	Council *Annual Progress Report on Actions taken under the Implementation Plan for the Calendar Year 2022* *Norway*	**CNL(23)45**

Annual Progress Report on Actions taken under the Implementation Plan for the Calendar Year 2022

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 2023**.

Party:	**Norway**
Jurisdiction / Region:	

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).***

Section 3.3 Action A4-1 to A4-3 is revised. Revised IP- sent to the Secretariat 1 November 2022.

1.2 Describe any major new initiatives or achievements for salmon conservation and management that you wish to highlight.

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.

In 2021, the pre-fishery abundance was estimated at about 403 000 wild salmon, lower 2021 than ever recorded before (time series starting in 1980). Efforts to map sea survival are increasing by

the establishment of new monitoring rivers, and so far, results show that sea survival vary significantly among rivers and years. The management targets for the period 2018-2021 were attained, or likely attained, for 93% of the populations. This is among the best results regarding attainment of the management targets since the first evaluation was done in 2009.

In two thirds (150) of the 239 screened rivers, there were indications of genetic introgression from escaped farmed salmon in the wild population, of which 68 populations were severely impacted.

The number of salmon returning to the rivers each year is reduced due to mortality caused by salmon lice. This reduction threatens salmon populations in the most impacted areas, and has significantly reduced the harvestable surplus.

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, including Atlantic salmon. The occurrence of invasive pink salmon in Norwegian rivers increased significantly in 2017, 2019 and 2021 compared to earlier years. See section 3.3, Action A4.

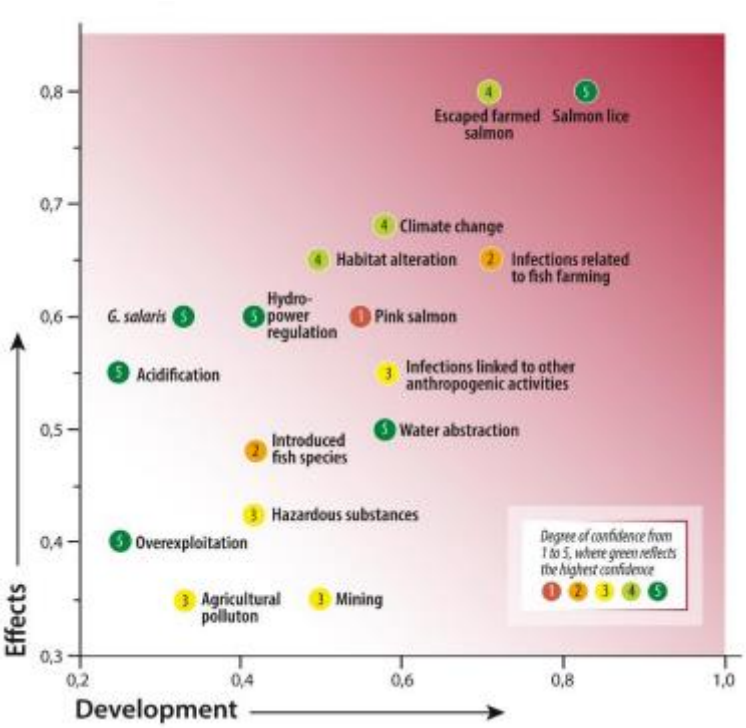

Figure: *Ranking of 16 impact factors considered in 2021, according to their effects on wild Atlantic salmon populations, and the likelihood of a further negative development. Confidence for the assessment of effect by each threat is indicated by the color of the markers, where green indicates the highest confidence level and red the lowest. (SACAS 2022)*

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 2022 (tonnes)	256		134	390

(b) confirmed nominal catch of salmon for 2021 (tonnes)	197		98	295
(c) estimated unreported catch for 2022 (tonnes)	42		125	167
(d) number and percentage of salmon caught and released in recreational fisheries in 2022	27 198, 28 percent, (124 tonnes)			

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. Please report in relation to the reporting year only or the most relevant recent year. For all actions, provide* ***clear and concise quantitative*** *information to demonstrate progress. In circumstances where quantitative information cannot be provided for a particular action because of its nature, a clear rationale must be given for not providing quantitative information and other information should be provided to enable progress with that action to be evaluated. While referring to additional material (e.g. via links to websites) may assist those seeking more detailed information, this will not be evaluated by the Review Group.*

