



**CNL(13)60**

***NASCO Implementation Plan for the period 2013-18***

***EU – Spain (Cantabria)***



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***The main purpose of this Implementation Plan is to demonstrate what actions are being taken by the jurisdiction to implement NASCO Resolutions, Agreements and Guidelines.***

*Questions in the Implementation Plan refer to the following documents:*

- *NASCO Guidelines for Management of Salmon Fisheries, CNL(09)43 (referred to as the 'Fisheries Guidelines');*
- *Minimum Standard for Catch Statistics, CNL(93)51 (referred to as the 'Minimum Standard');*
- *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; and*
- *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').*

<b>Party:</b>	<b>EU</b>
<b>Jurisdiction/Region:</b>	<b>Spain (Cantabria)</b>

**1. Introduction**

**1.1 What are the objectives for the management of wild salmon? (Max 200 words)**

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.

To achieve this goal, three objectives have been identified:

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.

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.

**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)*

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.

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, and

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.

**1.3 To provide a baseline for future comparison, what is the current status of stocks relative to the reference points described in 1.2, and how are threatened and endangered stocks identified?**

Category	Description of category and link to reference points	No. Rivers
1	NASCO Category: LOST Rivers in which there is no natural or maintained stock of salmon but which are known to have contained salmon in the past.	River Agüera
2	NASCO Category: MAINTAINED/RESTORED Rivers in which the natural stock of salmon is known to	River Saja-Besaya

	have been lost in the past but in which there is now a stock of salmon as a result of restoration efforts or natural recolonization, but in which a salmon stock is now maintained through human intervention.	
3	NASCO Category: THREATENED WITH LOSS Rivers in which there is a threat to the natural stock of salmon which would lead to loss of the stock unless the factors causing the threat are removed.	River Asón River Miera River Pas River Nansa River Deva
TOTAL:		7 rivers
Additional comments:		
Rivers listed in the category “threatened with loss” restoration stocking is considered necessary to maintain the salmon stocks, although a relative good natural reproductive success exists. In the future management plan to stop stocking in one or more rivers in order to observe the development of these salmon stocks without stocking will be considered.		
<b>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)</b>		
<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>Angling season begins on May 1<sup>st</sup> with the aim to preserve and protect Multi-Sea-Winter component of populations, which run occurs mainly during March and April.</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>		
<b>1.5 To provide a baseline for future comparison, what is the current and potential quantity of salmon habitat? (Max 200 words)</b> <i>(Reference: Section 3.1 of the Habitat Guidelines)</i>		
<p>It is estimated that more than 800 km of river length were available for salmon at the beginning of 19<sup>th</sup> 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. With the installation of fish lift on large hydropower station in the R. Nansa next year 30 km may be available.</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>		
<b>1.6 What is the current extent of freshwater and marine salmonid aquaculture?</b>		
Number of marine farms	None	
Marine production (tonnes)	0 t	
Number of freshwater facilities	3 freshwater facilities produced salmonids in Cantabria ( <i>Oncorhynchus mykiss</i> ) for commercial purposes. Another hatchery supports Atlantic Salmon Restoration Program.	

	All of them are located in salmon watersheds.
Freshwater production (tonnes)	Less than 5 T annually.
Append one or more maps showing the location of aquaculture facilities and aquaculture free zones in rivers and the sea. <i>Maps showing the locations of freshwater aquaculture facilities are not available.</i>	
<b>1.7</b>	<b>To aid in the interpretation of this Implementation Plan, have complete data on rivers within the jurisdiction been provided for the NASCO rivers database?</b> <i>Yes/no/comments</i>
No. In the current NASCO rivers database Cantabrian salmon rivers are not recorded. Reasons for this lack are unknown. A proposal for Cantabrian rivers classification is given in 1.3	
<b>2. Fisheries Management:</b>	
<b>2.1</b>	<b>What are the objectives for the management of the fisheries for wild salmon?</b> ( <i>Max. 200 words</i> )
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.	
<b>2.2</b>	<b>What is the decision-making process for fisheries management, including predetermined decisions taken under different stock conditions (e.g. the stock level at which fisheries are closed)?</b> ( <i>Max. 200 words</i> ) <i>(This can be answered by providing a flow diagram if this is available.)</i> <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).	
<b>2.3</b>	<b>Are fisheries permitted to operate on salmon stocks that are below their reference point and, if so, how many such fisheries are there and what approach is taken to managing them that still promotes stock rebuilding?</b> ( <i>Max 200 words.</i> ) <i>(Reference: Section 2.7 of the Fisheries Guidelines)</i>
Although CLs have not been established for Cantabrian populations exploitation of salmon stocks that are below their reference point probably occurs. So, 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 <sup>st</sup> to June 30 <sup>th</sup> , but if the salmon quota is fully utilized the fishery will be stopped. Salmon quotas are yearly revised.	
<b>2.4</b>	<b>Are there any mixed-stock salmon fisheries and, if so, (a) how are these defined, (b) what was the mean catch in these fisheries in the last five years and (c) how are they managed to ensure that all the contributing stocks are meeting their conservation objectives?</b> ( <i>Max. 300 words in total</i> ) <i>(Reference: Section 2.8 of the Fisheries Guidelines)</i>
There are no mixed-stock salmon fisheries in Spain.	
<b>2.5</b>	<b>How are socio-economic factors taken into account in making decisions on fisheries management?</b> ( <i>Max. 200 words</i> ) <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)**  
*(Reference: Section 2.2 of the Fisheries Guidelines and the Minimum Standard)*

The amount of salmon illegal catches is negligible. Spanish angling regulations establish that all fishermen must record details of landings. In other sport fisheries that may encounter salmon parr as bycatch (brown trout) surveillance programs are set to ensure that salmon bycatch is limited. In addition, angler education is emphasized to ensure that anglers can differentiate between juvenile trout and salmon parr.

