



IP(19)22rev3

NASCO Implementation Plan for the period 2019-2024

EU – Spain (Cantabria)
(Revised March 2023)

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The main purpose of this Implementation Plan is to demonstrate what actions are being taken by the Parties / jurisdictions to implement NASCO’s Resolutions, Agreements and Guidelines.

In completing this Implementation Plan please refer to the **Guidelines for the Preparation and Evaluation of NASCO Implementation Plans and for Reporting on Progress**, [CNL\(18\)49](#).

Questions in the Implementation Plan are drawn from the following documents:

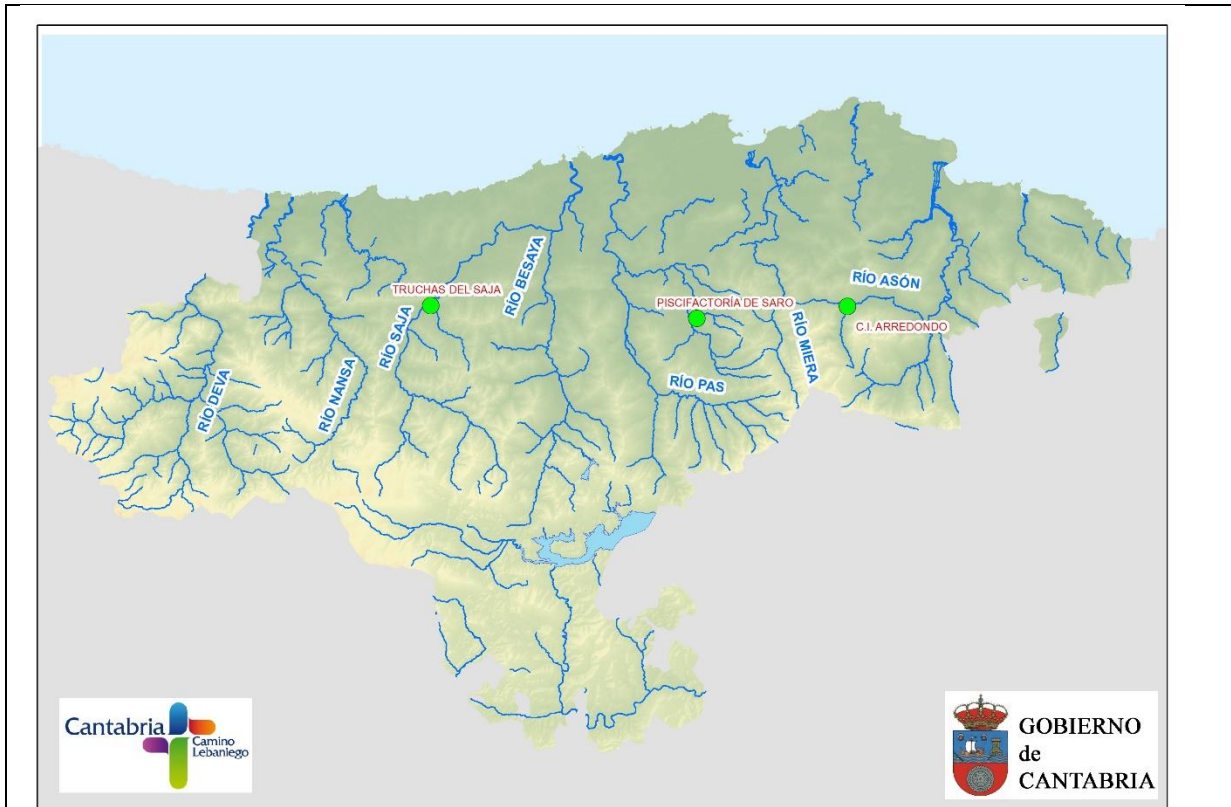
- NASCO Guidelines for Management of Salmon Fisheries, [CNL\(09\)43](#) (referred to as the ‘Fisheries Guidelines’);
- Report of the Working Group on Stock Classification, [CNL\(16\)11](#);
- Minimum Standard for Catch Statistics, [CNL\(93\)51](#) (referred to as the ‘Minimum Standard’);
- Revised matrix for the application of the six tenets for effective management of an Atlantic salmon fishery, WGCST(16)16¹;
- NASCO Plan of Action for the Application of the Precautionary Approach to the Protection and Restoration of Atlantic Salmon Habitat, [CNL\(01\)51](#);
- NASCO Guidelines for Protection, Restoration and Enhancement of Atlantic Salmon Habitat, [CNL\(10\)51](#) (referred to as the ‘Habitat Guidelines’);
- Williamsburg Resolution, [CNL\(06\)48](#);
- Guidance on Best Management Practices to address impacts of sea lice and escaped farmed salmon on wild salmon stocks ([SLG\(09\)5](#)) (referred to as the ‘BMP Guidance’);
- Guidelines for Incorporating Social and Economic Factors in Decisions under the Precautionary Approach ([CNL\(04\)57](#)); and
- Road Map’ to enhance information exchange and co-operation on monitoring, research and measures to prevent the spread of *G. salaris* and eradicate it if introduced’, [NEA\(18\)08](#).

