

	Council <i>Annual Progress Report on Actions taken under the Implementation Plan for the Calendar Year 2021 EU – Sweden</i>	CNL(22)27
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Annual Progress Report on Actions taken under the Implementation Plan for the Calendar Year 2021

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 2022.**

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).
4.6. Add some information on the implementation of NASCO’s guidance on introductions, transfers and stocking.
4.9. Add relevant information on the development of a contingency plan for G. salaris.
1.2 Describe any major new initiatives or achievements for salmon conservation and management that you wish to highlight.
Due to a new legislation requiring modern environmental conditions for hydropower plants a national plan has been decided for the revision of the hydropower plant licenses in environmental courts. The national plan includes 2 100 hydropower plants and will be performed during the period 2022-2042. Planning and preparing have taken place during 2019-2021 and the process in the environmental courts will start in 2022 including eight Atlantic salmon rivers. This process can provide environmental goals for each catchment. The environmental plan for environmental conditions for hydropower will be a significant boost in restoration of river habitats.

2: Stock status and catches.				
2.1 Provide a description of any new factors that may affect the abundance of salmon stocks significantly 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.				
<p>Stock status reduced compared to 2019 (3 out of 23 stocks assessed in 2021 was in good productive capacity). No catch was recorded from commercial fishing on the coast (7th year in a row), i.e. mixed-stock fishing on the coast has ceased.</p> <p>Catch and release of wild salmon in rivers has increased from 9% in 2011 to 37% in 2021. Out of 24 rivers with salmon 7 rivers reported no harvest of salmon in 2021.</p>				
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’).				
(a) provisional nominal catch (which may be subject to revision) for 2021 (tonnes)	In-river	Estuarine	Coastal	Total
	11			11
(b) confirmed nominal catch of salmon for 2020 (tonnes)	14,2			14,2
(c) estimated unreported catch for 2021 (tonnes)	1,1			1,1
(d) number and percentage of salmon caught and released in recreational fisheries in 2021	680 salmon; 23% for the total fishery; wild and reared (enhancement & ranching). Of these 612 were wild salmon (with adipose fin); 37% 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).		
<p><i>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.</i></p>		
Action F1:	Description of action (as submitted in the IP):	New fishing rules: Implementing fishing rules that decrease exploitation of weak stocks by introducing maximum length for landed fish (prohibiting catch of large salmon) or if needed more restrictive fishing rules.
	Expected outcome (as submitted in the IP):	Less stocks with reduced reproductive capacity and increased smolt production.

	Progress on action to date <i>(Provide a brief overview with a quantitative measure, or other justified evaluation, of progress. Other material (e.g. website links) will not be evaluated):</i>	Planned for 2021-2022. The planned action have been delayed. Resources for implementing new fishing rules have for 2020-2021 been prioritized for Baltic salmon
	Current status of action:	Ongoing
	If 'Completed', has the action achieved its objective?	
Action F2:	Description of action <i>(as submitted in the IP):</i>	Fin-clipping smolts: Continued fin-clipping (adipose fin) of <u>all</u> reared and stocked salmon and brown trout smolt.
	Expected outcome <i>(as submitted in the IP):</i>	Enabling anglers to distinguish between wild and reared salmon in field, which facilitates action F4.
	Progress on action to date <i>(Provide a brief overview with a quantitative measure, or other justified evaluation, of progress. Other material (e.g. website links) will not be evaluated):</i>	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 <i>(as submitted in the IP):</i>	Coastal MSF: Avoiding mixed-stock fisheries on the coast.
	Expected outcome <i>(as submitted in the IP):</i>	Catches of salmon in coastal waters will stay negligible (compare with section 2.4 above).
	Progress on action to date <i>(Provide a brief overview with a quantitative measure, or other justified evaluation, of progress. Other material (e.g. website links) will not be evaluated):</i>	Since 2015 there have 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 are caught by non-commercial gillnetting, especially in mixed-stock fishery outside River Lagan (ranching salmon) where there also can be wild salmon in the catches. The extent of this gillnetting was investigated by the County Board of Halland in 2021 and the reported catches was very low. Further surveys of recreational catches on the coast will be conducted in 2022 or 2023.
	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.
	Expected outcome (as submitted in the IP):	Recovery of wild salmon stocks in tributaries to the rivers Göta älv, Nissan and Lagan.
	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):	Planned for 2022. Scientific advice have been delivered 2021.
	Current status of action:	Ongoing
	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.
	Expected outcome (as submitted in the IP):	Improved genetic baseline and genetic diversity data will give a new tool for management, where genetic diversity can be included in 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):	Genetic samples from Brattorpsån, Smedjeån, Fylleån, Viskan, Sennan and Rolfsån was collected in 2021 to improve the genetic baseline and knowledge of genetic diversity.
	Current status of action:	Completed
	If 'Completed', has the action achieved its objective?	Yes.
Action F6:	Description of action (as submitted in the IP):	Designated (index) river:Continued monitoring in the designated (index) river.
	Expected outcome (as submitted in the IP):	Quality assured monitoring of stock development. Also, the diversity of the whole fish fauna is monitored.
	Progress on action to date (Provide a brief overview with a quantitative measure, or other justified evaluation, of progress. Other material (e.g.	The stock development in index river Högvadsån was monitored 2021. The smolt run in 2021 was 2474 smolts and hence well below both the long term (1954-2021) and short term (2011-2021) mean. The spawning run in 2021 was 496 salmon in total (180 1SW and 316 MSW). For 1SW fish this is well below both the long term mean (429 fish in 1954-2021) and the short term mean (433 fish in