Action F1:	Description of action (*as submitted in the IP)*	Development, testing and evaluation of an expanded sea survival surveillance program.
	Expected outcome (*as submitted in the IP*)	Increased knowledge about salmon recrutiment, growth and sea survival at a national and regional scale.
	Approach for monitoring effectiveness & enforcement (*as submitted in the IP*)	Monitor factual progress against planned progress
	Progress on action to date *(Provide a brief overview with a quantitative measure, or other justified evaluation, of progress. If sub-actions are completed during the reporting year, this should be made clear. 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 was evaluated in 2022, and one location is terminated from 2023. As search for replacement will be done.
	Current status of action *(Please note: 'Completed' means that the overall action is complete for the lifetime of the third*	Ongoing

	reporting cycle. If it is an ongoing action that is reported on annually, it should be marked as 'Ongoing')	
	If 'Completed', has the action achieved its objective?	
Action F2:	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
	Approach for monitoring effectiveness & enforcement (*as submitted in the IP*)	(a) Scope of fishery inspection and number of revealed offences. (b) Revised legislation.
	Progress on action to date *(Provide a brief overview with a quantitative measure, or other justified evaluation, of progress. If sub-actions are completed during the reporting year, this should be made clear. 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 2021 and 2022. The overall number of revealed offences has decreased, especially in some regions, despite the increased efforts. (b) The salmon and inland fisheries act has been revised and stricter reactions to violation of legislation are introduced.
	Current status of action *(Please note: 'Completed' means that the overall action is complete for the lifetime of the third reporting cycle. If it is an ongoing action that is reported on annually, it should be marked as 'Ongoing')*	Completed
	If 'Completed', has the action achieved its objective?	
Action F3:	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.
	Approach for monitoring effectiveness & enforcement	-Revised regulations -Annual assessment of numbers of rivers attaining their management target.

	(*as submitted in the IP*)	-Monitoring spawning target attainment.
	Progress on action to date *(Provide a brief overview with a quantitative measure, or other justified evaluation, of progress. If sub-actions are completed during the reporting year, this should be made clear. Other material (e.g. website links) will not be evaluated)*	The major revision of regulatory measures was completed in 2021. Minor additional changes in were implemented in 2022. Monitoring of salmon stocks reveals that management targets for the period 2018-2021 were attained, or likely attained, for 93% of the populations. This is among the best results regarding attainment of the management targets since the first evaluation was done in 2009.
	Current status of action *(Please note: 'Completed' means that the overall action is complete for the lifetime of the third reporting cycle. If it is an ongoing action that is reported on annually, it should be marked as 'Ongoing')*	Completed
	If 'Completed', has the action achieved its objective?	
Action F4:	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
	Approach for monitoring effectiveness & enforcement (*as submitted in the IP*)	Number of users and reported catches by anglers in the sea.
	Progress on action to date *(Provide a brief overview with a quantitative measure, or other justified evaluation, of progress. If sub-actions are completed during the reporting year, this should be made clear. 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 www.stangfiskesjo.miljodirektoratet.no. 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 *(Please note: 'Completed' means that the overall action is complete for the lifetime of the third*	Ongoing

	reporting cycle. If it is an ongoing action that is reported on annually, it should be marked as 'Ongoing')	
	If 'Completed', has the action achieved its objective?	
Action F5:	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.
	Approach for monitoring effectiveness & enforcement (*as submitted in the IP*)	Number of rivers with revised spawning targets.
	Progress on action to date *(Provide a brief overview with a quantitative measure, or other justified evaluation, of progress. If sub-actions are completed during the reporting year, this should be made clear. Other material (e.g. website links) will not be evaluated)*	Second-generation spawning targets is calculated for approx. 50 rivers in Vestland county. In 2023 the revised spawning targets will be sent on a hearing to stakeholders. Revision of spawning targets in the remaining rivers will be done successively, county by county.
	Current status of action *(Please note: 'Completed' means that the overall action is complete for the lifetime of the third reporting cycle. If it is an ongoing action that is reported on annually, it should be marked as 'Ongoing')*	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. Please report in relation to the reporting year only or the most relevant recent year. For all actions,*

