	<b>Council</b>  <i>Annual Progress Report on Actions taken under the Implementation Plan for the Calendar Year 2021 Norway</i>	<b>CNL(22)29</b>
---	--	------------------

***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.**

<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 state of 449 Norwegian Atlantic salmon populations has been reclassified, using data from the period 2015-2019. The impact from different human activities is also determined. Only 21%

of the populations were in a good or very good state, 37 % in a moderate state, and 38 in a poor or very poor state. Escaped farmed salmon, salmon lice and infections related to salmon farming are the greatest anthropogenic threats to Norwegian wild salmon. The present mitigation measures are insufficient to stabilize and reduce these threats.

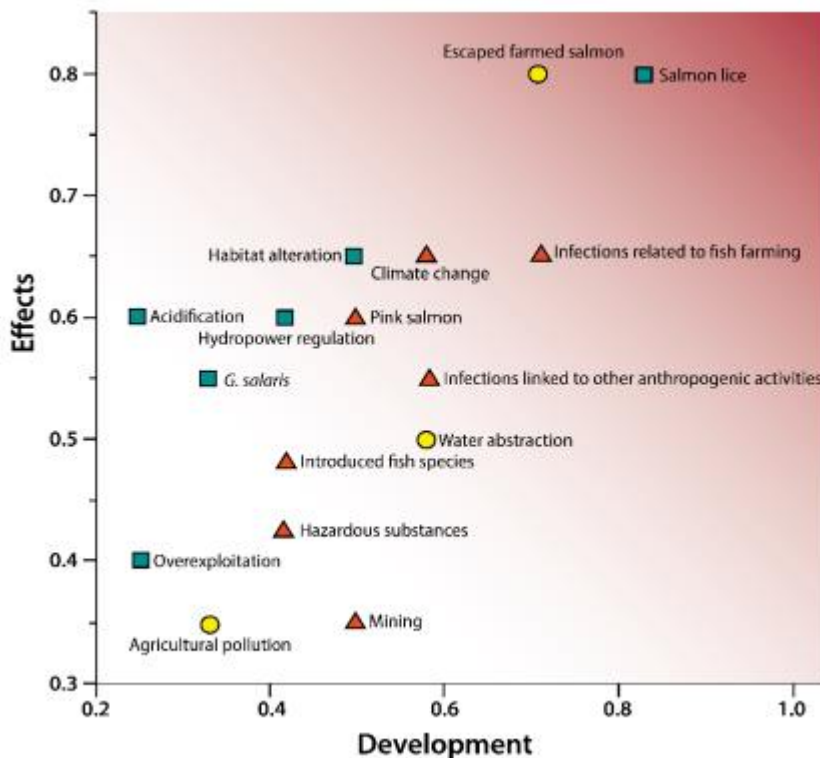


Figure 1. Ranking of 16 impact factors considered in 2021, according to their effects on wild Atlantic salmon populations and the likelihood of a further negative development. The knowledge of each impact factor and the uncertainty of further development is indicated by the colour of the markers. Green squares=Extensive knowledge and small uncertainty, yellow circles=moderate knowledge and moderate uncertainty, and red triangles=poor knowledge and high uncertainty (SACAS).

Invasive 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. The occurrence of invasive pink salmon in Norwegian rivers increased significantly in 2017, 2019 and 2021 compared to earlier years.

**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 2021 (tonnes)	197		98	295
(b) confirmed nominal catch of salmon for 2020 (tonnes)	312		215	527
(c) estimated unreported catch for 2021 (tonnes)	32		94	126

(d) number and percentage of salmon caught and released in recreational fisheries in 2021	21 356, 27%
---	-------------

### 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 2021 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 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):	A major revision of regulatory measures was conducted in 2021. As a result of this revision, mixed stock fisheries now are closed in 31 out of 49 regions from 2021. Fishing for salmon is also prohibited in 183 out of 450 rivers with salmon stocks. The remaining have got regulations adapted to current stock status.
	Current status of action:	Completed
	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 launching the new system in 2019 reported of catches in the sea by recreational anglers have increased by 200-300% each year. Nevertheless, we estimate that the reported catches make up less than 1% of legal catches in the sea by recreational anglers. A major challenge is therefor to make <a href="http://www.stangfiskesjo.miljodirektoratet.no">www.stangfiskesjo.miljodirektoratet.no</a> known to the broader public. The Norwegian Environment Agency continues to work on improving the application from feedback from users.
	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 <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>	Spawning target is revised in the regulated Kvina and Bævra rivers, based on new knowledge of wetted area and salmon distribution. A planned workshop aiming to apply the new methodology for calculation of 2nd-generation spawning targets in 50 rivers in Vestland county was postponed due to the Covid19 pandemic. The workshop will be arranged spring 2022.
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 <i>(as submitted in the IP):</i>	Long-term liming of 24 acidified salmon rivers.
	Expected outcome <i>(as submitted in the IP):</i>	Restored salmon stocks and fishing possibilities
	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>	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 <i>(as submitted in the IP):</i>	Mitigation measures for improved salmon habitat in regulated rivers.
	Expected outcome <i>(as submitted in the IP):</i>	Restored fish habitat and increased salmon production in regulated rivers.
	Progress on action to date <i>(Provide a brief overview with a quantitative measure, or other justified</i>	As a result of the follow-up of environmental terms, mitigation measures are carried out in about 60 rivers with Atlantic salmon and sea trout stocks. The measures are at different stages; starting with bottleneck analysis and ending up with specific mitigation measures and