	<i>website links) will not be evaluated):</i>	2010-2021). For MSW fish it is above the long term mean (265) but below the short term mean (524). Parr abundances indicated reduced reproductive capacity.
	Current status of action:	Completed
	If 'Completed', has the action achieved its objective?	Yes.
Action F7:	Description of action (as submitted in the IP):	Stock status: Annually assesses each river stock's reproductive capacity. Stocks with a salmon habitat less than 2 hectares will be assessed only if data (electrofishing, automatic fish counters) is available from other programmes (outside salmon monitoring).
	Expected outcome (as submitted in the IP):	Attainment of essential data for better local and national 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):	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 river Ätran– which both had reduced reproductive capacity). However, electrofishing data was available from 23 rivers with tributaries in 2021. With the suggested method for setting and evaluating stock status, 3 stocks were found to have good productive capacity, 14 had risk of reduced and 6 had reduced reproductive capacity. This is the lowest status reported since individual river CL was established in 2017.
	Current status of action:	Completed
	If 'Completed', has the action achieved its objective?	Yes
Action F8:	Description of action (as submitted in the IP):	Exploitation in rivers: Monitor exploitation in two rivers.
	Expected outcome (as submitted in the IP):	Attainment of data used for the ICES WGNAS salmon stock complex assessment.
	Progress on action to date (Provide a brief overview with a quantitative measure, or other justified evaluation, of progress. Other material (e.g.	No fishing occurs on the coast since 2015. All exploitation is from sport fishing or brood stock harvesting. Both with good reporting. However, we have only two rivers with wild salmon where a fish trap (Högvadsån) and a fish counter (Ätran), respectively, enable a precise estimate of exploitation.

	<i>website links) will not be evaluated):</i>	This work continued in 2021. Data were collected during 2021 and will be analyzed in 2022.
	Current status of action:	Completed
	If 'Completed', has the action achieved its objective?	yes
Action F9:	Description of action (as submitted in the IP):	Improve catch statistics; -in rivers, with regard to catch and release and fin-clipping. -on the coast, through a survey estimate of salmon and brown trout catch in the recreational fishery.
	Expected outcome (as submitted in the IP):	Improved catch statistics and better knowledge of what today is reported as "unreported catches". Resulting in better catch 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 have had articles in their magazine informing about the need for improved catch statistics and the reporting of fin-clipped fish has improved in 2021. Since 2018 catch statistics are gathered by one organisation that will improve quality control and communication with fishing right owners, previously there were two independent organisations (two County Boards).
	Current status of action:	Completed
	If 'Completed', has the action achieved its objective?	Partly, C&R is still not reported in all rives.