Party:	EU
Jurisdiction / Region:	Spain (Cantabria)

¹ This document can be obtained from the NASCO Secretariat; email hq@nasco.int

1. Introduction		
1.1 What are the objectives for the management of wild salmon? (Max 200 words)		
<p>The aim of the current management of wild salmon in Cantabria is to conserve and restore healthy and diverse salmon populations at levels of abundance and with a composition that ensures genetic diversity and the full utilization of the natural productive capacity of salmon habitat.</p> <p>To achieve this goal, three objectives have been identified:</p> <ol style="list-style-type: none"> 1. Safeguard the genetic diversity of Cantabrian wild Atlantic salmon populations; 2. Maintain habitat and ecosystem integrity; and 3. Managing/regulating rod fishery to ensure sustainable exploitation. <p>Consistency with the NASCO Agreement on Adoption of a Precautionary Approach is an important aspect in the choosing of actions to meet these objectives, ensuring that decision-making is more cautious when information is uncertain.</p>		
1.2 What reference points (e.g. conservation limits, management targets or other measures of abundance) are used to assess the status of stocks? (Max 200 words) (Reference: Sections 2.4 and 2.5 of the Fisheries Guidelines)		
<p>As Conservation Limits have not been established for individual rivers by stock-recruitment methods the present status of individual stocks is monitored and evaluated using electrofishing for juveniles in combination with catch statistics. Smolt production is estimated from abundance of parr in the rivers. It is expected that CLs will be established in all rivers in the future management plan.</p> <p>In the absence of measures of the salmon run sizes, the salmon catch is considered to represent a surrogate of abundance. The lack of catch quotas for any fisheries in these rivers and significant correlations in the Atlantic salmon catches between fishing methods indicate that the estimated numbers of salmon caught may reflect actual variations in the populations. In addition, significant relationships between the estimated numbers of salmon in the catches and the abundance of juveniles in subsequent years indicate that the catch may be realistic surrogate of the stock size.</p> <p>Based on marked (fin clip and DCWT) stocked salmon and electrofishing in autumn combined with annual catches the total spawning run is estimated every year, and an estimate on the number of spawners is calculated. Both the number of wild salmon from natural spawning and spawners from stocked fish is calculated. Then TACs (Total Allowable Catch) are set for each particular river.</p> <p>Currently, the Government of Cantabria is preparing a document on the conservation limits of the different salmon rivers, which will take into account the recommendations of sections 2.4 and 2.5 of document CNL (09) 43. For this, the collaboration of scientists specializing in salmon conservation is expected and their approval is expected before the end of the 2019-2024 period.</p>		
1.3 What is the current status of stocks under the new classification system outlined in CNL(16)11?		
Stock Classification Score	Salmon Classification Category	No. rivers
0	Not at Risk	0
1	Low Risk	0
2	Moderate Risk	3 (Deva, Pas y Asón)

3	High Risk	2 (Miera y Nansa)								
N/A	Artificially Sustained	1 (Saja-Besaya)								
N/A	Lost	1 (Agüera)								
N/A	Unknown	0								
Additional comments:										
<p>1.4 How is stock diversity (e.g. genetics, age composition, run-timing, etc.) taken into account in the management of salmon stocks? (Max 200 words)</p> <p>All Cantabrian salmon stocks are managed on a catchment by catchment basis and assessed for 1SW and 2SW components. Age, length and sex composition and well as run-timing is being monitored in all rivers through catch statistics and from spawner traps.</p> <p>Maintaining genetic diversity is critical to preventing the extinction in Spain. As such, a rigorous genetic research and management program has been implemented by the development of a broodstock management plan that provides screening, mating guidance, and assessment information for hatchery activities. Broodstocks for stocking are obtained from each of the four major rivers with original populations and for kelts reconditioning, and the stocks are not mixed.</p>										
<p>1.5 To provide a baseline for future comparison, what is the current and potential quantity of salmon habitat? (Max 200 words) (Reference: Section 3.1 of the Habitat Guidelines)</p> <p>It is estimated that more than 800 km of river length were available for salmon at the beginning of 19th century. A recent estimate of the river length accessible for salmon is estimated to be 153 km, so accessibility to historical spawning areas constitutes the most important problem for the conservation of Cantabrian salmon populations.</p> <p>Further actions to improve passage through dam removal or restoration of upstream and downstream river continuity and culvert replacement are clearly needed.</p>										
<p>1.6 What is the current extent of freshwater and marine salmonid aquaculture?</p> <table border="1"> <tr> <td>Number of marine farms</td> <td>None</td> </tr> <tr> <td>Marine production (tonnes)</td> <td>0 t</td> </tr> <tr> <td>Number of freshwater facilities</td> <td>2 freshwater facilities produced salmonids in Cantabria (<i>Oncorhynchus mykiss</i>) for commercial purposes. Another hatchery supports Atlantic Salmon Restoration Program.</td> </tr> <tr> <td>Freshwater production (tonnes)</td> <td>Less than 5 t annually.</td> </tr> </table> <p>Append one or more maps showing the location of aquaculture facilities and aquaculture free zones in rivers and the sea.</p>			Number of marine farms	None	Marine production (tonnes)	0 t	Number of freshwater facilities	2 freshwater facilities produced salmonids in Cantabria (<i>Oncorhynchus mykiss</i>) for commercial purposes. Another hatchery supports Atlantic Salmon Restoration Program.	Freshwater production (tonnes)	Less than 5 t annually.
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Freshwater production (tonnes)	Less than 5 t annually.									