	*provide **clear and concise** quantitative information to demonstrate progress. In circumstances where quantitative information cannot be provided for a particular action because of its nature, a clear rationale must be given for not providing quantitative information and other information should be provided to enable progress with that action to be evaluated. While referring to additional material (e.g. via links to websites) may assist those seeking more detailed information, this will not be evaluated by the Review Group.*	
Action H1:	Description of action (*as submitted in the IP)*	Long-term liming of 24 acidified salmon rivers.
	Expected outcome (*as submitted in the IP*)	Restored salmon stocks and fishing possibilities
	Approach for monitoring effectiveness & enforcement (*as submitted in the IP*)	Biennially surveys on juvenile salmon populations and mandatory reports of annual river catches of salmon
	Progress on action to date *(Provide a brief overview with a quantitative measure, or other justified evaluation, of progress. If sub-actions are completed during the reporting year, this should be made clear. 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. The liming has led to a marked improvement in water quality, increased diversity of benthic invertebrates and significantly increased production and catches of salmon. The water quality largely satisfies the pH target throughout the year in the limed rivers, but relatively high values of toxic aluminum are occasionally measured in some rivers. The monitoring shows that the liming must be continued to ensure that organisms sensitive to acidification, including salmon, will be able to live and reproduce in these rivers. However, lime consumption has decreased significantly in line with recovery after the acidification period. The funding is provided by the Norwegian Government. In 2022, the cost was about 50 mill NOK (≈ 4.1 mill GBP).
	Current status of action *(Please note: 'Completed' means that the overall action is complete for the lifetime of the third reporting cycle. If it is an ongoing action that is reported on annually, it should be marked as 'Ongoing')*	Ongoing
	If 'Completed', has the action achieved its objective?	

Action H2:	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
	Approach for monitoring effectiveness & enforcement (*as submitted in the IP*)	Monitoring number of habitat plans and effectiveness of mitigation measures in regulated rivers
	Progress on action to date *(Provide a brief overview with a quantitative measure, or other justified evaluation, of progress. If sub-actions are completed during the reporting year, this should be made clear. Other material (e.g. website links) will not be evaluated)*	Mitigation measures are carried out in about 70 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 *(Please note: 'Completed' means that the overall action is complete for the lifetime of the third reporting cycle. If it is an ongoing action that is reported on annually, it should be marked as 'Ongoing')*	Ongoing
	If 'Completed', has the action achieved its objective?	
Action H2-2:	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.
	Approach for monitoring effectiveness & enforcement (*as submitted in the IP*)	Revision of terms for hydropower regulation licenses is the main tool to improve conditions for salmon in regulated rivers, by revising the terms of operations. By October 2021 47 cases are ongoing, in the following stages: (One case may contain several licenses) - 12 cases have been suggested for revision - 5 cases are opened - 24 cases have produced the background documented needed for hearing and further handling - 6 cases are finished by the directorate and handled to the ministry for final decision.

		17 cases are finalised and have been given a new set of license conditions including terms of operations. 3 of these are in salmon rivers.
	Progress on action to date *(Provide a brief overview with a quantitative measure, or other justified evaluation, of progress. If sub-actions are completed during the reporting year, this should be made clear. Other material (e.g. website links) will not be evaluated)*	By 31 December 2022 59 cases concerning revision of terms are ongoing, in the following stages: (One case may contain several licenses) - 20 cases have been suggested for revision - 8 cases are opened - 23 cases have produced the background documented needed for hearing and further handling - 8 cases are finished by the directorate and handled to the ministry for final decision. By 31 Dec 2022 22 revision cases are finalised, 4 of these in salmon rivers. One of the completed ones in 2022 was the hydropower licence in Røssåga (June 2022), which is a river with Atlantic salmon. The case resulted in adjusted rules of operation for Nedre Røssåga power plant and environmental flow in Nedre Røssåga river. The revised terms will improve habitats and reduce stranding of fish. Also, new terms will allow other environmental improvements to be implemented
	Current status of action *(Please note: 'Completed' means that the overall action is complete for the lifetime of the third reporting cycle. If it is an ongoing action that is reported on annually, it should be marked as 'Ongoing')*	Ongoing
	If 'Completed', has the action achieved its objective?	
Action H3:	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.
	Approach for monitoring effectiveness & enforcement (*as submitted in the IP*)	Norway has reported rivers where measures (e.g. for opening old floodplains) have been undertaken at flood protection facilities that also safeguard the salmon stock and other elements of biological diversity. This action has previously been descriptively reported. No national target has been set. Norway has not defined an objective of a certain number of rivers that will implement such measures. In Norway, other challenges than flood protection facilities are considered to be of more importance to salmon. In some cases, a flood event can destroy older flood protection constructions. When such constructions