	<i>evaluation, of progress. Other material (e.g. website links) will not be evaluated):</i>	monitoring programs. In many rivers the main goal is to assess if improved natural 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. A total of four habitat plans have been developed in 2021.
	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 address of 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):	Revision of terms of the Aura hydropower licence was completed in June 2021. Environmental flow was not implemented due to high cost compared to potential benefits. New terms were implemented, and will allow other environmental improvements to be implemented.  Revision of terms of the Trollheim hydropower licence in Surna river was completed in March 2021, with adjusted rules of operation, including environmental flow from Rinna and Bulu which will improve habitats, ramping restrictions to reduce stranding of fish, and new terms that allow other environmental improvements to be implemented.
	Current status of action:	Ongoing
	If 'Completed', has the action achieved its objective?	Both revisions are completed and are expected to improve conditions for salmon. Other revision cases are still ongoing.
<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 measure, or other justified evaluation, of progress. Other material (e.g. website links) will not be evaluated):	NVE has currently no specific requirements or action plans regarding Atlantic salmon as part of flood mitigation and climate adaptation. NVE set general environmental requirements for aquatic ecosystems as part of their responsibility on flood mitigation in river systems.  NVE, together with other national management directorates, is developing a national action plan for river

		restoration 2022-2030. Atlantic salmon is one of the priority standards.
	Current status of action:	Not started
	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):	Mainly because of impacts from genetical introgression from escaped farmed salmon on wild populations of salmon, and of impacts from sea lice on salmonid stocks the Norwegian Government in 2013 decided to establish a live Gene Bank for the Hardangerfjord area. Approximately 20 stocs 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 genbank for these stocks is completed and taken over.
	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.

	<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>A technical site-certificate is required for all sea-based aquaculture installations through regulations based on the Aquaculture act.</p> <p>For landbased aquaculture, new regulations came to effect in 2018 for new installations. For existing installations, certificates were to be issued before January 2022. Also, all new components in existing installations must be certified before use.</p> <p>NS 9416 was issued in 2013, and changes to adjust for landbased 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 <i>(as submitted in the IP):</i>	Establish more experience with farming sterile fish in commercial fish farms and research into the production of sterile farmed salmon.
	Expected outcome <i>(as submitted in the IP):</i>	Reduced hybridisation between wild and farmed fish, with a qualitative improvement in genetic integrity at population level.
	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>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.</p> <p>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 are licensed.</p> <p>Work on research and commercial level is ongoing, and several new technologies in producing sterile fish is under development.</p>
	Current status of action:	Ongoing
	If 'Completed', has the action achieved its objective?	
<b>Action A1-4:</b>	Description of action <i>(as submitted in the IP):</i>	<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 the addition of new river-systems as high-quality assessments are available. The number of rivers monitored on a yearly basis have evened out on approximately 200. A report from 2021 will be ready within summer 2022.</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 when new knowledge is available.</p> <p>Based on a «polluter pays»-perspective, the Directorate of Fisheries has implemented a practice where salmon farmers have been given an extended responsibility concerning funding and organizing the 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 of the program is to track escaped farmed fish back to its source, on a farm level. According to plan, the system will be put to use in 2022, though it will need a period of time before the databases and the program covers all the fish in the sea, thus becoming fully operational.</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.	OURO is continuing removal of fish from rivers identified through the National Monitoring program. For rivers not included in the Monitoring program, The Directorate of Fisheries has a system where rivers will be monitored, and escapees removed, when observations are reported.

