

## Annual Progress Report on Actions taken under the Implementation Plan for the Calendar Year 2023

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, <u>CNL(18)49</u>.

These reports will be reviewed by the Council. Please complete this form and return it to the Secretariat **no later than 1 April 2024**.

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).

**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 2022, the pre-fishery abundance was estimated at about 458 000 wild salmon (time series starting in 1980). Efforts to map sea survival are increasing by the establishment of new monitoring rivers. Results show that sea survival vary significantly among rivers and years. The management targets for the period

2019-2022 were attained, or likely attained, for 91 % of the populations. The number and proportion of populations reaching their management targets have increased markedly from 2006-2009 to 2019- 2022. In two thirds (168) of the 250 screened rivers, there were indications of genetic introgression from escaped farmed salmon in the wild population, of which 77 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.

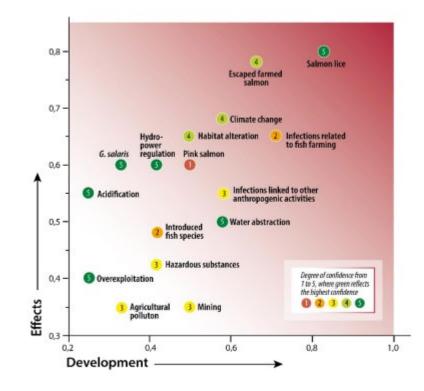


Figure: Ranking of 16 impact factors considered in 2022, according to their effects on wild Atlantic salmon populations, and the likelihood of further negative development. Confidence for the assessment of effect by each threat is indicated by the colour of the markers, where green indicates the highest confidence level and red the lowest (SACAS 2023)

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

(a) provisional nominal	In-river	Estuarine	Coastal	Total
catch (which may be	184		113	297
subject to revision) for				
2023 (tonnes)				
(b) confirmed nominal	257		134	391
catch of salmon for				
2022 (tonnes)				
(c) estimated	32		95	127
unreported catch for				
2023 (tonnes)				

(d) r	numbe	er and	18 826, 27 p	ercent (81 tonnes)
percentage of salmon				
caught and released in				
recreational fisheries in				
2023		• • •		
3:	Imp	lementation	Plan Acti	ons.
<b>Fisheries</b> (section 2.9 of the Imp Note: the reports under 'Progress of Please report in relation to the report provide clear and concise quantitation quantitative information cannot be rationale must be given for not pro provided to enable progress with the		.9 of the Imp er 'Progress of ion to the repo cise quantitation cannot be en for not pro ogress with th psites) may a	ess on actions relating to the Management of Salmon plementation Plan). on action to date' should provide a brief overview of each action. orting year only or the most relevant recent year. For all actions, tive information to demonstrate progress. In circumstances where e provided for a particular action because of its nature, a clear widing quantitative information and other information should be that action to be evaluated. While referring to additional material ssist those seeking more detailed information, this will not be	
Acti		Description of	1	Development, testing and evaluation of an expanded sea
F1:		(as submitted in		survival surveillance program.
		Expected outo		Increased knowledge about salmon recrutiment, growth and sea
		(as submitted in		survival at a national and regional scale.
		Approach for		Monitor factual progress against planned progress.
		monitoring ef		
		& enforcement		
		(as submitted in	· · · · · · · · · · · · · · · · · · ·	
		Progress on a	ction to	An expansion of salmon sea survival surveillance has
		date	<i>c</i> .	been initiated. Several locations have been considered, and in 2022 surveillance was conducted in five rivers
		(Provide a brie		along the Norwegian coast. Based on experiences from
		with a quantita measure, or oth		the surveillance, the suitability of the selected locations
		evaluation, of p		and the program was evaluated in 2022, and one location is
		sub-actions are		terminated from 2023. Two alternative locations were
		during the repo	*	considered in 2023, none of them selected for further testing.
		this should be i		As search for replacement continues in 2024.
		Other material	(e.g.	
		website links) v	vill not be	
		evaluated)		
		Current status		Ongoing
		(Please note: '	•	
		means that the		
		action is compl lifetime of the t		
		reporting cycle		
		ongoing action		
		reported on an		
		should be mark	•	
		'Ongoing')		
		If 'Completed	l', has the	
		action achieve		
		objective?		
		objective?		