1.7 Please describe the process used to consult NGOs and other stakeholders and industries in the development of this Implementation Plan. (Max 200 words)

Starting in 2021, the IP document will be taken to the Regional Angling Council, where both fishermen associations and environmental NGOs, universities and other stakeholder are represented, which are consulted by regional authorities before establishing the annual angling regulations. In addition, the IP document will be published on the Citizen Participation Website of the Government of Cantabria, being accessible to all citizens and open to suggestions.

2. Management of Salmon Fisheries:
In this section please review the management approach to each of the fisheries in your jurisdiction (i.e. commercial, recreational and other fisheries) in line with the relevant NASCO Resolutions, Agreements and Guidelines. For Parties / jurisdictions that prosecute mixed-stock fisheries, there should at least one action related to their management.

2.1 What are the objectives for the management of the fisheries for wild salmon? (Max. 200 words)

There is no commercial salmon fishery in Cantabria. Only angling on salmon is allowed under restricted conditions. The objectives of fisheries management is for all stocks to meet and exceed biologically based Conservation Limits (MSY) with only the surplus above the Conservation Limits being available for harvest.

These Conservation Limits will depend on the results obtained in the studies foreseen in action F3.

2.2 What is the decision-making process for the management of salmon fisheries, including predetermined decisions taken under different stock conditions (e.g. the stock levels at which regulations are triggered)? (Max. 200 words) (This can be answered by providing a flow diagram if this is available.)

<i>(Reference: Sections 2.1 and 2.7 of the Fisheries Guidelines)</i>	
Today no CLs are developed for river catch. Awaiting this, the landing of salmon was limited by TACs (Total Allowable Catch) that are set for each particular river based on some measures of abundance (see 1.2).	
2.3	(a) Are any fisheries permitted to operate on salmon stocks that are below their reference point (e.g. Conservation Limits)? If so, (b) how many such fisheries are there and (c) what approach is taken to managing them that still promotes stock rebuilding? (Max 200 words) <i>(Reference: Section 2.7 of the Fisheries Guidelines)</i>
	(a) Although CLs have not been established for Cantabrian populations exploitation of salmon stocks that are below their reference point probably occurs.
	(b) 4
	(c) In order to meet the recommendation from NASCO Agreement on Adoption of a Precautionary Approach, a salmon quota for Cantabrian rivers was established in 2010 (a Total Allowable Catch of 120 fish). Angling is only permitted from May 1 st to June 30 th , but if the salmon quota is fully utilized the fishery will be stopped. Salmon quotas are yearly revised.
2.4	(a) Are there any mixed-stock salmon fisheries? If so (b) how are these defined, (c) what was the mean catch in these fisheries in the last five years and (d) how are they managed to ensure that all the contributing stocks are meeting their conservation objectives? (Max. 300 words in total) <i>(Reference: Section 2.8 of the Fisheries Guidelines)</i>
	(a) There are no mixed-stock salmon fisheries in Spain.
	(b)
	(c)
	(d)
2.5	How are socio-economic factors taken into account in making decisions on management of salmon fisheries? (Max. 200 words) <i>(Reference: Section 2.9 of the Fisheries Guidelines)</i>
	Salmon sport fishery provides economic resources for tourism and rural areas, so the decision-making process includes angling associations and other stakeholders which are consulted by regional authorities before to establish annual angling regulations. Nevertheless conservation of salmon populations does take precedence over socio-economic factors.
2.6	What is the current level of unreported catch and what measures are being taken to reduce this? (Max. 200 words) <i>(Reference: Section 2.2 of the Fisheries Guidelines and the Minimum Standard)</i>
	Unknown, but it is believed to be negligible or non-existent. Currently, two surveillance forces, (Natural Environment Rangers and SEPRONA Civil Guards) monitor the action of the Fishermen in order to deter poaching. In the last years, no signs of this activity have been

detected. Additionally, the Government of Cantabria occasionally establishes special services of its Agents for night surveillance and has placed security cameras in some of the points with the highest concentration of salmon.