3.2 Provide an update on progress on actions relating to Habitat Protection and Restoration (section 3.5 of the Implementation Plan). <i>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.</i>		
Action H1:	Description of action (as submitted in the IP):	Continued liming of acidified salmon rivers and tributaries
	Expected outcome (as submitted in the IP):	Keeping pH-levels above 6.0 and inorganic aluminium at non-toxic levels, thereby minimizing mortality of eggs and fry. General high biodiversity (especially invertebrates, amphibians and fish) in salmon rivers.

	Progress on action to date <i>(Provide a brief overview with a quantitative measure, or other justified evaluation, of progress. Other material (e.g. website links) will not be evaluated):</i>	The Swedish liming programme has during 2021 been revised by the Swedish Agency for Marine and Water Management. Nineteen of a total of twenty-three Atlantic salmon rivers is included in the liming program. There is no need for liming in the remaining four rivers. It is expected that liming in Atlantic salmon rivers will continue for many years to avoid loss of salmon production. Acid deposition is the major cause, but large-scale land-use and vegetation changes over the past 100 years have also contributed to surface-water acidification. Acid deposition have been reduced since the 1980s and because of that the amount of lime per year has been lowered but the need of liming acidified lakes and streams will continue for many years.
	Current status of action:	Completed
	If 'Completed', has the action achieved its objective?	Yes.
Action H2:	Description of action <i>(as submitted in the IP):</i>	Measures to create better knowledge and understanding of the impact of hydropower production and other exploitation of watercourse, on salmon migration and loss of salmon habitat and develop methods to recreate salmon migration routes and restore habitats. <ol style="list-style-type: none"> 1. Develop a plan for environmentally friendly hydropower production including salmon rivers. 2. Document the distribution of Atlantic salmon in Swedish rivers before hydropower exploitation (1880). 3. Compiling habitat surveys, adding quality assured and new data when required. 4. Development of best available methods to restore salmon habitat. 5. Publish national guidelines for best available technology (BAT) of fish passages. Develop national guidelines for water regulation.
	Expected outcome <i>(as submitted in the IP):</i>	<ol style="list-style-type: none"> 1. Several Atlantic salmon rivers negatively affected by hydropower production could have improved salmon stock status by applying environmental friendly hydropower production. Probably no significant effect on stocks during the IP period 2019-2024, but in the long run. 2. Attain a good basis for planning of restoration efforts, such as connectivity measures, and possibility for environmental consideration in competing river exploitation interests as for example court decision on modern environmentally friendly operational conditions for hydropower plants. 3. The data compilation will form the basis for further actions to improve quality and extent of salmon habitats. 4. Web-based guidelines on a planned "Restoration website" of the Swedish Agency for Marine and Water Management. 5. Handbook on BAT for fish passages electronically available. Will facilitate decision-making in planning new

		<p>fish passages.</p> <p>6. Recommendations for water regulation successively implemented in water systems with hydropower production, and possibly also in water systems where other water withdrawal occurs.</p>
	<p>Progress on action to date <i>(Provide a brief overview with a quantitative measure, or other justified evaluation, of progress. Other material (e.g. website links) will not be evaluated):</i></p>	<p>1. New legislation requiring modern environmental conditions: A proposed National Plan have been submitted to the government and 1st of January 2019, a new legislation was completed. The Government along with the new legislation gave the Swedish Agency for Marine and Water Management, The Swedish Energy Agency and the Svenska Kraftnät (the grid operator), the assignment to provide a national plan for the revision of the hydropower plant licenses. It will be an extensive work as there are 2100 hydropower plants in Sweden. Planning, preparing and coordination have taken place during 2019 - 2021. The national plan is to be carried out over an operational period of 20 years starting in 2022. A new aspect of the legislation is time-limited environmental requirements with a maximum period of 40 years. The plant owner is responsible to update the license when a requirement is outdated and apply for revision to the Environmental Court. This process can provide goals for each catchment. The environmental plan for hydropower will be a significant game-changer and a major boost in river restoration in Sweden. In the state budget for 2022 at least SEK 95,000,000 is dedicated to intensified work with guidelines, supervision, testing and re-evaluation of water activities, including the authorities implementation of the legislation which means that hydropower plants must be provided with modern environmental conditions in a coordinated manner with the greatest possible benefit for the aquatic environment and for efficient national access to hydropower electricity, as well as for river restoration and biological reestablishment. Of the stated amount at least SEK 70,000,000 will be distributed to the County administrative boards for this work.</p> <p>The decision process in environmental courts will start in 2022 regarding the Atlantic salmon rivers Bäveån, Enningdalsälven, Fylleån, Genevadsån, Göta älv, Rolfsån, Rönneå, Stensån, Suseån, Tvååkersån and Örekilsälven.</p> <p>2. Document the distribution of Atlantic salmon in Swedish rivers before hydropower exploitation (1880).</p> <p>3. 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.</p>