Action	Description of action	(a) Increased effort to reveal and sanction illegal fisheries.
F2:	(as submitted in the IP)	(b) Revision of salmon and inland fisheries act to introduce
		stricter reactions to violation of legislation.
	Expected outcome	Reduction in illegal fisheries.
	(as submitted in the IP)	
	Approach for	(a) Scope of fishery inspection and number of revealed offences.
		(b) Revised legislation.
	monitoring effectiveness	(b) Revised registation.
	& enforcement	
	(as submitted in the IP)	
	Progress on action to	a) The Norwegian Nature Inspectorate has gotten an expanded
	date	budget in order to increase their efforts to reveal and sanction
		illegal salmon fisheries. The increase in budget allowance was
	(Provide a brief overview	continued in 2021 and 2022. The overall number of revealed
	with a quantitative	
	measure, or other justified	offences has decreased, especially in some regions, despite the
	evaluation, of progress. If	increased efforts.
	sub-actions are completed	
	during the reporting year,	(b) The salmon and inland fisheries act has been revised and
	this should be made clear.	stricter reactions to violation of legislation are introduced.
	Other material (e.g.	
	website links) will not be	
	evaluated)	
	/	
	Current status of action	Completed
	(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	- V	Major revision of regulatory measures in rivers and in mixed-
	Description of action	stock fisheries in the sea for the period 2021-2026.
F3:	(as submitted in the IP)	*
	Expected outcome	Adjusted fisheries regulations
	(as submitted in the IP)	-Reduced overexploitation due to updated regulatory measures.
	Approach for	-Revised regulations.
	monitoring effectiveness	-Annual assessment of numbers of rivers attaining their
	& enforcement	management target.
		-Monitoring spawning target attainment.
	(as submitted in the IP)	
	Progress on action to	The major revision of regulatory measures was completed in
	date	2021. Minor adjustments were implemented in 2022 and 2023.
	(Provide a brief overview	
	with a quantitative	Monitoring of salmon stocks reveals that management targets
	measure, or other justified	for the period 2019-2022 were attained, or likely attained, for
	evaluation, of progress. If	93% of the populations. This is among the best results
	sub-actions are completed	regarding attainment of the management targets since the first
	*	evaluation was done in 2009.
	during the reporting year,	

	this should be made clear. Other material (e.g.	Harvest of populations with low or no harvestable surplus has been strongly reduced or closed. Salmon fishing was closed in
	website links) will not be	183 rivers in 2022.
	evaluated)	105 11 015 11 2022.
	Current status of action	Completed
	(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	Yes
	action achieved its	
	objective?	
Action	Description of action	Development of an electronic system to make reporting of
F4:	(as submitted in the IP)	catches in the sea by recreational anglers possible.
	Expected outcome	Reduction in unreported catches.
	(as submitted in the IP)	-
	Approach for	Number of users and reported catches by anglers in the sea.
	monitoring effectiveness	
	& enforcement	
	(as submitted in the IP)	
	Progress on action to	Since 2019 it has been possible for recreational anglers to
	date	report all catches of anadromous fish in sea at the webpage www.stangfiskesjo.miljodirektoratet.no. The
	(Provide a brief overview with a quantitative	Norwegian Environment Agency continues to work on
	measure, or other justified	improving the application from feedback from users. Our
	evaluation, of progress. If	biggest challenge is to make the online solution known to the
	sub-actions are completed	broader public.
	during the reporting year,	
	this should be made clear.	
	Other material (e.g.	
	website links) will not be	
	<i>evaluated)</i> Current status of action	Ongoing
	(Please note: 'Completed'	[>n5om5]
	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 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 were 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
	<i>'Ongoing')</i> If 'Completed', has the action achieved its objective?	
Rest Note Pleas prove quan ratio prove (e.g.	vide an update on prog coration (section 3.5 of the 1 : the reports under 'Progress of se report in relation to the repo ide clear and concise quantitat titative information cannot be nale must be given for not pro- ided to enable progress with th	<b>Tress on actions relating to Habitat Protection and</b> Implementation Plan). In action to date' should provide a <b>brief overview</b> of each action. For all actions, to be a provided of the most relevant recent year. For all actions, tive information to demonstrate progress. In circumstances where a provided for a particular action because of its nature, a clear widing quantitative information and other information should be that action to be evaluated. While referring to additional material ssist those seeking more detailed information, this will not be
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.

