progress. Other material (e.g. website links) will not be evaluated):*	The monitoring programme has continued as planned. A compilation of the results 1989-2019 is in progress. It will be available (in English) in May 2020. Today 16 out of 24 rivers are infected, all rivers debouching in the Kattegat Sea. The salinity in this area seldom exceeds 20 psu. Northern salmon stocks live in rivers debouching in the Skagerrak Sea, a more saline environment. This prevents spread of *Gyrodactylus salaris* via migrating salmon between rivers.
	Current status of action:	Ongoing
	If 'Completed', has the action achieved its objective?	
Action A2:	Description of action (*as submitted in the IP*):	*Gyrodactylus salaris:* Develop contingency plan for *Gyrodactylus salaris* so that actions to mitigate the effects of a spread of the parasite can be rapidly undertaken. Stocking of fish is not permitted to uninfected river systems under the Swedish legislation. In the existing monitoring program, salmon fry and parr are collected with electrofishing and then screened for *Gyrodactylus*. Cooperation with Norway to determine species and haplotype. eDNA may be introduced in the monitoring from 2020).

		(Threat / challenge A4: Impact of *Gyrodactylus salaris* on stocks).
	Expected outcome (*as submitted in the IP*):	Decide actions to be undertaken if the parasite spreads to new water systems close to Norway.. Identify relevant authorities and stakeholders. The parasite is considered endemic to the Baltic sea area.
	Progress on action to date *(Provide a brief overview with a quantitative measure, or other justified evaluation, of progress. Other material (e.g. website links) will not be evaluated):*	Not started yet.
	Current status of action:	Not started
	If 'Completed', has the action achieved its objective?	
Action A3:	Description of action (*as submitted in the IP*):	Alien species or populations: Develop the national ability to genetically identify alien Atlantic salmon (*Salmo salar*) and Oncorhynchus species in catches. Alien species and escaped cultured salmon into natural ecosystems may threaten wild populations both ecologically and genetically. Alien Atlantic salmon can be especially hard to distinguish from our stocks in the field, but if tissue samples from suspected alien fish can be sent for genetic identification, efforts to screen for and remove alien fish can be made when they pass fish ladders or are caught in brood stock fishery. The aim is to genetically screen a maximum of 100 suspected alien species/salmon annually reported by fishermen or caught in a trap in the index river. (Threat / challenge A1-A2: Invasions of alien Atlantic salmon, often escapees from salmon farms in other countries; Alien species of *Oncorhynchus* can spread parasites and diseases, disturb spawning and cause interspecific hybridisation).
	Expected outcome (*as submitted in the IP*):	Ability to identify alien species and stocks in our rivers. According to new, impending legislation only fin-clipped salmon can be landed in stocked salmon rivers. If escapees from salmon farms occur, they will have intact adipose fins (and cannot be harvested in the river fishery). It is important to be able to rapidly identify these fish genetically so that they can be removed when they pass fish ladders or are caught in brood stock fisheries. The aim is to remove all alien species from brood stocks and remove as many alien individuals as possible from the index river.
	Progress on action to date *(Provide a brief overview with a quantitative*	See also action F5. A compilation of the genetic status of stocks will be published in 2020 (in Swedish). Work is ongoing with Norwegian colleagues to compare the genetics of west coast stocks with the data from other Atlantic salmon

	measure, or other justified evaluation, of progress. Other material (e.g. website links) will not be evaluated):	stocks. This will enable us to identify alien salmon with genetic tools.
	Current status of action:	Ongoing
	If 'Completed', has the action achieved its objective?	
	Current status of action:	Choose an item.

4: Additional information required under the Convention

4.1	Details of any laws, regulations and programmes that have been adopted or repealed since the last notification.
No	
4.2	Details of any new commitments concerning the adoption or maintenance in force for specified periods of time of conservation, restoration and other management measures.
No	
4.3	Details of any new actions to prohibit fishing for salmon beyond 12 nautical miles.
No	
4.4	Details of any new actions to invite the attention of States not party to the Convention to matters relating to the activities of its vessels which could adversely affect salmon stocks subject to the Convention.
No	
4.5	Details of any actions taken to implement regulatory measures under Article 13 of the Convention including imposition of adequate penalties for violations.
No	
North American Commission Members only:	
4.6	Details of any new measures to minimise by-catches of salmon originating in the rivers of the other member.
4.7	Details of any alteration to fishing patterns that result in the initiation of fishing or increase in catches of salmon originating in the rivers of another Party except with the consent of the latter.