



Council

*Annual Progress Report on Actions taken under the Implementation Plan for the Calendar Year 2020 – Norway*

CNL(21)28

***Annual Progress Report on Actions taken under the Implementation Plan for the Calendar Year 2020***

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.

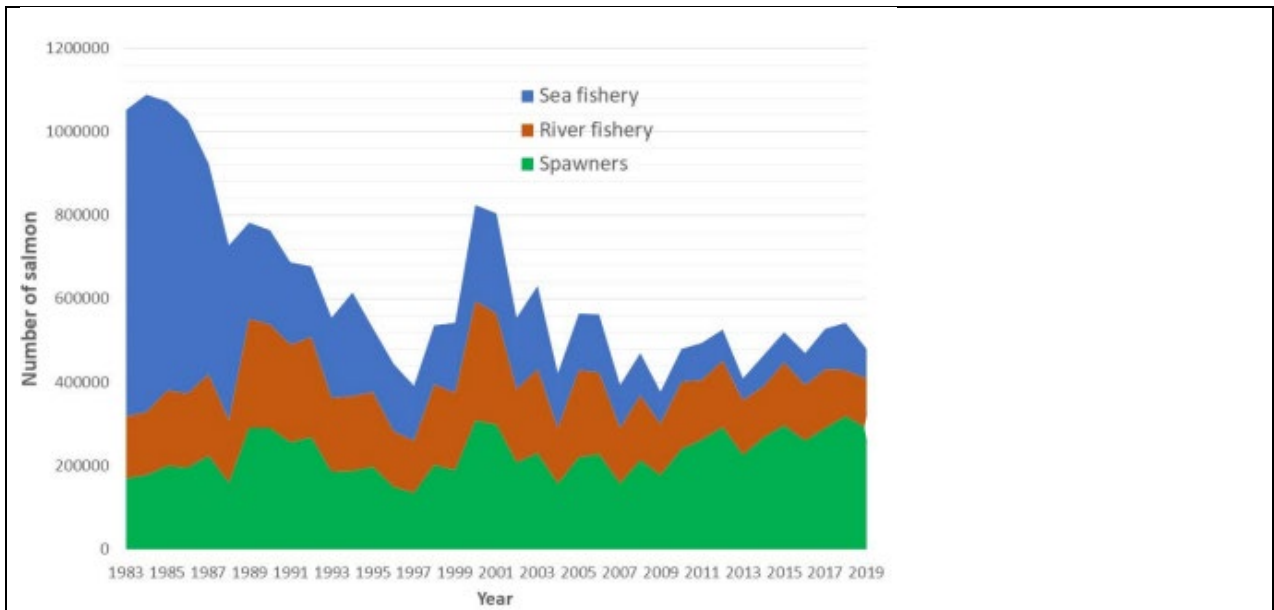
*In completing this Annual Progress Report please refer to the **Guidelines for the Preparation and Evaluation of NASCO Implementation Plans and for Reporting on Progress, CNL(18)49.***

These reports will be reviewed by the Council. Please complete this form and return it to the Secretariat **no later than 1 April 2021.**

<b>Party:</b>	Norway
<b>Jurisdiction / Region:</b>	

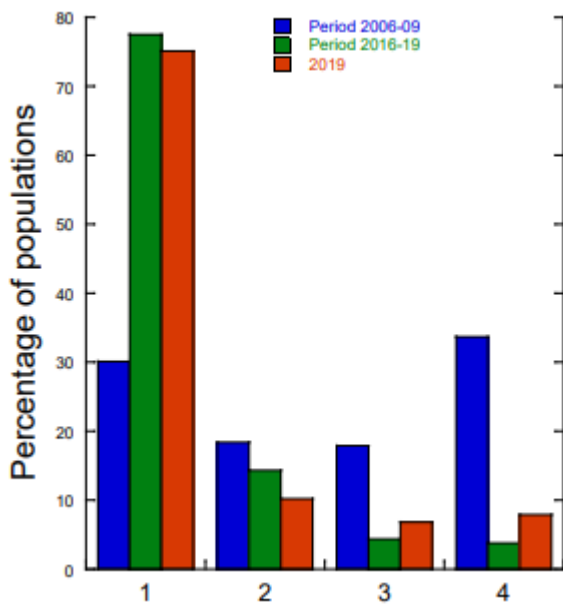
<b>1: Changes to the Implementation Plan</b>
<b>1.1 Describe any proposed revisions to the Implementation Plan (Where changes are proposed, the revised Implementation Plans should be submitted to the Secretariat by 1 November).</b>
<b>1.2 Describe any major new initiatives or achievements for salmon conservation and management that you wish to highlight.</b>

<b>2: Stock status and catches.</b>
<b>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.</b>
The number of salmon returning from the ocean to Norway each year is less than half of the level in the 1980s and has been relatively stable since the late 1990s (fig 1.)



