

ACTION NAME: D9 Salmon, assessing the efficiency of the project actions on the population and features of the adults and smolts that return and migrate to the sea

D9 Follow up of salmon

Special Conservation Zone (SCZ) being acted upon:

River Leizaran and River Bidasoa

LINK WITH NATURA 2000

The action is encompassed within the following SCZ Management Plan Operational Objectives:

5.1.1 Establish the state of preservation of the Atlantic salmon, shad, sea lamprey and European bullhead.

Key Elements of the promoted SCZ

The **Atlantic salmon** is a species of community interest, with which this follow-up action is directly related, required to assess the repercussion on this species of obstacle elimination actions within the project.

PLACE OF ACTION AND MUNICIPALS:

Date

2016-2020

Budget

€137,470

Related project actions

Due to the requirements of the species and its current and potential geographical distribution, the most significantly related preservation actions are those that eliminate obstacles along stretches suited to this species.

Description of the action - OBJECTIVES

The aim of this follow-up action is to assess the efficiency of the preservation actions related to the salmon, with an annual follow-up of the population size and characteristics of the smolts that migrate to the sea and the adults that return to adapted stretches of the Bidasoa, for this species that is envisaged to be affected by the project actions.

Description of the action - BACKGROUND

Since the start of the 1990s, various actions have been carried out on the river Bidasoa to minimise pressure and the impact on the habitat of the Atlantic salmon, which threatened its survival, among which in particular were the improvement of water quality and the elimination of obstacles that impede its migration. In addition, re-population is carried out using local fry with the aim of strengthening the population.

Alongside these actions, over the last 25 years programmes have been adopted to follow up the evolution of Atlantic salmon populations in the river Bidasoa. These programmes include the follow-up of the upstream population at the Bera Control Station, follow-up of its reproduction (bed counting) and estimation of the fry recruitment. All the indicators reveal an increase in the Atlantic salmon population in the Bidasoa, from the precarious situation faced in the late 80s.

However, the size of the emigrant population from the Bidasoa is unknown, i.e. the number of smolts, both wild and repopulated, that migrate to the sea. This lack of data does not allow for (1) an assessment of the survival of fry over the first river winter, (2) an estimation of the mortality rate in the sea phase, nor (3) an accurate assessment of the success of the population strengthening programme; to do this it would be necessary to compare the proportions of wild and repopulated specimen that migrate to the sea and return.

Therefore, to establish the production and survival of the Atlantic salmon population in both the river and sea phases, it is necessary to carry out and sustain a double follow-up over time: regarding the migratory phase to sea (smolts) and regarding the adult phase in which they return to the river.

Description of the action DESCRIPTION OF FOLLOW UP

A double follow up has been proposed:

- Follow-up of migration to the sea of smolts at the lowest part of the basin possible. To do this, a trap will be used that will be installed in the bypass channel of the Irun-Endara hydroelectric plant.
- Follow-up of the upstream population at the lowest part of the basin possible. To do this, the Government of Navarre has a Capture Station installed in the Bera dam fish way, which has been working continuously for over 20 years.

Based on this information collected, key aspects will be quantified, such as:

- The production of wild fry and smolts in the basin.
- The survival of fry in the river phase up to their migration as smolts.
- Survival during the sea phase.
- The efficiency of strengthening re-population.

With regards to the **field of study**, the works will be developed in the SCZ Leizaran river (Gipuzkoa) and in the SCZ Bidasoa river

With regards to the **seasonal distribution** of the follow-up, the plan is based on annual follow-ups. Follow-up of the migration of smolts will take place from 1st March till 30th June each year, whilst the corresponding follow-up of upstream adults covers the entire year.

JUSTIFICATION What are the desired results? - ENVISAGED RESULTS

The expected results for this action are:

- Establish the population size and features of the salmon smolts that migrate to the sea, and their yearly variation throughout the project.
- Establish the population size and features of the adult salmon that return, and their yearly variation throughout the project.
- Assess the efficiency of the related preservation actions, comparing annual assessments.