Furthermore, according to the angling legislation, all fishermen must record details of all salmon landings and, therefore, the landing statistics regarding the number and weight of salmon landing are good and reliable.

2.7 Has an assessment under the Six Tenets for Effective Management of an Atlantic Salmon Fishery been conducted? If so, (a) has the assessment been made available to the Secretariat and (b) what actions are planned to improve the monitoring and control of the fishery? (c) If the six tenets have not been applied, what is the timescale for doing so? (Max. 200 words)

(Reference: Six Tenets for Effective Management of an Atlantic Salmon Fishery, WGCST(16)16)

(a) Yes

(b) Since 2010, a TAC (Total Allowable Catch) has been established for each river, which limits the number of salmon landing. This number was implemented based on certain variables such as the length of available habitat or the history of salmon landing per river. However, this TAC will be reviewed once the conservation limits provided for in action F3 are approved.

The monitoring of the number of catches is achieved given the obligation of fishermen to seal each of their landings and by monitoring the different environmental forces.

(c) 2019-2024

2.8 Identify the threats to wild salmon and challenges for management associated with their exploitation in fisheries, including bycatch of salmon in fisheries targeting other species.

Threat / challenge F1	Over-exploitation of MSW in relation to 1SW in rivers.
Threat / challenge F2	Stocks are below conservation limits and there is a lack of data to set CL's for all salmon stocks; there is therefore a need for a development of conservation limits for all rivers. Angling exceeds levels that are sustainable and threatens conservation of stocks.
Threat / challenge F3	The lack of information to characterise the stocks; there is therefore a need for monitoring tools for salmon. Inaccurate or unvalidated tools confound the true picture of recovery, catch options and potential dangers to stocks from over fishing.
Threat / challenge F4	

Copy and paste lines to add further challenges which should be labelled F5, F6, etc.

2.9 What SMART actions are planned during the period covered by this Implementation Plan (2019 – 2024) to address each of the threats and challenges identified in section 2.8 to implement NASCO’s Resolutions, Agreements and Guidelines and demonstrate progress towards achievement of its goals and objectives for the management of salmon fisheries?		
Action F1:	Description of action:	Reducing over-exploitation of MSW in rivers through restrictions on landing large fish. <i>[This action will contribute to addressing threat F1]</i>
	Planned timescale (include milestones where appropriate):	2019-2024
	Expected outcome:	Increased egg deposition and MSW survival.
	Approach for monitoring effectiveness & enforcement:	Annual assessments of current status of stocks relative to 1SW/MSW ratio. Monitoring annual catch data.
	Funding secured for both action and monitoring programme?	Yes
Action F2:	Description of action:	Joint promotion, with stakeholders, of catch and release in rod fisheries. <i>[This action will contribute to addressing threat F1]</i>
	Planned timescale (include milestones where appropriate):	2019-2024
	Expected outcome:	Increased uptake of catch and release in rod fisheries.
	Approach for monitoring effectiveness & enforcement:	Changes in levels of C&R will be reviewed following the campaigns that will be carried out.
	Funding secured for both action and monitoring programme?	Yes
Action F3:	Description of action:	Establishing Conservation Limits and management targets from all salmon stocks. <i>[This action will contribute to addressing threat F2]</i>
	Planned timescale (include milestones where appropriate):	2019-2024
	Expected outcome:	Data on the current status of salmon stocks. Conservation limits for all salmon stocks.

	Approach for monitoring effectiveness & enforcement:	Monitor the current status of stocks relative to the reference points established. Parr surveys, catch statistics & exploitation in rivers.
	Funding secured for both action and monitoring programme?	Yes
Action F4:	Description of action:	Establishing in-river exploitation levels, through tagging/returns & catch and effort statistics. <i>[This action will contribute to addressing threat F2]</i>
	Planned timescale (include milestones where appropriate):	2019-2024
	Expected outcome:	Catch & effort statistics for Cantabrian rivers.
	Approach for monitoring effectiveness & enforcement:	Annual assessments of current status of stocks. Monitoring annual catch data.
	Funding secured for both action and monitoring programme?	Yes
Action F5:	Description of action:	Running monitoring in index river (smolt & spawner census, tagging of smolt, electrofishing). <i>[This action will contribute to addressing threat F3]</i>
	Planned timescale (include milestones where appropriate):	2019-2024
	Expected outcome:	Stock-recruitment data, sea survival, run-timing, diversity of stock, age at smolting, age in the sea.
	Approach for monitoring effectiveness & enforcement:	Annual report on status of salmon stocks and fisheries.
	Funding secured for both action and monitoring programme?	Yes

Copy and paste lines to add further actions which should be labelled F5, F6, etc.