**Figure 1.** Estimated number of wild salmon returning from the ocean towards Norwegian rivers each year, divided in number of fish caught in the sea fisheries, number of fish caught in the rivers during angling, and the number of fish left for spawning in the rivers during the period 1983- 2019.

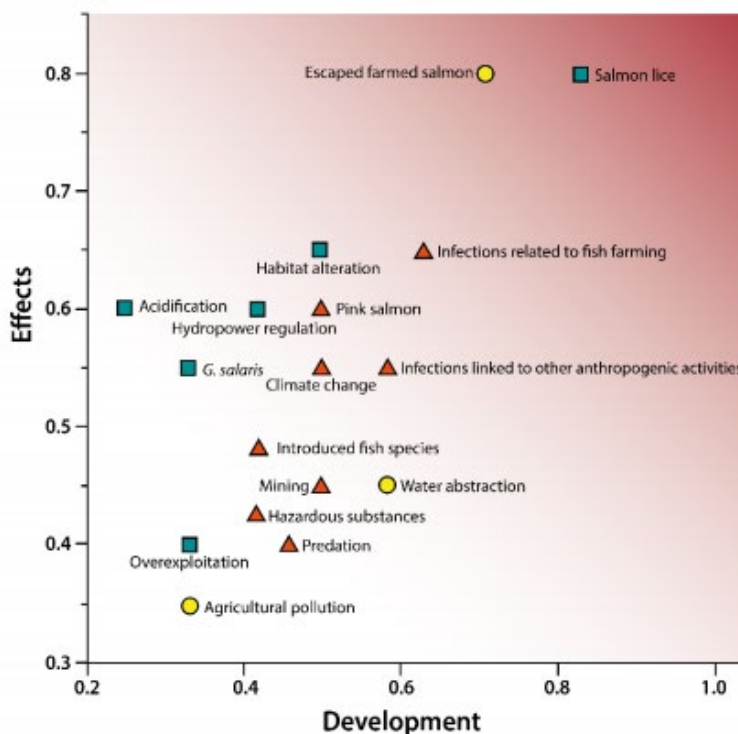
There are, however, significant regional differences in the development of the salmon stocks over the last 30 years. Despite the decline in the amounts of returning salmon, the number of salmon spawning in the rivers has increased (fig 2). The increased number of spawners despite reduced numbers returning from the ocean is due to reduced fisheries in the sea and rivers.



**Figure 2.** Proportion (%) of the evaluated salmon rivers in category 1: the management target is attained, category 2: there is a risk that the management target is not attained, category 3: the management target is likely not attained, and category 4: the

management target is far from being attained. Data are given for the periods 2006-2009 and 2016- 2019, as well as for 2019 only (SACAS)

Escaped farmed salmon, salmon lice and infections related to salmon farming are the greatest anthropogenic threats to Norwegian wild salmon (fig 3). The present levels of mitigation measures are too low to stabilize and reduce these threats. Hydropower production, other habitat alterations and introduced pink salmon are also considered major threats to wild salmon. Hydropower production and other habitat alterations significantly reduce salmon populations, and there is significant potential for further mitigation measures. Pink salmon is a new threat, and there is need for national and international measures to reduce the risk of negative impacts on native salmonids, including Atlantic salmon.



**Figure 3.** Ranking of 17 impact factors considered in 2019, according to their effects on wild Atlantic salmon populations and the likelihood of a further negative development. The knowledge of each impact factor and the uncertainty of further development is indicated by the colour of the markers. Green squares=Extensive knowledge and small uncertainty, yellow circles=moderate knowledge and moderate uncertainty, and red triangles=poor knowledge and high uncertainty (SACAS).

**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 2020 (tonnes)	In-river	Estuarine	Coastal	Total
	312		215	527

(b) confirmed nominal catch of salmon for 2019 (tonnes)	293		219	513
(c) estimated unreported catch for 2020 (tonnes)	56		169	225
(d) number and percentage of salmon caught and released in recreational fisheries in 2020	28 753, 23 percent (115 tonnes) Reported catches in 2.2 are 2020/2019 figures and not 2019/2018.			