		are to be repaired, environmental measures can be undertaken at det same time. It will therefore be very hard to plan for such measures. No further monitoring is planned.
	Progress on action to date *(Provide a brief overview with a quantitative measure, or other justified evaluation, of progress. If sub-actions are completed during the reporting year, this should be made clear. Other material (e.g. website links) will not be evaluated)*	NVE can either support flood mitigation financially or implement measures directly. In 2022 NVE finalised 20 flood- and environmental measures. NVE set general environmental requirements for aquatic ecosystems as part of NVE's management of 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 *(Please note: 'Completed' means that the overall action is complete for the lifetime of the third reporting cycle. If it is an ongoing action that is reported on annually, it should be marked as 'Ongoing')*	Choose an item.
	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. Please report in relation to the reporting year only or the most relevant recent year. 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 A1-1:	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. Simultanously 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.

	Approach for monitoring effectiveness & enforcement (*as submitted in the IP*)	Consider all relevant statistics and monitoring programs and see if the number of escapees is reduced from the farms, as well as in the rivers. The Directorate of Fisheries will investigate episodes concerning strayed/farmed salmons found in fjords and rivers and will when possible track the fish to the farm of origin and use this knowledge to optimize the control regimes.
	Progress on action to date *(Provide a brief overview with a quantitative measure, or other justified evaluation, of progress. If sub-actions are completed during the reporting year, this should be made clear. Other material (e.g. website links) will not be evaluated)*	The building of the live genbank for affected stocks is completed and taken over. The collection of fish for the live gene bank is on schedule. In eight years, about 80% of the necessary fish are collected. 100 % collection is expected within the next three years.
	Current status of action *(Please note: 'Completed' means that the overall action is complete for the lifetime of the third reporting cycle. If it is an ongoing action that is reported on annually, it should be marked as 'Ongoing')*	Ongoing
	If 'Completed', has the action achieved its objective?	
Action A1-2:	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.
	Approach for monitoring effectiveness & enforcement (*as submitted in the IP*)	Continuously evaluate reports from scientists and fish farmers using sterile fish.
	Progress on action to date *(Provide a brief overview with a quantitative measure, or other justified evaluation, of progress. If sub-actions are completed during the reporting year,*	Regulations are contionously revised and adjusted as new technical solutions are developend, and environmental challenges identified. Technical site-certificate are required for all sea-based aquaculture installations through regulations based in the Aquaculture act.

	this should be made clear. Other material (e.g. website links) will not be evaluated)	NS 9416 was issued in 2013. For landbased aquaculture new regulations came to effect in 2018 for new installations. For existing installations, certificate was to be issued before january, 2021. Also, all new components in exisitng installations must be must be certified before use. The Norwegian standard for floating fish farms, NS-9415, was updated in 2021. The government has established revised regulations for designing and operating farming facilities (NYTEK23), with regard to reducing the risk of escapees. The regulations have been in effect since January 1st 2023. Stricter requirements have been introduced for equipment known to have been involved in situations where salmon has escaped, and for fish farmers to be able to document that they meet the requirements set in the regulations. Furthermore, the government's authority to impose a fee when regulations have been breached has been extended.
	Current status of action *(Please note: 'Completed' means that the overall action is complete for the lifetime of the third reporting cycle. If it is an ongoing action that is reported on annually, it should be marked as 'Ongoing')*	Ongoing
	If 'Completed', has the action achieved its objective?	
Action A1-3:	Description of action (*as submitted in the IP)*	Establish more experience with farming sterile fish n 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
	Approach for monitoring effectiveness & enforcement (*as submitted in the IP*)	Evaluation of programs and studies made by relevant research institutions.
	Progress on action to date *(Provide a brief overview with a quantitative measure, or other justified evaluation, of progress. If sub-actions are completed*	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