	Annroach for	Biennially surveys on juvenile salmon populations and
	Approach for	mandatory reports of annual river catches of salmon.
	monitoring effectiveness	mandatory reports of annual river catelies of samon.
	& enforcement	
	(as submitted in the IP)	
	Progress on action to	At present, 24 Norwegian salmon rivers are included in the
	date	national program for river liming. The liming has led to a marked improvement in water quality, increased diversity of
	(Provide a brief overview	benthic invertebrates and significantly increased production
	with a quantitative	and catches of salmon. The water quality largely satisfies the
	measure, or other justified	pH target throughout the year in the limed rivers, but relatively
	evaluation, of progress. If sub-actions are completed	high values of toxic aluminium are occasionally measured in
	during the reporting year,	some rivers. The monitoring shows that the liming must be
	this should be made clear.	continued to ensure that organisms sensitive to acidification,
	Other material (e.g.	including salmon, will be able to live and reproduce in these
	website links) will not be	rivers. However, lime consumption has decreased significantly
	evaluated)	in line with recovery after the acidification period.
		The funding is provided by the Norwegian Government. In
		2023, the cost was about 50 mill NOK ( $\approx$ 4.1 mill GBP).
	Current status of action	Ongoing
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	ongoing action that is reported on annually, it	
	should be marked as	
	'Ongoing')	
	If 'Completed', has the	
	action achieved its	
	objective?	
A - 4°		Mising many for immend admon habitat in manylated
Action	Description of action	Mitigation measures for improved salmon habitat in regulated rivers.
H2:	(as submitted in the IP)	
	Expected outcome	Restored fish habitat and increased salmon production in regulated rivers.
	(as submitted in the IP)	Monitoring number of habitat plans and effectiveness of
	Approach for	mitigation measures in regulated rivers.
	monitoring effectiveness & enforcement	magadon measures in regulated fivers.
	(as submitted in the IP) Prograss on action to	Mitigation measures are carried out in about 70 rivers with
	Progress on action to date	Atlantic salmon and sea trout stocks, as a follow up of
		environmental terms. Measures are at different stages;
	(Provide a brief overview with a quantitative	typically starting with bottleneck analysis and ending up with
	measure, or other justified	specific mitigation measures and monitoring programs. One
	evaluation, of progress. If	goal is to assess if improved salmon production habitats can
	sub-actions are completed	replace fish-stocking programs. Priority is given to the most
	during the reporting year,	important salmon rivers influenced by hydropower regulations,
	this should be made clear.	where measures can be done in a cost/effective manner.
	Other material (e.g.	
	website links) will not be	
	evaluated)	

	Current status of action	Ongoing
	Current status of action	Ongoing
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	should be marked as	
	'Ongoing')	
	If 'Completed', has the	
	action achieved its	
	objective?	
Action	Description of action	Revision of terms for hydropower production licenses and
H2-2:	(as submitted in the IP)	address of rules of operation, in several rivers.
	Expected outcome	The result of the process will vary among rivers. The salmon
	(as submitted in the IP)	habitat is one of several factors that will be evaluated. Main
		mitigating measures include environmental flow.
	Approach for	Revision of terms for hydropower regulation licenses is the main
	monitoring effectiveness	tool to improve conditions for salmon in regulated rivers, by
	& enforcement	revising the terms of operations.
	(as submitted in the IP)	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	By Marh 19th 2024 49 cases concerning revision of terms are
	date	ongoing. They are in the following stages (one case may
	(Provide a brief overview	contain several licenses):
	with a quantitative	18 cases have been suggested for revisions.
	measure, or other justified	6 cases are opened. 25 cases have produced the background document
	evaluation, of progress. If	needed for hearing and further handling.
	sub-actions are completed	4 cases are finished by the directorate and handled to the
	during the reporting year, this should be made clear.	ministry for final decision. Among these are 2 in rivers
	this should be made clear. Other material (e.g.	with Atlantic salmon (Eidfjord and Skjomen).
	website links) will not be	26 revisions are finished. 4 among these in rivers with Atlantic
	evaluated)	salmon,
	Current status of action	Ongoing
	(Please note: 'Completed'	
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	action is complete for the	
	lifetime of the third	
	reporting cycle. If it is an	
	ongoing action that is	
	ongoing action that is	