### 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.*

<b>Action F1:</b>	Description of action (as submitted in the IP):	Development, testing and evaluation of an expanded sea survival surveillance program.
	Expected outcome (as submitted in the IP):	Increased knowledge about salmon recruitment, growth and sea survival at a national and regional scale.
	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):	An expansion of salmon sea survival surveillance has been initiated. Several locations have been considered, and in 2020 surveillance was conducted in five rivers along the Norwegian coast. Based on experiences from the surveillance, the suitability of the selected locations and the program will be evaluated and adjusted in 2022.
	Current status of action:	Ongoing
	If 'Completed', has the action achieved its objective?	

<b>Action F2:</b>	Description of action (as submitted in the IP):	(a) Increased effort to reveal and sanction illegal fisheries. (b) Revision of salmon and inland fisheries act to introduce stricter reactions to violation of legislation.
	Expected outcome (as submitted in the IP):	Reduction in illegal fisheries.
	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) In 2020 the Norwegian Nature Inspectorate had an expanded budget in order to increase their efforts to reveal and sanction illegal salmon fisheries. The increase in budget allowance was continued in 2020.  (b) The salmon and inland fisheries act has been revised and stricter reactions to violation of legislation are introduced
	Current status of action:	Completed
	If 'Completed', has the action achieved its objective?	
<b>Action F3:</b>	Description of action (as submitted in the IP):	Major revision of regulatory measures in rivers and in mixed-stock fisheries in the sea for the period 2021-2026.
	Expected outcome (as submitted in the IP):	-Adjusted fisheries regulations -Reduced overexploitation due to updated regulatory measures.
	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 november 2020 NEA sent their position regarding new regulatory measures to the Ministry of Climate and Environment. These regulations will entail significantly reduced harvesting of mixed stocks in sea. The Ministry's discernment of NEA's position has been more time consuming than anticipated, and assessment of regulatory measures were not done in 2020 as planned. Enforced spring 2021.
	Current status of action:	Ongoing
	If 'Completed', has the action achieved its objective?	
<b>Action F4:</b>	Description of action (as submitted in the IP):	Development of an electronic system to make reporting of catches in the sea by recreational anglers possible.
	Expected outcome (as submitted in the IP):	Reduction in unreported catches.
	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 2019 it has been possible for recreational anglers to report all catches of anadromous fish in the sea at the webpage <a href="http://www.stangfiskesjo.miljodirektoratet.no">www.stangfiskesjo.miljodirektoratet.no</a> . The Norwegian Environment Agency continues to work on improving the application from feedback from users. Our biggest challenge is to make the online solution known to the broader public.

	Current status of action:	Ongoing
	If 'Completed', has the action achieved its objective?	
<b>Action F5:</b>	Description of action (as submitted in the IP):	Introduction of second generation spawning targets. A revised approach for setting spawning targets has been developed (2020). The new approach will be tested in several rivers in 2021. Depending on the outcome of the test, revised spawning targets will be implemented for all rivers with salmon stocks from 2022 and onwards.
	Expected outcome (as submitted in the IP):	More precise spawning targets and better stock 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 the autumn of 2020 the NEA and the Norwegian Institute for Nature research (NINA) signed a contract which commits contracting parties to recalculate spawning targets for selected rivers in western Norway in 2021. The recalculation will be done based on stock recruitment relations and local knowledge on intra riverine differences in habitat quality.
	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.*

<b>Action H1:</b>	Description of action (as submitted in the IP):	Long-term liming of 24 acidified salmon rivers.
	Expected outcome (as submitted in the IP):	Restored salmon stocks and fishing possibilities
	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):	At present, 24 Norwegian salmon rivers are included in the national program for river liming. In 10 rivers where stocks were lost due to acid rain, stocks are re-established. Salmon catches in limed rivers have increased from about 10 tons in the 1980s to 40 - 60 tons today, and at present this makes up for 10-14 % of total salmon catches in Norwegian rivers. The funding is provided by the Norwegian Government. In 2020, the cost was about 50 mill NOK ( $\approx$ 4.6 mill GBP).
	Current status of action:	Ongoing