<p>3. Protection and Restoration of Salmon Habitat: <i>In this section please review the management approach to the protection and restoration of habitat in your jurisdiction in line with the relevant NASCO Resolutions, Agreements and Guidelines.</i></p>
<p>3.1 How are risks to productive capacity identified and options for restoring degraded or lost salmon habitat prioritised, taking into account the principle of ‘no net loss’ and the need for inventories to provide baseline data? (Max. 200 words) <i>(Reference: Section 3 of the Habitat Guidelines)</i></p>
<p>All Cantabrian salmon rivers are sited in designated Special Areas of Conservation (SACs) under the EU Habitats Directive (92/43/EEC). Under the Habitats Directive member states are called upon to establish the necessary conservation measures and, if need be, appropriate management plans with the goal to achieve a favourable conservation status for the species and habitat types. The conservation status of salmon will be determined with special assessment and evaluation keys in the Management Plans for each SAC (were approved in 2017, https://boc.cantabria.es/boces/verBoletin.do?idBolOrd=19089). The management target will be a favourable conservation status of salmon populations.</p> <p>Risks to productive capacity together with options and priorities for restoration are identified through the EU Water Framework Directive planning process which is described in more detail in the Cantabrian Water Framework Directive Implementation Programme and at http://www.dmacantabria.com/. Monitoring of fish stocks, invertebrates, water chemistry, macrophytes and morphology took place at monitoring river sites. The monitoring programme will assign ecological status to each individual water body (including rivers and streams). This will be based on water quality, the presence and abundance of fish species, river morphology etc. Any water body classified as less than good status has to have remedial measures drawn up through the Programme of Measures to meet the multiple objectives set to obtain <i>Good Ecological Status</i>. All of the environmental problems affecting rivers will be considered to formulate proactive policy to address the requirements of the Water Framework Directive in relation to riverine morphological imbalances. This policy, when implemented, will be of major benefit to Cantabrian salmon stocks.</p>
<p>3.2 How are socio-economic factors taken into account in making decisions on salmon habitat management? (Max. 200 words) <i>(Reference: Section 3.9 of the Habitat Guidelines)</i></p>
<p>Any infrastructure project requires an environmental impact statement, and an Appropriate Natura 2000 Impact Assessment (see article 6.3 of Council Directive 92/43/EEC) when proposed development is within or adjacent to a Special Area of Conservation, planning for development is given based on minimal interference and the no net loss principle. Experience over recent years has shown that where socio-economic factors have necessitated interference with salmon habitat, there is an acceptance that any loss will be compensated for in other parts of the catchment.</p>
<p>3.3 What management measures are planned to protect wild Atlantic salmon and its habitats from (a) climate change and (b) invasive aquatic species? (Max. 200 words each) <i>(Reference: Section 3.2 of the Habitat Guidelines)</i></p>
<p>(a) Due to the fact that the populations of Atlantic salmon in Spain are at their southern limit of distribution, the fight against climate change is an important tool to preserve the salmon populations in Cantabria. In this sense, it is worth highlighting the approval of the Spanish Strategy Against Climate Change and the Strategy for Action Against Climate Change, instruments that contain general measures that must be adapted to the local scale.</p>

<p>On the other hand, the Management Framework Plan for the Special River Areas of Conservation of Cantabria includes some measures that serve to protect salmon habitat against climate change, mainly in cases where obstacles are permeated (such as demolitions and construction of ladders) and the complexity and diversity of the habitat is improved through LWD structures (wooden structures).</p>	
<p>(b) The Regional Strategic Plan for the Management and Control of Invasive Alien Species includes some measures for the control of certain aquatic invasive alien species, such as the elimination of populations of <i>Reynoutria japonica</i> or <i>Tradescantia fluiminesis</i>, species associated with aquatic habitats, or the capture of American mink specimens In addition, angling regulations prohibit the return to the water of examples of invasive alien species that have been caught, intentionally or accidentally.</p>	
<p>3.4 Identify the main threats to wild salmon and challenges for management in relation to estuarine and freshwater habitat.</p>	
Threat / challenge H1	Lack of connectivity in rivers, including barriers and impacts of hydropower developments.
Threat / challenge H2	Lack of appropriate river flows affecting specific life stages of salmon and wider ecology.
Threat / challenge H3	Land Management Practices causing diffuse pollution (e.g. forestry, soil compaction generating excess run-off, soil erosion and excessive nutrient and agriculture input), and exacerbating the impact of pollution (e.g. river channel modification reducing water velocities) leading to reduction in quality, quantity and diversity of salmon habitat.
Threat / challenge H4	

Copy and paste lines to add further threats/challenges which should be labelled H5, H6, etc.