		1
	reported on annually, it	
	should be marked as	
	'Ongoing')	
	If 'Completed', has the	
	action achieved its	
	objective?	
Action	Description of action	Improving salmon habitat in rivers altered to improve security
H3:	(as submitted in the IP)	during flood.
	Expected outcome	Improved rearing conditions when closed rivers sections are
	(as submitted in the IP)	opened and influenced by regular changes in the hydrological
		regime.
	Approach for	Norway has reported rivers where measures (e.g. for opening old floodplains) have been undertaken at flood protection
	monitoring effectiveness	facilities that also safeguard the salmon stock and other elements
	& enforcement	of biological diversity. This action has previously been
	(as submitted in the IP)	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	In 2023 NVE finalised 28 flood- and environmental measures,
	date	hereby 5 in salmon rivers. NVE set general environmental
	(Provide a brief overview	requirements for aquatic ecosystems as part of NVE's
	with a quantitative	management of flood mitigation in river systems.
	measure, or other justified	NVE, together with other national management directorates, is
	evaluation, of progress. If sub-actions are completed	developing a national action plan for river restoration 2022-
	during the reporting year,	2030. Atlantic salmon is one of the priority standards
	this should be made clear.	1 5 1
	Other material (e.g.	
	website links) will not be	
	evaluated)	
	Current status of action	Ongoing
	(Please note: 'Completed'	
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	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	1
	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.

evalu	evaluated by the Review Group.		
evalu Action A1-1:	ated by the Review Group.Description of action (as submitted in the IP)(as submitted in the IP)Approach for monitoring effectiveness & enforcement (as submitted in the IP)Progress on action to date (Provide a brief overview 	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. Reduced hybridisation between wild and farmed fish, with a qualitative improvement in genetic integrity at population level. 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. There seem to have occurred an editing error during one of the last revisions of the Implementing plan as neither the outcome nor the approach for monitoring effectiveness & enforcement is clearly linked to the described action A1-1. The building of the live genbank for affected stocks is completed and taken over. The collection of salmon for the live gene bank in Hardanger is completed. Figure 1 in IP section 4.3 (a) (i/ii) shows development in reported numbers of escaped salmon from fish farms. In 2023 the reported number of escaped salmon was1458. The actual number escapees is uncertain, but higher than the reported	
		the reported number of escaped salmon was1458. The actual	

Action A1-2:	<ul> <li>(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')</li> <li>If 'Completed', has the action achieved its objective?</li> <li>Description of action (as submitted in the IP)</li> </ul>	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. - Implementing a revised technical standard NS9415 for sea- based aquaculture facilities. - Continuously high focus on effective control regimes.
	Expected outcome (as submitted in the IP) Approach for monitoring effectiveness & enforcement (as submitted in the IP)	Reduced hybridisation between wild and farmed fish, with a qualitative improvement in genetic integrity at population level. Continuously evaluate reports from scientists and fish farmers using sterile fish.
	(us submitted in the II )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.	Regulations are continuously revised and adjusted as new technical solutions are developed, and environmental challenges identified. In 2024, the government started working on a new White Paper on aquaculture. One of the purposes with this White Paper is to identify measures to regulate the industry's environmental impact more efficient and accurate. Site-based technical certificate is required for all sea-based aquaculture installations through regulations based in the Aquaculture act.
	website links) will not be evaluated)	NS 9416 was issued in 2013. For land-based aquaculture, new technical 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 existing installations must be certified before use.
		The Norwegian standard for floating fish farms, NS 9415, was updated in 2021. The government has implemented revised technical regulations for designing and operating farming facilities ("NYTEK23"), with regard to reducing the risk of escapees. The regulations have been in effect since January 1 2023. Stricter requirements have been introduced for equipment known to have been involved in situations where salmon has escaped, and for fish