	<i>website links) will not be evaluated):</i>	Additionally, The Directorate of Fisheries have contracts with professional fieldworkers/institutions aiming to remove any observed escapee found during 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):	A total of 239 Atlantic salmon populations have been classified based on genetic introgression of escaped farmed salmon. All of the 53 rivers which are defined as National Salmon Rivers have now been classified. Their genetic status is distributed across the quality classes, thus: Green (very good or good), 15 populations (28.3%); Yellow (moderate) 15 (28.3%); Orange (poor), 10 (19%) and Red (very poor), 13 (24.5%). Fourteen of the rivers that have changed status since 2019 are National Salmon Rivers. Among these, eight have been moved to a worse status and six to a better status. The Institute of Marine Research make annual risk assessments of the effects of fish farming on the environment. The 2021 assessment shows that in 10 out of 13 production areas for farmed salmon, there is a risk of further genetic changes in wild salmon due to introgression from escaped farmed salmon.
	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 where sea lice-induced mortality on wild salmon ( <i>Salmo salar</i> ) is more than 30 %, see 4.1 b.
	Progress on action to date (Provide a brief overview with a quantitative measure, or other justified evaluation, of progress. Other material (e.g.	In accordance with the Traffic Light System, the production areas (POs) are classified yearly by an Expert group. They base their reports on all available knowledge concerning sea lice, including large scale monitoring and models.

	<p><i>website links) will not be evaluated):</i></p>	<p>The table below sums the status report of sea lice induced mortality for migrating postsmolt in each PO for the last 5 years (2017-2021), made by the expert group:</p> <table border="1" data-bbox="675 414 1228 925"> <thead> <tr> <th></th> <th>2017</th> <th>2018</th> <th>2019</th> <th>2020</th> <th>2021</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>Low</td> <td>Mod</td> <td>Low</td> <td>High</td> <td>Low</td> </tr> <tr> <td>PO-3</td> <td>High</td> <td>High</td> <td>Mod</td> <td>High</td> <td>High</td> </tr> <tr> <td>PO-4</td> <td>High</td> <td>Mod</td> <td>High</td> <td>Mod</td> <td>High</td> </tr> <tr> <td>PO-5</td> <td>Mod</td> <td>Mod</td> <td>High</td> <td>Low</td> <td>Mod</td> </tr> <tr> <td>PO-6</td> <td>Low</td> <td>Low</td> <td>Low</td> <td>Low</td> <td>Low</td> </tr> <tr> <td>PO-7</td> <td>Low</td> <td>Mod</td> <td>Low</td> <td>Mod</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>Mod</td> <td>Low</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 Government decides biannually in which POs the total production capacity can grow (green light), should freeze (yellow light) or be reduced (red light), based on the expert reports and other relevant information. In February 2020, the Ministry of Trade, Industry and Fisheries concluded that PO-4 and PO-5 were defined as red areas and thus had to reduce their production capacity by 6 %, while PO-3 and PO-10 were defined as yellow. The rest were defined as green. In 2022, the Government will make a new decision as to which POs will be defined as red, yellow or green, based on the status report (above) in each PO for the last two years.</p> <p>The Norwegian Research Council organized an evaluation of the Traffic Light System in order 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>An international committee started the work in December 2020, and the report was finalized in December the year after. The report states that the Traffic Light System is "probably the most sophisticated salmon risk assessment</p>		2017	2018	2019	2020	2021	PO-1	Low	Low	Low	Low	Low	PO-2	Low	Mod	Low	High	Low	PO-3	High	High	Mod	High	High	PO-4	High	Mod	High	Mod	High	PO-5	Mod	Mod	High	Low	Mod	PO-6	Low	Low	Low	Low	Low	PO-7	Low	Mod	Low	Mod	Mod	PO-8	Low	Low	Low	Low	Low	PO-9	Low	Low	Low	Low	Low	PO-10	Low	Low	Mod	Low	Low	PO-11	Low	Low	Low	Low	Low	PO-12	Low	Low	Low	Low	Low	PO-13	Low	Low	Low	Low	Low
	2017	2018	2019	2020	2021																																																																																	
PO-1	Low	Low	Low	Low	Low																																																																																	
PO-2	Low	Mod	Low	High	Low																																																																																	
PO-3	High	High	Mod	High	High																																																																																	
PO-4	High	Mod	High	Mod	High																																																																																	
PO-5	Mod	Mod	High	Low	Mod																																																																																	
PO-6	Low	Low	Low	Low	Low																																																																																	
PO-7	Low	Mod	Low	Mod	Mod																																																																																	
PO-8	Low	Low	Low	Low	Low																																																																																	
PO-9	Low	Low	Low	Low	Low																																																																																	
PO-10	Low	Low	Mod	Low	Low																																																																																	
PO-11	Low	Low	Low	Low	Low																																																																																	
PO-12	Low	Low	Low	Low	Low																																																																																	
PO-13	Low	Low	Low	Low	Low																																																																																	