	during the reporting year, this should be made clear. Other material (e.g. website links) will not be evaluated)	using triploid fish in "green" salmon farm licenses due to welfare considerations. Between 2020 and 2023 commercial production of salmon for consumption was lisenced as part of a research project. But as of 2023 all commercial licences are suspended. Work on research and commercial level are ongoing, and several new technologies producing sterile fish is under development from several research institutions.
	Current status of action *(Please note: 'Completed' means that the overall action is complete for the lifetime of the third reporting cycle. If it is an ongoing action that is reported on annually, it should be marked as 'Ongoing')*	Ongoing
	If 'Completed', has the action achieved its objective?	
Action A1-4:	Description of action (*as submitted in the IP)*	Further developing and improving the National monitoring program of escaped salmon in the rivers. This means: - including relevant rivers when data quality is sufficient, - testing and evaluating relevant field methods for monitoring escaped salmon - further standardising methods for analysing data from monitoring activities.
	Expected outcome (*as submitted in the IP*)	Reduced hybridisation between wild and farmed fish, with a qualitative improvement in genetic integrity at population level.
	Approach for monitoring effectiveness & enforcement (*as submitted in the IP*)	Evaluation of programs and studies made by relevant research institutions.
	Progress on action to date *(Provide a brief overview with a quantitative measure, or other justified evaluation, of progress. If sub-actions are completed during the reporting year, this should be made clear. Other material (e.g. website links) will not be evaluated)*	The national program for monitoring escaped salmon has been running since 2014. It has been continued on a yearly basis, with the addition of new river-systems where high quality assesments are available. The number of rivers monitored on a yearly basis has evened out on app. 200. In 2021, the number of monitored rivers were down to 178, mostly due to difficult conditions in the fall/field season. The report from 2022 will be ready within summer 2023. 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 riversystems. These field experiments

		are continued on a yearly basis. The Field "Hand-book" will be updated continously as new knowledge becomes available. Based on the «polluter pays»-perspective, the Directorate of Fisheries has implemented a practice where salmon farmers have been given an extended responsibility concerning funding and organizing monitoring and recapture in salt- and freshwater after escape incidents.
	Current status of action *(Please note: 'Completed' means that the overall action is complete for the lifetime of the third reporting cycle. If it is an ongoing action that is reported on annually, it should be marked as 'Ongoing')*	Ongoing
	If 'Completed', has the action achieved its objective?	
Action A1-5:	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.
	Approach for monitoring effectiveness & enforcement (*as submitted in the IP*)	Evaluation of programs and studies made by relevant research institutions.
	Progress on action to date *(Provide a brief overview with a quantitative measure, or other justified evaluation, of progress. If sub-actions are completed during the reporting year, this should be made clear. Other material (e.g. website links) will not be evaluated)*	OURO is continuing the removal of fish from rivers identified through the Nation 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 there is reports of observations. Additionally, The Directorate of Fisheries has contracts with professional fieldworkers/institutions aiming at removing any observed escapees found during other field-work in the rivers.
	Current status of action *(Please note: 'Completed' means that the overall action is complete for the lifetime of the third reporting cycle. If it is an*	Ongoing

	ongoing action that is reported on annually, it should be marked as 'Ongoing')	
	If 'Completed', has the action achieved its objective?	
Action A1-6:	Description of action (*as submitted in the IP)*	The Norwegian Environment Agency funds a monitoring project on genetical integrity in wild Atlantic Salmon poulations.
	Expected outcome (*as submitted in the IP*)	Reduced hybridisation between wild and farmed fish, with a qualitative improvement in genetic integrity at population level.
	Approach for monitoring effectiveness & enforcement (*as submitted in the IP*)	Classification of genetic integrity is updated every fifth year in accordance to the Quality Norm for Atlantic salmon.
	Progress on action to date *(Provide a brief overview with a quantitative measure, or other justified evaluation, of progress. If sub-actions are completed during the reporting year, this should be made clear. 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 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 2022 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 *(Please note: 'Completed' means that the overall action is complete for the lifetime of the third reporting cycle. If it is an ongoing action that is reported on annually, it should be marked as 'Ongoing')*	Ongoing
	If 'Completed', has the action achieved its objective?	

<table>
<tr><td rowspan="4">Action A2:</td><td>Description of action (as submitted in the IP)</td><td>Continuous implementation of the Traffic Light System and the regulations related to production areas, and sea lice monitoring and control in fish farms.</td></tr>
<tr><td>Expected outcome (as submitted in the IP)</td><td>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 (Salmo salar) is more than 30 %, see 4.1 b.</td></tr>
<tr><td>Approach for monitoring effectiveness & enforcement (as submitted in the IP)</td><td>Monitoring this impact by using different scientific methods of modelling as well as monitoring in the field. Early reports on impact in the production areas from experts as a part of the Traffic Light System.</td></tr>
<tr><td>Progress on action to date (Provide a brief overview with a quantitative measure, or other justified evaluation, of progress. If sub-actions are completed during the reporting year, this should be made clear. Other material (e.g. website links) will not be evaluated)</td><td>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.