<p>3.5 What SMART actions are planned during the period covered by this Implementation Plan (2019 – 2024) to address each of the threats and challenges identified in section 3.4 to implement NASCO’s Resolutions, Agreements and Guidelines and demonstrate progress towards achievement of its goals and objectives for the Protection, Restoration and Enhancement of Atlantic Salmon Habitat?</p>		
Action H1:	Description of action:	<p>Improve fish passage by removing dams, installing fishways, removing culverts and upgrading road-stream crossings. <i>[This action will contribute to addressing threat H1]</i></p>

	Planned timescale (include milestones where appropriate):	2019-2024
	Expected outcome:	Enhanced connectivity between freshwater habitats and the Cantabrian Sea
	Approach for monitoring effectiveness & enforcement:	Enumerate the number of habitat area units and/or stream kilometres made accessible.
	Funding secured for both action and monitoring programme?	Yes
Action H2:	Description of action:	Undertaking further research on impacts of hydropower (including cumulative effects) and taking account of best scientific advice to maintain and where possible to improve fish passage and implementing new regulations enhancing powers to require fish passage. <i>[This action will contribute to addressing threat H1]</i>
	Planned timescale (include milestones where appropriate):	2019-2024
	Expected outcome:	Improvements to fish movement allowing greater access throughout rivers and to obtain better understanding of the potential impacts of hydropower.
	Approach for monitoring effectiveness & enforcement:	Number of hydropower facilities have been made permeable.
	Funding secured for both action and monitoring programme?	Yes
Action H3:	Description of action:	Provision of appropriate river flows by implementing sustainable abstraction programmes. <i>[This action will contribute to addressing threat H2]</i>
	Planned timescale (include milestones where appropriate):	2019-2024
	Expected outcome:	Water bodies do not deteriorate from their current status and provision of flows to support <i>Good Ecological Status</i> of river habitat.
	Approach for monitoring effectiveness &	Periodical assessments of <i>Good Ecological Status</i> , as well as Natura 2000 site condition. Where appropriate monitored rivers will be utilised for detailed assessment/ understanding

	enforcement:	of the effects of environmental changes on the production and survival of salmon in freshwater.
	Funding secured for both action and monitoring programme?	Yes
Action H4:	Description of action:	Taking an integrated catchment management approach to reduce the impact of land use, through implementing the SACs Management Plans. <i>[This action will contribute to addressing threat H3]</i>
	Planned timescale (include milestones where appropriate):	2019-2024
	Expected outcome:	Improvements to land management practices and more water bodies meeting <i>Good Ecological Status</i> , as well as Natura 2000 Protected Area objectives.
	Approach for monitoring effectiveness & enforcement:	Periodical assessments of <i>Good Ecological Status</i> , as well as Natura 2000 site condition. Where appropriate monitored rivers will be utilised for detailed assessment/ understanding of the effects of environmental changes on the production and survival of salmon in freshwater.
	Funding secured for both action and monitoring programme?	Yes

Copy and paste lines to add further actions which should be labelled H5, H6, etc

<p>4. Management of Aquaculture, Introductions and Transfers, and Transgenics:</p> <p><i>Council has requested that for Parties / jurisdictions with salmon farms, there should be a greater focus on actions to minimise impacts of salmon farming on wild salmonid stocks. Each Party / jurisdiction with salmon farming should therefore include at least one action relating to sea lice management and at least one action relating to containment, providing quantitative data in Annual Progress Reports to demonstrate progress towards the international goals agreed by NASCO and the International Salmon Farmers Association (ISFA):</i></p> <ul style="list-style-type: none"> • <i>100% of farms to have effective sea lice management such that there is no increase in sea lice loads or lice-induced mortality of wild salmonids attributable to the farms;</i> • <i>100% farmed fish to be retained in all production facilities.</i> <p><i>In this section please provide information on all types of aquaculture, introductions and transfers, and transgenics (including freshwater hatcheries, smolt-rearing etc.</i></p>
<p>4.1 (a) Is the current policy concerning the protection of wild salmonids consistent with the international goals on sea lice and containment agreed by NASCO and ISFA? (b) If the current policy is not consistent with these international goals, when will current policy be adapted to ensure consistency with the international goals and what management measures are planned to ensure achievement of these goals and in what timescale? (Max. 200 words for each) <i>(Reference: BMP Guidance)</i></p>