		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) Approach for monitoring effectiveness	Reduced hybridisation between wild and farmed fish, with a qualitative improvement in genetic integrity at population level. Evaluation of programs and studies made by relevant research institutions.
	& enforcement (as submitted in the IP)	
	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.	Research is still ongoing to evaluate animal welfare considerations as well as performance in relation to various environmental factors. Consequently, research licences are currently using triploid fish. Several commercial salmon farmers have been delayed in using triploid fish due to welfare considerations. However, in March 2020, some producers of juvenile salmon and salmon for consumption received licences to produce triploid salmon.
	Other material (e.g. website links) will not be evaluated)	In April 2021, The Norwegian Food Safety Authority (NFSA) decided not to permit any more commercial production of triploid fish. All triploid fish were to be slaughtered by December 31 2023.
		Work on research level is ongoing, and several new technologies for producing sterile fish with other methods, like for example CRISPR/CAS-technology, 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	Ongoing

	should be marked as	
	'Ongoing')	
	If 'Completed', has the	
	action achieved its	
	objective?	
Action	Description of action	Further developing and improving the National monitoring
A1-4:	(as submitted in the IP)	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	Reduced hybridisation between wild and farmed fish, with a qualitative improvement in genetic integrity at population level.
	(as submitted in the IP) Approach for	Evaluation of programs and studies made by relevant research
	monitoring effectiveness	institutions.
	& enforcement	
	(as submitted in the IP)	
	Progress on action to	The national program for monitoring escaped salmon has been
	date	running since 2014. This has been continued on a yearly basis,
	(Provide a brief overview	with addition of new river-systems where high quality assessments are available. Number of rivers monitored on a
	with a quantitative measure, or other justified	yearly basis have evened out on approx. 200, with a max. in
	evaluation, of progress. If	2021, when 218 rivers were included in the report.
	sub-actions are completed	
	during the reporting year,	For 2022, 195 rivers were monitored.
	this should be made clear. Other material (e.g.	The report for 2023 will be ready within the summer of 2024.
	website links) will not be	As a part of standardizing of methods, there has been
	evaluated)	conducted several field experiments to compare different
		methods, thus aiming to optimize the choice of method(s) in
		the individual river systems.
		These field experiments are continued on a yearly basis.
		"The Field Handbook" will be updated continuously when new
		knowledge is available. There is also work being done in
		revising statistical methods related to estimating proportion of escaped fish based on a combination of sportfishing and the
		post-season fishing for monitoring purposes.
		Based on a «polluter pay» perspective, the Directorate of
		Fisheries has implemented a practice where salmon farmers
		have been given an extended responsibility concerning funding and organizing monitoring and recapture in salt- and
		freshwater after escape incidents.
		The industry is underway in developing a "tracking-program"
		for escaped farmed salmon. The tracking is based on DNA-
		methods in combination with Trace-element analysis. The aim with the program is to track escaped farmed fish back to its
		source, on a farm level.

	Current status of action	Ongoing
	(Please note: 'Completed'	
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	'Ongoing')	
	If 'Completed', has the	
	action achieved its	
	objective?	
Action	Description of action	Continue the efforts of removal of escaped fish in rivers before
A1-5:	(as submitted in the IP)	spawning season through OURO.
	Expected outcome	Reduced hybridisation between wild and farmed fish, with a
	(as submitted in the IP)	qualitative improvement in genetic integrity at population level.
	Approach for	Evaluation of programs and studies made by relevant research
	monitoring effectiveness	institutions.
	& enforcement	
	(as submitted in the IP)	
	Progress on action to	OURO is continuing the removal of fish from rivers identified
	date	through the Nation Monitoring program. For rivers not
	(Provide a brief overview	included in the Monitoring program, The Directorate of
	with a quantitative	fisheries has a system where rivers will be monitored, and
	measure, or other justified	escapees removed, when there are reports of observations.
	evaluation, of progress. If	Additionally, The Directorate of Fisheries has contracts with
	sub-actions are completed	professional fieldworkers/institutions aiming at removing any observed escapees found during other fieldwork in the rivers.
	during the reporting year,	observed escapees round during other nerdwork in the rivers.
	this should be made clear.	
	<i>Other material (e.g. website links) will not be</i>	
	evaluated)	
	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	Description of action	The Norwegian Environment Agency funds a monitoring
A1-6:	(as submitted in the IP)	project on genetical integrity in wild Atlantic Salmon
		poulations.
	Expected outcome	Reduced hybridisation between wild and farmed fish, with a