**2.7 What are the main threats to wild salmon and challenges for management in relation to fisheries, taking into account the Fisheries Guidelines and the specific issues on which action was recommended for this jurisdiction in the Final Report of the Fisheries Management FAR Review Group, (CNL(09)11)?**

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.

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

**2.8 What actions are planned to address each of the above threats and challenges in the five year period to 2018?**

<b>Action F1:</b>	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:	2014-2018
	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.
<b>Action F2:</b>	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:	2014-2018
	Expected outcome:	Increased uptake of catch and release in rod fisheries.
	Approach for monitoring effectiveness &	Changes in levels of C&R will be reviewed following the campaigns that will be carried out.

	enforcement:	
<b>Action F3:</b>	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:	2014-2018
	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.
<b>Action F4:</b>	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:	2014-2018
	Expected outcome:	Catch & effort statistics for Cantabrian rivers.
	Approach for monitoring effectiveness & enforcement:	Annual assessments of current status of stocks. Monitoring annual catch data.
<b>Action F5:</b>	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:	2014-2018
	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.

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

<b>3. Protection and Restoration of Salmon Habitat:</b>
<b>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’ ? (Max. 200 words) (Reference: Section 3 of the Habitat Guidelines)</b>
<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 determined with special assessment and evaluation keys in the Management Plans for each SAC. 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</p>

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 *Good Ecological Status*. 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.

**3.2 How are socio-economic spawning escapement factors taken into account in making decisions on salmon habitat management?** (Max. 200 words)  
(Reference: Section 3.9 of the Habitats Guidelines)

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.

**3.3 What are the main threats to wild salmon and challenges for management in relation to estuarine and freshwater habitat taking into account the Habitat Guidelines, and the specific issues on which action was recommended for this jurisdiction in the Final Report of the Habitat Protection, Restoration and Enhancement FAR Review Group, (CNL(10)11)?**

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.

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

<b>3.4 What actions are planned to address each of the above threats and challenges in the five year period to 2018?</b>		
<b>Action H1:</b>	Description of action:	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>
	Planned timescale:	2014-2018
	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.
<b>Action H2:</b>	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:	2014-2018
	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.
<b>Action H3:</b>	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:	2014-2018
	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 & 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.
<b>Action H4:</b>	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:	2014-2018
	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.

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

<b>4. Management of Aquaculture, Introductions and Transfers, and Transgenics:</b>	
<b>4.1</b>	<b>What is the approach for determining the location of aquaculture facilities in (a) freshwater and (b) marine environments to minimise the risks to wild salmon stocks? (Max. 200 words for each)</b>
	<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"> <li>• restriction on the species farmed and the number and type of holding facilities;</li> <li>• keeping records of all movements in the prescribed format; and</li> <li>• following good hygiene practice and biosecurity procedures to avoid spread of diseases.</li> </ul> <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>
<b>4.2</b>	<b>What progress can be demonstrated towards the achievement of the international goals for effective sea lice management such that there is no increase in sea lice loads or lice-induced mortality of wild stocks attributable to sea lice? (Max. 200 words)</b> <i>(Reference: BMP Guidance)</i>
	Sea lice was not detected in Spain.
<b>4.3</b>	<b>What progress can be demonstrated towards the achievement of the international goals for ensuring 100% containment in (a) freshwater and (b) marine aquaculture facilities? (Max. 200 words each)</b> <i>(Reference: BMP Guidance)</i>
	<p>(a) Operators of freshwater fish farms are required to ensure that screens are in place to prevent the entrainment of migratory salmonids (i.e. smolts or adults) into fish farms and the egress of farmed fish from the farms.</p>
	(b) Not applicable to Spain (see 4.1)

<b>4.4 What progress has been made to implement NASCO guidance on introductions, transfers and stocking?</b> (Max. 200 words) (Reference: Articles 5 and 6 and Annex 4 of the Williamsburg Resolution)	
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.	
<b>4.5 What is the policy/strategy on use of transgenic salmon?</b> (Max. 200 words) (Reference: Article 7 and Annex 5 of the Williamsburg Resolution)	
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.	
<b>4.6 What measures are in place to prevent the introduction or further spread of <i>Gyrodactylus salaris</i>?</b> (Max. 200 words)	
<i>Gyrodactylus salaris</i> has not been detected in Cantabria to date.	
<b>4.7 What are the main threats to wild salmon and challenges for management in relation to aquaculture, introductions and transfers, and transgenics, taking into account the Williamsburg Resolution, the BMP Guidance and specific issues on which action was recommended for this jurisdiction in the Final Report of the Aquaculture FAR Review Group, (CNL(11)11)?</b>	
Threat/ Challenge A1	Pressures to increase stocking as a means to support fisheries and/or stocks.

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

<b>4.8 What actions are planned to address each of the above threats and challenges in the five year period to 2018?</b>		
<b>Action A1:</b>	Description of action:	<i>[This action will contribute to addressing threat A1]</i>  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.  Ongoing review of evidence about impacts of stocking will be used to update the stocking guidance and procedures underpinning existing and proposed new regulations.
	Planned timescale:	2014-2018
	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:	Periodic review and quality assurance of stocking programmes.
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*Copy and paste lines to add further actions which should be labelled A5, A6, etc*