(a) Not applicable as Cantabria has no rearing of salmon in net pens in the sea.
(b) Not applicable
<p>4.2 (a) What quantifiable progress can be demonstrated towards the achievement of the international goals for 100% of farms to have effective sea lice management such that there is no increase in sea lice loads, or lice-induced mortality of wild salmonids attributable to sea lice? (b) How is this progress monitored, including monitoring of wild fish? (c) If progress cannot be demonstrated, what additional measures are proposed and in what timescale? (Max. 200 words each)</p> <p><i>(Reference: BMP Guidance)</i></p> <p><i>The measures by which these goals may be achieved, and against which the Review Group will be measuring the effectiveness of the Implementation Plan, are set out in the BMP Guidance SLG(09)5 (Best management practice; reporting and tracking; factors facilitating implementation) as agreed by NASCO and ISFA.</i></p>
(a) Not applicable as Cantabria has no rearing of salmon in net pens in the sea.
(b) Not applicable
(c) Not applicable
<p>4.3 (a) What quantifiable progress can be demonstrated towards the achievement of the international goals for achieving 100% containment in all (i) freshwater and (ii) marine aquaculture production facilities? (b) How is this progress monitored, including monitoring of wild fish (genetic introgression) and proportion of escaped farmed salmon in the spawning populations? (c) If progress cannot be demonstrated, what additional measures (e.g. use of sterile salmon in fish farming) are proposed and in what timescale? (Max. 200 words each)</p> <p><i>(Reference: BMP Guidance)</i></p> <p><i>The measures by which these goals may be achieved, and against which the Review Group will be measuring the effectiveness of the Implementation Plan, are set out in the BMP Guidance SLG(09)5 (Best management practice; reporting and tracking; factors facilitating implementation) as agreed by NASCO and ISFA.</i></p>
<p>(a)(i)</p> <p>As for the containment of fish, all salmon housed in the Arredondo’s Ichthyological Center facilities are of wild origin (captured in the rivers of Cantabria with the exclusive aim of being used as breeders for restocking purposes) and never since work began on the recovery of the species (in the 90s) has there been any escape. Adult salmon housed at Arredondo’s Ichthyological Center are continuously monitored and housed in ponds located at a safe distance from the river, with physical measures that prevent their escape (lids on ponds and grates in drains). Fry are housed in different smaller ponds but with the same security measures to prevent their escape. Eggs are counted once they are spawned and fry are counted again before being stocked in June and October.</p> <p>In any case, the escape of salmon from this farm would not pose any risk to wild stock since they come from wild populations and will be used to reinforce wild population.</p>
<p>(a)(ii)</p> <p>N/A; there is currently no salmonid aquaculture in marine cages in Cantabria.</p>
<p>(b) N/A</p> <p>The facilities of the salmon farm in Arredondo have grids and other devices that prevent the entry of spawners into the housing tanks as well as the exit of the parr to the river. On the other hand, the facilities have alert systems and 24-hour surveillance personnel to minimize possible accidents or leaks.</p> <p>Breeding salmon, all from wild populations, are identified by a microchip and breeding is carried out</p>

<p>with specimens from the same river, thus avoiding genetic introgression between rivers. Likewise, eggs, fry and juveniles are separated into different ponds according to the origin of their parents. In addition, all ponds have security measures to prevent their escape into the natural environment. Given this, it is considered that it is not necessary to carry out any type of monitoring</p>
<p>(c) N/A. Containment measures are those described in section 4.3.a and 4.3.b and are currently being carried out</p>
<p>4.4 What adaptive management and / or scientific research is underway that could facilitate better achievement of NASCO’s international goals for sea lice and containment such that the environmental impact on wild salmonids can be minimised? (Max 200 words) <i>(Reference: BMP Guidance and Article 11 of the Williamsburg Resolution)</i></p>
<p>Not applicable as Cantabria has no rearing of salmon in net pens in the sea.</p>
<p>4.5 What is the approach for determining the location of aquaculture facilities in (a) freshwater and (b) marine environments to minimise the risks to wild salmonid stocks? (Max. 200 words for each)</p>
<p>(a) Freshwater sites: All aquaculture facilities require the authorisation of Regional Government. Proposers must apply for authorisation to set up a new fish farm, or any related development, or for modifications to such a facility that could result in increased production, increased escape risk, etc. Authorisation requires the business owner or operator to meet various conditions and minimum standards, including:</p> <ul style="list-style-type: none"> • restriction on the species farmed and the number and type of holding facilities; • keeping records of all movements in the prescribed format; and • following good hygiene practice and biosecurity procedures to avoid spread of diseases. <p>Authorisation can be suspend or revoke if the operator isn’t complying with the conditions of it. Fish culture sites are also likely to require water abstraction licences and discharge consents from the Environment Ministry. These set limits and standards for the amount of water taken and for specific contaminants released.</p>
<p>(b) Marine sites: N/A; there is currently no salmonid aquaculture in marine cages in Cantabria.</p>
<p>4.6 What progress has been made to implement NASCO’s guidance on introductions, transfers and stocking? (Max. 200 words) <i>(Reference: Articles 5 and 6 and Annex 4 of the Williamsburg Resolution)</i></p>
<p>There has been developed a regional programme and procedural documents that cover stocking activities which are only carried out by Regional Government. From 1996 Atlantic salmon reintroduction programme is independent from foreign origin ova and stocking is managed on a catchment by catchment basis and all fish to be tagged and genetically typed. Salmon broodstock are obtained from the wild and from kelt reconditioning.</p> <p>These measures are in accordance with Articles 5 and 6 of the Williamsburg Resolution</p> <p>The State, in coordination with the CCAA, is working on the elaboration of a Guide to good restocking practices, which will include the most relevant aspects to take into account when carrying out these works.</p>
<p>4.7 Is there (a) a requirement to evaluate thoroughly risks and benefits before</p>