	If 'Completed', has the action achieved its objective?	
<b>Action H2:</b>	Description of action (as submitted in the IP):	Mitigation measures for improved salmon habitat in regulated rivers.
	Expected outcome (as submitted in the IP):	Restored fish habitat and increased salmon production in regulated 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):	Mitigation measures are carried out in about 60 rivers with Atlantic salmon and sea trout stocks, as a follow up of environmental terms. Measures are at different stages; typically starting with bottleneck analysis and ending up with specific mitigation measures and monitoring programs. One goal is to assess if improved salmon production habitats can replace fish-stocking programs. Priority is given to the most important salmon rivers influenced by hydropower regulations, where measures can be done in a cost/effective manner.
	Current status of action:	Ongoing
	If 'Completed', has the action achieved its objective?	
<b>Action H2-2:</b>	Description of action (as submitted in the IP):	Revision of terms for hydropower production licenses and consider the existing rules of operation, in several rivers.
	Expected outcome (as submitted in the IP):	The result of the process will vary among rivers. The salmon habitat is one of several factors that will be evaluated. Main mitigating measures include environmental flow.
	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):	This process is time consuming as the hydropower projects are affecting many different interests. In 2020 3 new requests for revision of terms in salmon rivers were received and 2 processes started in anadromous watercourses. In additional, revision processes are ongoing 25 watercourses. Final decision on new terms of operation was made for one salmon river in 2020. The status of all revision cases can be found in <a href="https://www.nve.no/konsesjonssaker/?type=V-1">https://www.nve.no/konsesjonssaker/?type=V-1</a>
	Current status of action:	Ongoing
	If 'Completed', has the action achieved its objective?	
<b>Action H3:</b>	Description of action (as submitted in the IP):	Improving salmon habitat in rivers altered to improve security during flood.
	Expected outcome (as submitted in the IP):	Improved rearing conditions when closed rivers sections are opened and influenced by regular changes in the hydrological regime.
	Progress on action to date (Provide a brief overview with a quantitative	Minimising environmental effects in flood protection is an integrated part of the flood protection work financed by the Norwegian Government, such as effects on the salmon habitat.

	<i>measure, or other justified evaluation, of progress. Other material (e.g. website links) will not be evaluated):</i>	
	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.*

<b>Action A1-1:</b>	Description of action (as submitted in the IP):	In 2013, the Norwegian Government decided to establish a live gene bank for the Hardangerfjord area. This was mainly because of the impacts in terms of genetical introgression from escaped farmed salmon on wild populations of salmon, as well as of the impacts from sea lice on salmonid stocks. Approximately 20 stocks in this region will be conserved in the gene bank. Simultaneously, a supplementation of the samples from the current stock in the cryogenetic genbank will be completed.
	Expected outcome (as submitted in the IP):	Reduced hybridisation between wild and farmed fish, with a qualitative improvement in genetic integrity at population level.
	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 collection of fish for the live gene bank is on schedule. In these six years, i.e. half of the project period, about half of the necessary fish are collected. The building of a new live gene bank for these stocks is completed. There will be an official opening of the new bank during this year.
	Current status of action:	Ongoing
	If 'Completed', has the action achieved its objective?	
<b>Action A1-2:</b>	Description of action (as submitted in the IP):	Further improvement of precautionary measures e.g.: - Site based technical certificate for every fish farm in the sea. - Implementing a new technical standard NS9416 for land-based aquaculture facilities. - Continuously high focus on effective control regimes