	(as submitted in the IP)	qualitative improvement in genetic integrity at population level.
	Approach for monitoring effectiveness	Classification of genetic integrity is updated every fifth year in accordance to the Quality Norm for Atlantic salmon.
	& enforcement (as submitted in the IP)	
	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 250 Atlantic salmon populations have been classified based on genetic introgression of escaped farmed salmon. All of the 54 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 (27.8%); Yellow (moderate) 15 (27.8%); Orange (poor), 8 (14,8%) and Red (very poor), 16 (29.6%). Twelve of the rivers that have changed status since 2020 are National Salmon Rivers. Among these, eight have been moved to a worse status and four to a better status. The Institute of Marine Research make annual risk assessments of the effects of fish farming on the environment. The 2023 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?	
Action A2:	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.
	Approach for monitoring effectiveness & enforcement (as submitted in the IP)	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.
	Progress on action to date (Provide a brief overview with a quantitative measure, or other justified evaluation, of progress. If sub-actions are completed	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.

during the reporting year, this should be made clear. Other material (e.g. website links) will not be evaluated) The table below sums the status report of sea lice induced mortality for migrating postsmolt in each PO for the last 5 years (2019-2023), made by the expert group.

	2019	2020	2021	2022	2023
PO1	Low	Low	Low	Low	Low
PO2	Low	High	Low	Mod	Mod
PO3	Mod	High	High	High	High
PO4	High	Mod	High	High	Mod
PO5	High	Low	Mod	Mod	Mod
PO6	Low	Low	Low	Mod	Mod
PO7	Low	Mod	Mod	Mod	Mod
PO8	Low	Low	Low	Mod	Low
PO9	Low	Low	Low	Low	Low
PO10	Mod	Low	Low	Low	Low
PO11	Low	Low	Low	Low	Low
PO12	Low	Low	Low	Low	Low
PO13	Low	Low	Low	Low	Low

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 March 2024, when the Ministry of Trade, Industry and Fisheries concluded that

- 2 POs (PO3 and 4) had to reduce their production capacity by 6 %,

- 5 POs (PO2, 5, 6, 7 and 8) could "freeze" their current production capacity, and 6 POs (PO1 and 9-13) were given a 6 % capacity 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 committee 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 committee presented a total of 15 recommendations on how the traffic light system may be improved. 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.
		The scientific and legal basis of the Traffic Light System has been approved at all national court levels, following a lawsuit in 2021 from companies operating in PO3 and PO4
	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 A3-1:	Description of action (as submitted in the IP)	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.
	Expected outcome (as submitted in the IP)	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.
	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,	In 2022, the Driva region (consisting of the rivers Driva, Litldalselva, Usma and Batnfjordselva) was treated with a combination of chlorine and rotenone. This is the first time that chlorine has been used as an eradication agent. Chlorine was used in the main river and the largest tributaries/streams in river Driva and river Litldalselva. In the peripheral areas, rotenone was used. In river Batnfjordselva and river Usma, traditional rotenone treatment was used. The treatment of the four infected rivers in the Driva region was carried out in