		<p>During 2018 a salmon habitat index was developed (score from 0 to 8 depending on habitat quality). The index will enable both habitat size and quality to be assessed in the future.</p> <p>4. Development of best available methods to restore salmon habitat. In 2021 a manual on aquatic restoration was published in Swedish (replacing the previous manual from 2008). Work on the website will continue until 2024.</p> <p>5. Publish national guidelines for best available technology (BAT) of fish passages. A new handbook was 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. The handbook is now available online at the SWaM home page.</p> <p>6. A report with recommendations on a number of basic practises regarding appropriate ecological considerations that should always be taken into account when regulating water is available online at the SWaM home page.</p>
	Current status of action:	Completed
	If 'Completed', has the action achieved its objective?	Yes
Action H3:	Description of action (as submitted in the IP):	Continued improvement of habitat in salmon rivers.
	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):	Improvement of about ten habitat sites in Atlantic salmon rivers during 2021. A large scale habitat restoration in River Rönneån has been projected during 2021 and permission sought in environmental court in February 2022.
	Current status of action:	Completed
	If 'Completed', has the action achieved its objective?	Yes. The project with restoring habitats in river Rönneån is planned to start as soon permission is given by the environmental court. The river will have new watercourses at three hydropower plants that will be closed down. Four obstacles for salmon and other fish species will be removed and new salmon habitats restored in seven kilometers of the river.
	Description of action	Systematically evaluate risk of introduction of alien species and measures to prevent introduction and dispersal of alien

Action H4:	(as submitted in the IP):	species.
	Expected outcome (as submitted in the IP):	Improved ability to prevent introduction of alien species, detect and identify alien species and take measures against alien species. Such as <i>Oncorhynchus</i> species.
	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 national website has been published in 2019 where the public can identify and report alien species as for example <i>Oncorhynchus</i> species. The website has been updated during 2021. Responsible authorities website regarding alien species has been improved. Fishermen possibilities recognizing invasive species and the importance of removing alien species such as pink salmon when fishing has been improved.
	Current status of action:	Completed
	If 'Completed', has the action achieved its objective?	Yes

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):	Continued monitoring of <i>Gyrodactylus salaris</i> , and develop a road map and contingency plan to prevent spread of <i>Gyrodactylus salaris</i> to not infected rivers.
	Expected outcome (as submitted in the IP):	Quality assured data on presence and prevalence of the parasite. Decided actions to be undertaken if the parasite spreads to new water systems close to Norway or Finland. Relevant authorities and stakeholders identified. 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):	The monitoring programme has continued as planned. <i>Gyrodactylus</i> Contingency plan and Roadmap under development. Increased cooperation with Norway, for example participation in Norwegian workshops regarding <i>Gyrodactylus salaris</i> and Atlantic salmon.
	Current status of action:	Ongoing
	If 'Completed', has the action achieved its objective?	
Action A2:	Description of action (as submitted in the IP):	Develop the national ability to genetically identify alien Atlantic salmon (<i>Salmo salar</i>).

Expected outcome (as submitted in the IP):	Ability to identify alien species and stocks. According to the impending new 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 rapidly be able to identify these fish genetically so that they may be removed when they pass fish ladders or are caught in brood stock fishery.
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 was published in 2020 (Söderberg et al 2020, in Swedish) and the microsatellites used by the Swedish University of Agricultural Sciences to identify salmon species has been calibrated against the SalSea baseline in 2020 (Palm & Söderberg 2020). The genetic baseline has been further improved in 2021 by adding data from 6 rivers. A genetic study published in 2021 (Palm et al 2021) also indicate the extent of genetic introgression of farmed salmon on wild populations.
Current status of action:	Completed
If 'Completed', has the action achieved its objective?	yes

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 bycatches 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.

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