	Expected outcome (as submitted in the IP):	Reduced hybridisation between wild and farmed fish, with a qualitative improvement in genetic integrity at population level.
	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):	<p>Technical site-certificate are required for all sea-based aquaculture installations through regulations based in the Aquaculture act.</p> <p>For land based aquaculture new regulations came to effect in 2018 for new installations. For existing installations, the certificate must be issued before January 2021. Also, all new components in existing installations must be certified before use.</p> <p>NS 9416 came was issued in 2013, and changes to adjust for land based aquaculture installations are in process</p>
	Current status of action:	Ongoing
	If 'Completed', has the action achieved its objective?	Regulations are continuously revised and adjusted as new technical solutions are developed, and environmental challenges identified.
<b>Action A1-3:</b>	Description of action (as submitted in the IP):	Establish more experience with farming sterile fish in commercial fish farms and research into the production of sterile farmed salmon.
	Expected outcome (as submitted in the IP):	Reduced hybridisation between wild and farmed fish, with a qualitative improvement in genetic integrity at population level.
	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):	<p>Research is still ongoing to evaluate animal welfare considerations, as well as performance in relation to various environmental factors. Consequently, research licences are currently using triploid fish. Several commercial salmon-farmers have been delayed in using triploid fish in "green" salmon farm licenses due to welfare considerations, until March 2020. At this point, several producers of juvenile salmon and full commercial production of salmon for consumption were given licenses.</p> <p>Work on research and commercial level are ongoing</p>
	Current status of action:	Ongoing
	If 'Completed', has the action achieved its objective?	
<b>Action A1-4:</b>	Description of action (as submitted in the IP):	<p>Further developing and improving the National monitoring program of escaped salmon in the rivers. This means:</p> <ul style="list-style-type: none"> <li>- including relevant rivers when data quality is sufficient,</li> <li>- testing and evaluating relevant field methods for monitoring escaped salmon</li> <li>- further standardising methods for analysing data from monitoring activities.</li> </ul>

	Expected outcome (as submitted in the IP):	Reduced hybridisation between wild and farmed fish, with a qualitative improvement in genetic integrity at population level.
	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):	<p>The national program for monitoring escaped salmon has been running since 2014. This will be continued on a yearly basis, with addition of new river-systems as high-quality assessments are available. The number of rivers monitored on a yearly basis have evened out on approx. 200. A report from 2020 will be ready within summer 2021.</p> <p>As a part of standardizing of methods, several field experiments have been conducted to compare different methods, thus aiming to optimize the choice of method(s) in the individual river systems. The field “Hand-book” will be updated continuously as new knowledge becomes available.</p> <p>Based on a «polluter pay» perspective, the Directorate of Fisheries has implemented a practice where salmon farmers have been given an extended responsibility concerning funding and organizing of monitoring and recapture in salt- and freshwater after escape incidents.</p> <p>The industry is underway on developing a "tracking-program" for escaped farmed salmon. The tracking is based on DNA-methods in combination with Trace-element analysis. The aim with the program is to track escaped farmed fish back to its source, on a farm level. The system shall be up and running in 2021, but will need a period of time before all fish in the sea is into the data-bases.</p>
	Current status of action:	Ongoing
	If ‘Completed’, has the action achieved its objective?	
<b>Action A1-5:</b>	Description of action (as submitted in the IP):	Continue the efforts of removal of escaped fish in rivers before spawning season through OURO.
	Expected outcome (as submitted in the IP):	Reduced hybridisation between wild and farmed fish, with a qualitative improvement in genetic integrity at population level.
	Progress on action to date (Provide a brief overview with a quantitative measure, or other justified evaluation, of progress. Other material (e.g.	<p>OURO is continuing removal of fish from rivers identified through the Nation Monitoring program.</p> <p>For rivers not included in the Monitoring program, The Directorate of Fisheries has a system where rivers will be monitored, and escapees removed, when there are reports of observations. Furthermore, The Directorate of</p>

	<i>website links) will not be evaluated):</i>	Fisheries have contracts aiming at removing any observed escapee found in other fieldwork in the rivers.
	Current status of action:	Ongoing
	If 'Completed', has the action achieved its objective?	
<b>Action A1-6:</b>	Description of action (as submitted in the IP):	The Norwegian Environment Agency funds a monitoring project on genetical integrity in wild Atlantic Salmon populations.
	Expected outcome (as submitted in the IP):	Reduced hybridisation between wild and farmed fish, with a qualitative improvement in genetic integrity at population level.
	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):	<p>239 Atlantic salmon populations are classified based on genetic introgression of escaped farmed Salmon in terms of the quality element "Genetic Integrity" according to the "National Quality Norm for Wild Atlantic Salmon (<i>Salmo salar</i>)". The genetic status is distributed as follows in the four quality classes defined by the Quality Norm:</p> <p>Green (Status very good or good): No genetic introgression observed – 80 populations (33.5%)  Yellow (Status moderate): Weak genetic introgression indicated – 69 populations (29%)  Orange (Status poor): Evidence of moderate genetic changes – 22 populations (9%)  Red (Status very poor): Evidence of large genetic changes – 68 populations (28.5%).</p> <p>Since the previous report in 2019 14 new populations have been classified to the following categories: 5 in the green category, 2 in the yellow category, 6 in the orange category, and 1 in the red category. The classification has changed for 20 of the 225 populations classified in 2019. Twelve of these have shifted to a worse status and eight to a better status. New samples, exclusion of older samples used for classification and new historical reference samples are the most important reasons for the changes in classification.</p>
	Current status of action:	Ongoing
	If 'Completed', has the action achieved its objective?	
<b>Action A2:</b>	Description of action (as submitted in the IP):	Continuous implementation of the Traffic Light System and the regulations related to production areas, and sea lice monitoring and control in fish farms.
	Expected outcome (as submitted in the IP):	Avoid unacceptable sea lice induced mortality on wild Atlantic salmon. Unacceptable level (red areas) is defined as the level