	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') If 'Completed', has the action achieved its	accordance with the eradication plan. A similar treatment was carried out in this region in 2023. Two treatments in two consecutive years are the standard procedure for combating G. salaris. The treatment in 2023 was also carried out in accordance with the plan. The results from e-DNA samples taken upstream of the fish barrier in the river Driva in autumn 2023 are not clear whether G. salaris still occurs upstream of the fish barrier. Supplementary measures will therefore be implemented in 2024. Two new rivers were infected with G. salaris in 2023 (Gylelva in the Driva region and the Ebbestadelva in the Drammen region), which means that there are now ten rivers infected with Gyrodactylus salaris in Norway. The river Gylelva was treated with rotenone in 2023 in connection with the treatments of the other rivers in the Driva region (see above). In the Drammen region (consisting of the rivers Drammenselva, Lierelva, Sandeelva, Selvikelva and Ebbestadbekken), the work on mapping, planning and conservation of fish species has been continued in 2023 with a plan to start with eradication measures in 2025. The Fustavassdraget i Vefsn region was declared free from G. salaris in January 2024, which means that the whole Vefsn region in now free from the parasite. The Norwegian Food Safety Authority (NFSA) will continue the supervision of aquaculture farms, sampling fish to analyze them for the presence or absence of G. salaris Ongoing
	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 <i>G. salaris</i> . Regarding monitoring, a method using e-DNA has been developed that can be more effective when screening a watercourse than traditional sampling and morphological

		methods. NVI has used this method for some years, and they are
		gaining experience with it.
	Expected outcome	Early detection of possible infection.
	(as submitted in the IP)	
	Approach for	Annually G. salaris surveillance reports.
	monitoring effectiveness	
	& enforcement	
	(as submitted in the IP)	
	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.	Environmental DNA is now widely used in combating work to be able to delineate the treatment area. The surveillance programme for G. salaris in Atlantic salmon and rainbow trout in Norway for 2023 aims to document freedom of G. salaris in Norwegian farms and rivers, and to detect and trace any spread of the parasite to new river systems or fish farms. The Post treatment surveillance programme for G. salaris in Norway for 2023 aims to document the absence of the parasite in previously infested water courses after the implementation
	website links) will not be evaluated)	of eradication measures
	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 A3-3:	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 <i>G. salaris</i> . 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.
	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	The NFSA follows the contingency plan established in 2021 to summarize EU regulations, preventive measures and monitoring the status of the rivers. The contingency plan will be review during 2024t

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	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)	
	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	Description of action	Posters, brochures and internet pages in different languages has
A3-4:	(as submitted in the IP)	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	Information that will help prevent further spread of the parasite.
	(as submitted in the IP)	
	Approach for	Existence of updated and available information.
	monitoring effectiveness	
	& enforcement	
	(as submitted in the IP)	
	Progress on action to	The information to prevent the spread og G. salaris is in a
	date	continuous process and it will be distributed to anglers, local
		representatives of watercourses and to the public in general
	(Provide a brief overview	throughout the whole country. Posters will contain QR codes
	with a quantitative	in 2024. The NFSA will upgrade the existing information from
	measure, or other justified	brochures and posters according to newly infected rivers and
	evaluation, of progress. If	watercourses and rivers that are now declared free from G.
	sub-actions are completed	salaris
	during the reporting year,	5010115
	this should be made clear.	
	Other material (e.g.	
	website links) will not be	
	evaluated)	
	Current status of action	Ongoing
	(Please note: 'Completed'	
	means that the overall	
	action is complete for the	
	lifetime of the third	