		<p>in operation around the globe in terms of the attempt to link research evidence to aquaculture policy".</p> <p>The committee then presents a total of 15 recommendations on how the traffic light system may be improved. In particular, the report focuses on the process of eliciting expert judgments, how the system handles uncertainty in the models and how to communicate that uncertainty. The evaluation is 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>The fish barrier in the river Driva has been in operation for five years: The results from the monitoring show that no fish have passed the fish barrier. All salmon and consequently all <i>G. salaris</i> are assumed to be gone upstream the fish barrier. In 2021, a large-scale experiment was carried out on the use of chlorine in Driva to eradicate <i>G. salaris</i>. The results show that the use of chlorine is feasible and with a good probability of success. We are therefore planning for the eradication of <i>G. salaris</i> in all four infected watercourses in the Driva region in 2022/2023.</p> <p>In the Drammen region (four rivers), a fish ladder in the lower waterfall in the river Drammen 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 issues. A chemical treatment of the four infected rivers in this region can most likely be carried out within the period 2024-2026.</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 river Drammen
	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 monitor the rivers for about 5 years before they can be declared free from G. salaris. 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. 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):	<p>The Norwegian Veterinary Institute (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 G.salaris. Fortunately, they didn't find anything.</p> <p>In the Drammen region, the planned measures for combating G. salaris have continued in accordance with the IP. The surveillance programme includes an epidemiological surveillance, especially upstream of the anadromous part of the watercourse. To substantiate the likely absence of G. salaris from these areas, the Norwegian Veterinary Institute has carried out several studies on behalf of the Norwegian Food Health Authorities in the period 2014-2018 and these studies did not find any evidence for the presence of G. salaris. Continued epidemiological mapping is carried out to ensure implementation of sufficient eradication measures. The surveillance program is carried out as a combination of environmental DNA (eDNA) monitoring and electrofishing including parasitological examination. A post treatment program monitors the rivers for at least 5 years before they can be declared free from G. salaris. In the Skibotn region the planned surveillance before</p>

		declaring disease free status for G. salaris will be completed in 2022.
	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):	NFSA has made a contingency plan for regional and central level in NFSA that states who will do what, when and how in case of detection of G. salaris. There is also an action plan that contain measures and collaboration between different institutions and government levels involved (NFSA, The Norwegian Environmental Agency, the county governors, and the Norwegian Veterinary Institute (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. It now also contains measures for the detection of G. salaris in aquaculture farms near fresh water, not only watercourses. The EFTA Surveillance Authority has approved the new Contingency Plan. This will ensure further use of the Norwegian agreement for National measures (ESA Decision No: 203/21/COL) to achieve free status also for the remaining 22 watercourses.
	Current status of action:	Ongoing
	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 has been developed to inform about the risk of introducing G. salaris 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 information to prevent the spread of G. salaris has continued. Information material has been distributed to anglers, local representatives of watercourses and to the public in general throughout the whole country
	Current status of action:	Ongoing
	If 'Completed', has the action achieved its objective?	
	Description of action	The Norwegian Environment Agency and the Norwegian Food Safety Authority requests the Norwegian Scientific Committee

<b>Action A4-1:</b>	<i>(as submitted in the IP):</i>	for Food and Environment to: 1. Identify potential hazards associated with increasing amounts of pink salmon in Norwegian waters. 2. Identify areas and habitats that are best suited for, and thus most vulnerable to, spread and establishment of pink salmon. 3. Assess the consequences of spread, and potentially establishment, of pink salmon in Norwegian rivers. 4. Assess various mitigation measures to prevent spread and establishment of pink salmon in Norway, including the risk of 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 <i>(as submitted in the IP):</i>	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 <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>	In 2021, large quantities of pink salmon were registered in Norwegian rivers, especially in the northernmost rivers. Substantial resources were spent trying to capture as much of this alien species as possible to hinder reproduction. Removal of pink salmon from rivers and registration of the number of fish was prioritized in 2021. An expert group has been established to provide advice on how measures against pink salmon best can be implemented. Different methods for removal of pink salmon will be developed and tested in 2022 so we are prepared when the next major invasion is expected in 2023.
	Current status of action:	Ongoing
	If 'Completed', has the action achieved its objective?	
<b>Action A4-2:</b>	Description of action <i>(as submitted in the IP):</i>	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 <i>(as submitted in the IP):</i>	Knowledge of occurrence of Pink salmon and effective mitigation measures.
	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>	Registration of pink salmon has been included in the forms for catch registration. It is important to know the number of pink salmon that enter the watercourses, as this determines which measures are to be implemented. Everyone who has been given permission to fish for pink salmon outside ordinary fishing is obliged to state how many pink salmon are caught. With catch statistics from both the ordinary salmon fishing and the extraordinary fishing for the removal of pink salmon, we have a good

		overview of the number of pink salmon in Norwegian watercourses.
	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.
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.