	<p>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):</p>	<p>where sea lice-induced mortality on wild salmon (<i>Salmo salar</i>) is more than 30 %, see 4.1 b.</p> <p>In accordance with the Traffic Light System, the production areas (PO's) are classified yearly by an Expert group. They base their reports on all available knowledge concerning sea lice, including large scale monitoring and models. The Government decides biannually in which PO the total production capacity can grow, should freeze or be reduced based on the expert reports and other relevant information.</p> <p>The table below sums the status report of sea lice induced mortality for migrating postsmolt in each PO from 2016-2020, made by the expert group.</p> <table border="1" data-bbox="678 772 1220 1288"> <thead> <tr> <th></th> <th>2016</th> <th>2017</th> <th>2018</th> <th>2019</th> <th>2020</th> </tr> </thead> <tbody> <tr><td>PO-1</td><td>Low</td><td>Low</td><td>Low</td><td>Low</td><td>Low</td></tr> <tr><td>PO-2</td><td>Mod</td><td>Low</td><td>Mod</td><td>Low</td><td>High</td></tr> <tr><td>PO-3</td><td>High</td><td>High</td><td>High</td><td>Mod</td><td>High</td></tr> <tr><td>PO-4</td><td>Mod</td><td>High</td><td>Mod</td><td>High</td><td>Mod</td></tr> <tr><td>PO-5</td><td>Mod</td><td>Mod</td><td>Mod</td><td>High</td><td>Low</td></tr> <tr><td>PO-6</td><td>Mod</td><td>Low</td><td>Low</td><td>Low</td><td>Low</td></tr> <tr><td>PO-7</td><td>Mod</td><td>Low</td><td>Mod</td><td>Low</td><td>Mod</td></tr> <tr><td>PO-8</td><td>Low</td><td>Low</td><td>Low</td><td>Low</td><td>Low</td></tr> <tr><td>PO-9</td><td>Low</td><td>Low</td><td>Low</td><td>Low</td><td>Low</td></tr> <tr><td>PO-10</td><td>Low</td><td>Low</td><td>Low</td><td>Mod</td><td>Low</td></tr> <tr><td>PO-11</td><td>Low</td><td>Low</td><td>Low</td><td>Low</td><td>Low</td></tr> <tr><td>PO-12</td><td>Low</td><td>Low</td><td>Low</td><td>Low</td><td>Low</td></tr> <tr><td>PO-13</td><td>Low</td><td>Low</td><td>Low</td><td>Low</td><td>Low</td></tr> </tbody> </table> <p>The Ministry of Trade, Industry and Fisheries concluded in February 2020 that PO-4 and PO-5 were defined as red areas.</p> <p>In these PO's the aquaculture companies gets their production capacity reduced with 6 %. This is the first time that the classification by the Traffic Light System lead to reduction of the production capacity. PO-3 and PO-10 were defined as yellow areas and are therefore not allowed to increase their production capacity. In PO-1, PO-6, PO-7, PO-8, PO-9, PO-11, PO-12 and PO-13, the aquaculture companies may increase their production capacity with up to 6 %.</p> <p>The Expert group states that the knowledge about sea lice infections in wild salmon smolt has increased a lot during the last years with better surveillance and methods that also includes the possibility to determine from which watercourse the smolt originates, which in combination</p>		2016	2017	2018	2019	2020	PO-1	Low	Low	Low	Low	Low	PO-2	Mod	Low	Mod	Low	High	PO-3	High	High	High	Mod	High	PO-4	Mod	High	Mod	High	Mod	PO-5	Mod	Mod	Mod	High	Low	PO-6	Mod	Low	Low	Low	Low	PO-7	Mod	Low	Mod	Low	Mod	PO-8	Low	Low	Low	Low	Low	PO-9	Low	Low	Low	Low	Low	PO-10	Low	Low	Low	Mod	Low	PO-11	Low	Low	Low	Low	Low	PO-12	Low	Low	Low	Low	Low	PO-13	Low	Low	Low	Low	Low
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		<p>with physical surveillance allows determining the lice impact on individual rivers. The amount of sea lice infections in aquaculture is measured more detailed and accurately. As we continuously generate more knowledge, the system is improving.</p> <p>There is also an ongoing international evaluation organized by the Norwegian Research Council. The purpose of the evaluation is to:</p> <ul style="list-style-type: none"> <li>• Assess the use and choice of scientific models and methods, strengths and weaknesses, handling of risk and uncertainty, results and statistics, and quality of the assessments</li> <li>• Assess to what extent the recommendations from the Steering group to the Ministry of Trade, Industry and Fisheries reflect the scientific evidence</li> </ul> <p>The evaluation will be an important document for improving the work on assessing the risk of mortality in wild salmonids due to salmon lice from farmed salmon.</p>
	Current status of action:	Ongoing
	If 'Completed', has the action achieved its objective?	
<b>Action A3-1:</b>	Description of action (as submitted in the IP):	<p>Eradicate <i>G. salaris</i> in the Driva (4 rivers) and Drammen (3 river) region. In the first region a fishing barrier has recently been made. In both regions fish are collected into the gene bank, ready for restocking after treatment period. The treatment with rotenone, acid aluminium and/or chlorine will start after some years of preparation and planning.</p>
	Expected outcome (as submitted in the IP):	<p>An optimistic prognosis is that the eradication of <i>G. salaris</i> in Norway is finalized in 2025, and that there will be no rivers left with this parasite after that. If everything goes according to plan, the Drivers region can be declared free of <i>G. salaris</i> in 2029 and the Drammen region a couple of years later.</p>
	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):	<p>Preparations for combatting the parasite are carried out in both the Driva and Drammen regions. In the Driva region (4 rivers), a fish barrier was established in the river Driva in 2017, which reduces the anadromous stretch from about 100 km to about 20 km. This fish barrier must be in operation for 6 years to be sure that all salmon are away from the areas upstream of the fish barrier. A chemical treatment of the 4 infected rivers in the Driva region can thus be carried out in 2022/2023. In 2021, a full-scale experiment will be carried out on the use of chlorine to eradicate <i>G. salaris</i>. If the experiment is successful, this method will be used for combatting the parasite in the river Driva in 2022/2023.</p>