The table below sums the status report of sea lice induced mortality for migrating postsmolt in each PO for the last 5 years (2018-2022), made by the expert group

<table>
<tr><th></th><th>2018</th><th>2019</th><th>2020</th><th>2021</th><th>2022</th></tr>
<tr><td>PO1</td><td>Low</td><td>Low</td><td>Low</td><td>Low</td><td>Low</td></tr>
<tr><td>PO2</td><td>Mod</td><td>Low</td><td>High</td><td>Low</td><td>Mod</td></tr>
<tr><td>PO3</td><td>High</td><td>Mod</td><td>High</td><td>High</td><td>High</td></tr>
<tr><td>PO4</td><td>Mod</td><td>High</td><td>Mod</td><td>High</td><td>High</td></tr>
<tr><td>PO5</td><td>Mod</td><td>High</td><td>Low</td><td>Mod</td><td>Mod</td></tr>
<tr><td>PO6</td><td>Low</td><td>Low</td><td>Low</td><td>Low</td><td>Mod</td></tr>
<tr><td>PO7</td><td>Mod</td><td>Low</td><td>Mod</td><td>Mod</td><td>Mod</td></tr>
<tr><td>PO8</td><td>Low</td><td>Low</td><td>Low</td><td>Low</td><td>Mod</td></tr>
<tr><td>PO9</td><td>Low</td><td>Low</td><td>Low</td><td>Low</td><td>Low</td></tr>
<tr><td>PO10</td><td>Low</td><td>Mod</td><td>Low</td><td>Low</td><td>Low</td></tr>
<tr><td>PO11</td><td>Low</td><td>Low</td><td>Low</td><td>Low</td><td>Low</td></tr>
<tr><td>PO12</td><td>Low</td><td>Low</td><td>Low</td><td>Low</td><td>Low</td></tr>
<tr><td>PO13</td><td>Low</td><td>Low</td><td>Low</td><td>Low</td><td>Low</td></tr>
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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. The most recent decision was made in June 2022, when the Ministry of Trade, Industry and Fisheries concluded that 2 POs (PO3 and 4) had to reduce their production capacity by 6 %. 3 POs (PO2, 5 and 7) 8 POs (PO1, 6 and 8-13) were granted</td></tr>
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		growth. Throughout the period that the Traffic Light System has been in place: three different POs have been labelled red, though not more than 2 at the same time. 1 PO has been coloured red every time. 6 POs have been coloured green every time. 6 POs have been coloured with different colours, 4 of which have alternated between green and yellow and 2 of which have alternated between yellow and red. An international comitté engaged by the Norwegian Research Council evaluated the Traffic Light System in order to: 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. Assess to what extent the recommendations from the Steering group to the Ministry of Trade, Industry and Fisheries reflect the scientific evidence. The report was finalized in 2021, and states that the Traffic Light System is "probably the most sophisticated salmon risk assessment in operation around the globe in terms of the attempt to link research evidence to aquaculture policy". The comitté presented a total of 15 recommendations on how the traffic light system may be improved. In particular, the report focuses on the process of elicitating 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. Some of the recommendations have already been implemented.
	Current status of action *(Please note: 'Completed' means that the overall action is complete for the lifetime of the third reporting cycle. If it is an ongoing action that is reported on annually, it*	Ongoing

	should be marked as 'Ongoing')	
	If 'Completed', has the action achieved its objective?	
Action A3-1:	Description of action (*as submitted in the IP)*	Eradicate G. salaris 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.
	Expected outcome (*as submitted in the IP*)	An optimistic prognosis is that the eradication of G. salaris 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 G. salaris in 2029 and the Drammen region a couple of years later.
	Approach for monitoring effectiveness & enforcement (*as submitted in the IP*)	Treated rivers will be monitored closely over a period of 5 years after treatment before the disease can be declared as eradicated.
	Progress on action to date *(Provide a brief overview with a quantitative measure, or other justified evaluation, of progress. If sub-actions are completed during the reporting year, this should be made clear. Other material (e.g. website links) will not be evaluated)*	There were 8 rivers infected with G. salaris (Driva and Drammen region) in 2022. The fish barrier in the river Driva has been in operation for six years: The results from the monitoring show that no fish have passed the fish barrier. All salmon and consequently all G. salaris are assumed to be gone upstream the fish barrier. In August 2022 the Driva-region were chemically treated. The last treatment in this region will take place in August 2023. The re-establishment of salmon stocks has been initiated and the first release of salmon will be in the spring 2024. In the Drammen region (four rivers), The NFSA will continue the supervision of aquaculture farms, slaughterhouses, and other industrial activities in the non-anadromous zone of the river Drammen. As reported last year, the fish ladder in the lower waterfall in the river Drammen is closed, reducing the anadromous stretch from about 32 km to about 19 km. There are several issues related to eradication of G. salaris 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 2025-2027.
	Current status of action	Ongoing