<p>undertaking any stocking programme and (b) a presumption against stocking for purely socio-political / economic reasons? (Max. 200 words each) (Reference: Guidelines for incorporating social and economic factors in decisions under the Precautionary Approach and Annex 4 of the Williamsburg Resolution)</p>	
<p>(a)No. The stocking program of salmon in Cantabria is carried out by the Government of Cantabria only under scientific criteria, with the aim of improving the populations of salmon in Cantabrian rivers. This stocking is carried out taking into account the origin of the spawners salmon, guaranteeing the control of the genetic material by basins.</p>	
<p>(b)No.</p> <p>Stocking is only limited by the production capacity of the fish farm, but there are no socio-political or economic reasons.</p>	
<p>4.8 What is the policy / strategy on use of transgenic salmon? (Max. 200 words) (Reference: Article 7 and Annex 5 of the Williamsburg Resolution)</p>	
<p>Transgenic salmonids are not used and have never been used for aquaculture or restocking in Cantabria and there are no plans or policy to do so as this would contravene current scientific advice and policy.</p> <p>The Government of Cantabria is responsible for the management of the salmon farm in Arredondo. The objective of the Government of cantabria is to recover the wild Cantabrian rivers salmon population in the most natural possible way. In this management, the use of transgenic salmon is ruled out following all EU policies, including Directive 2001/18 / EC (on the deliberate release into the environment of genetically modified organisms). Preserving the genetic nature of the Cantabrian rivers salmon population is a priority for the Government of Cantabria.</p>	
<p>4.9 For Members of the North-East Atlantic Commission only: What measures are in place, or are planned, to implement the eleven recommendations contained in the ‘Road Map’ to enhance information exchange and co-operation on monitoring, research and measures to prevent the spread of Gyrodactylus salaris and eradicate it if introduced, including the development and testing of contingency plans? (Max. 200 words) (Reference ‘Road Map’ to enhance information exchange and co-operation on monitoring, research and measures to prevent the spread of G. salaris and eradicate it if introduced, NEA(18)08)</p>	
<p>In relation to the establishment of management plans for the threat of Gyrodactilus salaris, in Cantabria its presence has never been reported in any river.</p> <p>In addition, no anomalous mortalities or signs of the presence of the parasite, have been detected or animal health symptoms that suggest their presence.</p> <p>The government of Cantabria will continue to carry out passive epidemiological monitoring and if any signal about its presence is detected, additional measures will be taken.</p>	
<p>4.10 Identify the main threats to wild salmon and challenges for management in relation to aquaculture, introductions and transfers, and transgenics.</p>	
Threat / Challenge A1	Pressures to increase stocking as a means to support fisheries and/or stocks.
Threat / challenge A2	
Threat / challenge A3	
Threat / challenge A4	

Copy and paste lines to add further threats/challenges which should be labelled A5, A6, etc.

4.11 What SMART actions are planned during the period covered by this Implementation Plan (2019 – 2024) to address each of the threats and challenges identified in section 4.10 to implement NASCO’s Resolutions, Agreements and Guidelines and demonstrate progress towards achievement of its goals and objectives for aquaculture, introductions and transfers, and transgenics?		
Action A1:	Description of action:	<p><i>[This action will contribute to addressing threat A1]</i></p> <p>Regulate salmonid stocking in Cantabrian rivers by implementing and enforcing existing and proposed new stocking programme. The scheme will include limiting stock levels and preserving the genetic integrity of stocked fish. Out of catchment introductions of fish will be forbidden.</p> <p>Ongoing review of evidence about impacts of stocking will be used to update the stocking guidance and procedures underpinning existing and proposed new regulations.</p>
	Planned timescale (include milestones where appropriate):	2019-2024
	Expected outcome:	Stocking operations are more focused, appropriate and lower risk leading to protected genetic integrity and reduced risks from inadvertent introduction of diseases, non-native invasive species, etc.
	Approach for monitoring effectiveness & enforcement:	Periodic review and quality assurance of stocking programmes.
	Funding secured for both action and monitoring programme?	Yes
Action A2:	Description of action:	
	Planned timescale (include milestones where appropriate):	
	Expected outcome:	
	Approach for monitoring effectiveness & enforcement:	
	Funding secured for both action and monitoring programme?	Choose an item.