		<p>In the Drammen region (4 rivers), a fish ladder in the lower waterfall in the river Drammenselva is closed, which reduces the anadromous stretch from about 32 km to about 19 km. There are several issues related to eradication of <i>G. salaris</i> in this region. Work has been initiated to find a solution to these problems. A chemical treatment of the 4 infected rivers in this region can most likely be carried out in the period 2024-2026.</p> <p>The National Food Safety Authority (NFSA) has decided to strengthen the supervision of aquaculture farms, slaughterhouses and process industry in the non-anadromous zone of the watercourse Drammensvassdraget.</p>
	Current status of action:	Ongoing
	If 'Completed', has the action achieved its objective?	
<b>Action A3-2:</b>	Description of action (as submitted in the IP):	The surveillance programme: Includes an epidemiological surveillance to find out more about how the river could have been infected, and what to do with the situation. It also includes a post treatment program that monitors the rivers for about 5 years before they can be declared free from <i>G. salaris</i> . Regarding monitoring, a method using e-DNA has been developed that can be more effective when screening a watercourse than traditional sampling and morphological methods. The Norwegian Veterinary Institute (NVI) has used this method for some years and they are gaining experience with it.
	Expected outcome (as submitted in the IP):	Early detection of possible infection
	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 NVI finished the post treatment surveillance programme in the water course Ranaelva in December 2020. In addition to this ordinary programme, the NVI also conducted a supplementary investigation with e-DNA analyses from three stations in the tributary watercourse Pluravassdraget in order to search for traces of rainbow trout or <i>G.salaris</i> . Fortunately, they didn't find anything
	Current status of action:	Ongoing
	If 'Completed', has the action achieved its objective?	
<b>Action A3-3:</b>	Description of action (as submitted in the IP):	The NFSA has made a contingency plan for regional and central level in the NFSA that states who will do what, when and how in case of detection of <i>G. salaris</i> . There is also an