	(Please note: 'Completed' means that the overall action is complete for the lifetime of the third reporting cycle. If it is an ongoing action that is reported on annually, it should be marked as 'Ongoing')	
	If 'Completed', has the action achieved its objective?	
Action A3-2:	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
	Approach for monitoring effectiveness & enforcement (*as submitted in the IP*)	Annually G. salaris surveillance reports.
	Progress on action to date *(Provide a brief overview with a quantitative measure, or other justified evaluation, of progress. If sub-actions are completed*	At the end of 2022, only 8 of the originally 51 infected watercourses still have the presence of G. salaris. The rivers Skibotnelva, Signaldalselva and Kitdalselva were declared free from G. salaris in autumn 2022, after 43 years of infection. The monitoring of Fustavassdraget is in its last year, according to the post treatment program. As long as the monitoring does not detect G. salaris, the watercourse and the entire Vefsna region will be declared free from G. salaris in 2023.

	during the reporting year, this should be made clear. Other material (e.g. website links) will not be evaluated)	Three surveillance programs were performed by the Norwegian Veterinary Institute (NVI) during 2022 and no G. salaris was detected in the sample material from Norwegian rivers and fish farms. In 2022, the Driva region (consisting of the rivers Driva, Litldalselva, Usma and Batnfjordelva) was treated with a combination of chlorine and rotenon. The Drammen region (consisting of the rivers Drammenselva, Lierelva, Sandeelva and Selvikelvassdraget) is expected to be free from G. salaris after treatment with rotenon. The chemical treatments that the Norwegian authorities has used to erradicate this parasite confirms that the strategy has been successful so far. Thus, there is reason to believe that the risk for further spread of G. salaris within Norway is now significantly reduced. On the other side, the situation on the Russian side of the border is alarming, since G. salaris is present in rivers leading to the lake Kvitsjøen. Additionally, two rivers and some rainbow trout farms situated in the Kola Peninsula closer to the border with Norway are now infected. Three surveillance programs were performed by the Norwegian Veterinary Institute (NVI) during 2022 and no G. salaris was detected in the sample material from Norwegian rivers and fish farms.)
	Current status of action *(Please note: 'Completed' means that the overall action is complete for the lifetime of the third reporting cycle. If it is an ongoing action that is reported on annually, it should be marked as 'Ongoing')*	Ongoing
	If 'Completed', has the action achieved its objective?	
Action A3-3:	Description of action	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

	(*as submitted in the IP)*	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
	Approach for monitoring effectiveness & enforcement (*as submitted in the IP*)	Existing contingency plans for different levels
	Progress on action to date *(Provide a brief overview with a quantitative measure, or other justified evaluation, of progress. If sub-actions are completed during the reporting year, this should be made clear. Other material (e.g. website links) will not be evaluated)*	The NFSA follows the Contingency Plan established in 2021 to summarize EU regulations, preventive measures and monitoring the status of the rivers
	Current status of action *(Please note: 'Completed' means that the overall action is complete for the lifetime of the third reporting cycle. If it is an ongoing action that is reported on annually, it should be marked as 'Ongoing')*	Ongoing

	If 'Completed', has the action achieved its objective?	
Action A3-4:	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.
	Approach for monitoring effectiveness & enforcement (*as submitted in the IP*)	Existence of updated and available information.
	Progress on action to date *(Provide a brief overview with a quantitative measure, or other justified evaluation, of progress. If sub-actions are completed during the reporting year, this should be made clear. Other material (e.g. website links) will not be evaluated)*	The information to prevent the spread og G. salaris is in a continuous process. Information material has been distributed to anglers, local representatives of watercourses and to the public in general throughout the whole country. In 2023, the NFSA will upgrade the existing information from brochures and posters
	Current status of action *(Please note: 'Completed' means that the overall action is complete for the lifetime of the third reporting cycle. If it is an*	Choose an item.