	reported on annually, it	
	should be marked as	
	'Ongoing')	T
	If 'Completed', has the	
	action achieved its	
	objective?	
Action	Description of action	As far as possible, prevent pink salmon from migrating up rivers
A4-1:	(as submitted in the IP)	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	A significantly smaller number of pink salmon spawning in
	(as submitted in the IP)	rivers with implemented measures.
	Approach for	The rivers upstream of the fish traps will be monitored to see
	monitoring effectiveness	how many pink salmon have managed to pass the trap.
	& enforcement	
	(as submitted in the IP)	
	Progress on action to	In 2023 the efforts to prevent pink salmon from spawning in
	date	Norwegian rivers were the most extensive so far. Norway
	(Provide a brief overview	spent more than 4,5 mill Euro, including monitoring activities.
	with a quantitative	Targeted measures to remove pink salmon were performed in
	measure, or other justified	94 rivers, and around 1/3 of these had full funding from the
	evaluation, of progress. If	Government (equipment and labour). The measures were
	sub-actions are completed	performed by local stakeholders (landowners and angling
	during the reporting year,	organizations mostly). This resulted in a total removal of 249
	this should be made clear.	496 pink salmon. In addition, 13 282 pink salmon were
	Other material (e.g.	reported from angling and 98 770 pink salmon were caught in
	website links) will not be	the bag net fishery at sea (se also Action A4-3). An evaluation
	evaluated)	process is carried out to identify possible improvements in the
		methods, and the need for expanding the area of action in 2025.
	Current status of action	Ongoing
	(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	Description of action	Research projects will be carried out to obtain knowledge about
Action A4-2:	(as submitted in the IP)	the desired and undesirable effect of fish traps. More knowledge
A <b>4-2</b> .	(as submitted in the 11)	is also needed about the negative consequences of establishing
		pink salmon on ecosystems and water quality.
	Expected outcome	Increase knowledge about pink salmon and measures to reduce
	(as submitted in the IP)	the impact on natural populations of anadromous salmonids.
		1 · · · · · · · · · · · · · · · · · · ·

	A manage all fair	Continuously evoluate reports from scientists
	Approach for	Continuously evaluate reports from scientists.
	monitoring effectiveness & enforcement	
	(as submitted in the IP)	
	Progress on action to	In 2023, significant work was carried out to reduce the impact
	date	of pink salmon by using different methods to remove pink
	(Provide a brief overview	salmon. In this connection, it is important to obtain knowledge
	with a quantitative	about the effect of implemented measures and whether there
	measure, or other justified	have been any negative effects on local fish stocks. An expert
	evaluation, of progress. If	group has been set up to assess the effect of pink salmon,
	sub-actions are completed	whether the measures implemented are satisfactory and any
	during the reporting year,	negative consequences of the methods used. A report from this
	this should be made clear.	expert group will be available soon.
	Other material (e.g.	A second state of the first terminal in Trans with the second state of the
	website links) will not be	An evaluation of the fish barrier in Tana will be carried out and
	evaluated)	a report will be published in 2024.
	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		In order to obtain an overview of the development of the pink
Action A4-3:	Description of action (as submitted in the IP)	salmon population and the spread of the species, good
A <b></b> J.	(us submitted in the II )	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	Obtain the best possible overview of the distribution and number
	(as submitted in the IP)	of pink salmon in Norwegian waters.
	Approach for	Good systems must be established for reporting pink salmon, especially in areas with organized catches. In these areas,
	monitoring effectiveness & enforcement	monitoring will also be carried out in the watercourses to see
	(as submitted in the IP)	how much pink salmon have not been caught.
	Progress on action to	Catches of pink salmon has been part of the established
	date	reporting systems, as the specie has been reported along with
	(Provide a brief overview	the other salmon species. Pink salmon caught in the sea and
	with a quantitative	those caught in the rivers as bycatch when angling is reported
	measure, or other justified	in the established reporting systems.
	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 there was many targeted measures aiming to remove pink salmon from Norwegian rivers. The Norwegian Environment Agency developed an app and a website so that catches from these measures could be logged daily and shown on our website. Local contributors were given access to the app, and they logged the number of pink salmon caught (and killed), as well as the number Atlantic salmon that were caught and released. The number of pink salmon was immediately published, and the latter number was published with a two- week delay. On the website the data was presented in different graphs and diagrams, with the possibility for the public to filter and adjust. This became a popular source of information, with weekly updates in different media. Statistical information from the organized measures was effortlessly available for management and researchers. Almost 250.000 pink salmon was reported this way.		
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 re	quired under the Convention		
4.1 Details of any laws, regulations the last notification.	and programmes that have been adopted or repealed since		
specified periods of time of cons	nts concerning the adoption or maintenance in force for servation, restoration, and other management measures.		
4.3 Details of any new actions to pro	4.3 Details of any new actions to prohibit fishing for salmon beyond 12 nautical miles.		
	nvite the attention of States not party to the Convention to of its vessels which could adversely affect salmon stocks		
-	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 Mem	ibers 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.