		action plan that contains measures and collaboration between different institutions and government levels involved (the NFSA, the NEA, the county governors, and the NVI).
	Expected outcome (as submitted in the IP):	Enables quick action if the parasite is detected.
	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 NFSA has improved the Contingency Plan to bring it even more in accordance with the EU Fish Health Directive. It now also contains measures for the detection of <i>G. salaris</i> in aquaculture farms near fresh water, not only watercourses. Based on this improved Contingency Plan, the NFSA has applied for continued approval of our plan. This will ensure further use of the Norwegian agreement for National measures (ESA Dec 058/16 COL-D) to achieve free status also for the remaining 29 watercourses.
	Current status of action:	Choose an item.
	If 'Completed', has the action achieved its objective?	
<b>Action A3-4:</b>	Description of action (as submitted in the IP):	Posters, brochures and internet pages in different languages have been developed to inform about the risk of introducing <i>G. salaris</i> and how to avoid such introduction to the public. We collaborate with all our neighbour countries to avoid the parasite being spread from these countries.
	Expected outcome (as submitted in the IP):	Information that will help prevent further spread of the parasite.
	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 NFSA updated posters and brochures before the fishing season 2020 and sent this information material to regional contact persons in the NFSA throughout the whole country. They have distributed it to anglers, local representatives or owners of parts of watercourses and to the public in general. The NFSA also published the updated information on their web sitest
	Current status of action:	Ongoing
	If 'Completed', has the action achieved its objective?	
<b>Action A4-1:</b>	Description of action (as submitted in the IP):	The NVE and the NFSA requests the Norwegian Scientific Committee for Food and Environment (VKM) to: <ol style="list-style-type: none"> <li>1. Identify potential hazards associated with increasing amounts of pink salmon in Norwegian waters.</li> <li>2. Identify areas and habitats that are best suited for, and thus most vulnerable to, spread and establishment of pink salmon.</li> <li>3. Assess the consequences of spread, and potentially establishment, of pink salmon in Norwegian rivers.</li> <li>4. Assess various mitigation measures to prevent spread and establishment of pink salmon in Norway, including the risk of</li> </ol>

		negative impacts on native species associated with these measures. Monitoring and mitigation measures will be prioritized by a large increase in Pink salmon.
	Expected outcome (as submitted in the IP):	More knowledge about the impact of Pink salmon on Atlantic salmon and biodiversity, as well as effective measures to reduce the impact.
	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):	VKM concludes that pink salmon can have major negative consequences for Atlantic salmon, sea trout and sea char, as well as other biological diversity in our watercourses. An action plan against pink salmon is therefore being prepared. This plan will place great emphasis on measures to prevent the establishment of pink salmon, prioritize watercourses where measures are to be implemented, as well as monitoring the spread and establishment of self-reproducing stocks. Emphasis is also placed on acquiring new knowledge about pink salmon and the environment.
	Current status of action:	
	If 'Completed', has the action achieved its objective?	Completed in the sense that the report is finished. However, when it comes to the mitigation of the problem, see Action A4-2
<b>Action A4-2:</b>	Description of action (as submitted in the IP):	All catches of Pink salmon in both sea and rivers will be reported in a catch register. The results of mitigation measures will also be reported in priority areas, it is appropriate to monitor the spawning success of pink salmon to see if measures have the desired effect.
	Expected outcome (as submitted in the IP):	Knowledge of occurrence of Pink salmon and effective mitigation measures.
	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 system for registration of pink salmon has been taken into use and will be further developed. It is important to know the number of pink salmon that enter the watercourses, as this determines which measures are to be implemented.
	Current status of action:	Ongoing
	If 'Completed', has the action achieved its objective?	



<b>4: Additional information required under the Convention</b>
4.1 Details of any laws, regulations and programmes that have been adopted or repealed since the last notification.
The Norwegian parliament adopted several amendments to act no. 47 of 1992 relative to salmonids and fresh-water fish and related matters in 2020. Among the amendments were increasing the maximum penalty from two to five years of prison for serious infringements of the law and inclusion of a new section providing for administrative fine.
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.
4.3 Details of any new actions to prohibit fishing for salmon beyond 12 nautical miles.
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.
4.5 Details of any actions taken to implement regulatory measures under Article 13 of the Convention including imposition of adequate penalties for violations.
<b>North American Commission Members only:</b>
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.