	ongoing action that is reported on annually, it should be marked as 'Ongoing')	
	If 'Completed', has the action achieved its objective?	
Action A4-1:	Description of action (*as submitted in the IP)*	As far as possible, prevent pink salmon from migrating up rivers to reproduce. The most important measure is to establish fish traps as far down into the rivers as possible. Here, pink salmon can be removed, and local species released into the river. Other capture methods will also be used.
	Expected outcome (*as submitted in the IP*)	A significantly smaller number of pink salmon spawning in rivers with implemented measures.
	Approach for monitoring effectiveness & enforcement (*as submitted in the IP*)	The rivers upstream of the fish traps will be monitored to see how many pink salmon have managed to pass the trap.
	Progress on action to date *(Provide a brief overview with a quantitative measure, or other justified evaluation, of progress. If sub-actions are completed during the reporting year, this should be made clear. Other material (e.g. website links) will not be evaluated)*	In 2023, it is expected that large quantities of pink salmon will reach the Norwegian coast and migrate up the rivers. In 2022, preparations were therefore carried out to prevent pink salmon from migrating up the rivers to spawn. The most important measure is to establish different types of traps in the rivers which are located in the farthest north and east of Norway. There is a plan for the type of traps to be used in the various rivers, and agreements are being made with personnel who will operate the fish traps. A monitoring program has been drawn up to look at the effect of the measure and whether any negative effects occur.
	Current status of action *(Please note: 'Completed'*	Ongoing

	means that the overall action is complete for the lifetime of the third reporting cycle. If it is an ongoing action that is reported on annually, it should be marked as 'Ongoing')	
	If 'Completed', has the action achieved its objective?	
Action A4-2:	Description of action (*as submitted in the IP)*	Research projects will be carried out to obtain knowledge about the desired and undesirable effect of fish traps. More knowledge is also needed about the negative consequences of establishing pink salmon on ecosystems and water quality.
	Expected outcome (*as submitted in the IP*)	Increase knowledge about pink salmon and measures to reduce the impact on natural populations of anadromous salmonids.
	Approach for monitoring effectiveness & enforcement (*as submitted in the IP*)	Continuously evaluate reports from scientists.
	Progress on action to date *(Provide a brief overview with a quantitative measure, or other justified evaluation, of progress. If sub-actions are completed during the reporting year, this should be made clear. Other material (e.g. website*	An extensive monitoring/research program is planned to record the effects of the various traps and whether there are negative effects on native species. As far as financially possible, research projects will also be implemented to look at the ecological effects of pink salmon in the rivers One of the concerns related to the pink salmon is the potential for the pink salmon to be a new carrier for the parasite Gyrodactylus salaris. The risk is considered to be low at this point, however inspectors from the NFSA will take 30 fin pink salmon samples to be analysed for Gyrodactylus salaris in 2023. The NFSA also plans to take eDNA tests upstream and downstream the rivers.

	links) will not be evaluated)	
	Current status of action *(Please note: 'Completed' means that the overall action is complete for the lifetime of the third reporting cycle. If it is an ongoing action that is reported on annually, it should be marked as 'Ongoing')*	Ongoing
	If 'Completed', has the action achieved its objective?	
Action A4-3:	Description of action (*as submitted in the IP)*	In order to obtain an overview of the development of the pink salmon population and the spread of the species, good registration systems are needed. Information on the catch of pink salmon must be obtained from different registers. One is catch reports from the organized catch of pink salmon (the fish traps and other organized measures). Another is the catch reporting from fishermen. It is also important to include the catch of pink salmon in the sea.
	Expected outcome (*as submitted in the IP*)	Obtain the best possible overview of the distribution and number of pink salmon in Norwegian waters.
	Approach for monitoring effectiveness & enforcement (*as submitted in the IP*)	Good systems must be established for reporting pink salmon, especially in areas with organized catches. In these areas, monitoring will also be carried out in the watercourses to see how much pink salmon have not been caught.
	Progress on action to date *(Provide a brief overview with a quantitative measure, or other justified evaluation, of*	A registration system was developed in 2022 and will be used in 2023. After pink salmon season in 2023, an evaluation of the registration system will be carried out

	progress. If sub-actions are completed during the reporting year, this should be made clear. Other material (e.g. website links) will not be evaluated)	
	Current status of action *(Please note: 'Completed' means that the overall action is complete for the lifetime of the third reporting cycle. If it is an ongoing action that is reported on annually, it should be marked as 'Ongoing')*	Ongoing
	If 'Completed', has the action achieved its objective?	

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.
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.
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.