

ACTION NAME	C5 Restoration of the Leitzaran channel
SCZ in which the action is undertaken	Leitzaran river
LINK WITH NATURA 2000	Restoring the Leitzaran channel coincides with the following Natura 2000 planning objectives: - Operational Objective 5 "Avoid the effects on the river habitat of forest exploitation" of the key management element "Ecological River Channel", due to the reduction of the natural process of wood falling into the river and subsequently remaining there, and the introduction of foreign tree species. - Operational Objective 2 "Limit the impacts on fish species present in the SCZ" of the key management element " <i>Parachondrostoma miegii</i> and the Fish Community in general", which returns to the actions of the Ecological River Channel. Also, to improve the habitat available for the Atlantic salmon (<i>Salmo salar</i>), related to the potential capacity of the Leitzaran to home it.
Key Elements of the promoted SCZ	Action benefits: - Directly beneficial to "91E0* River woodlands of <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> ", "Ecological River Channel", "European mink (<i>Mustela lutreola</i>)" and " <i>Parachondrostoma miegii</i> and the Fish Community in general". - Potential benefit to species of community interest: Atlantic salmon (<i>Salmo salar</i>) and the Pyrenean desman (<i>Galemys pyrenaicus</i>).
PLACE OF ACTION AND MUNICIPALS:	Leitzaran river Municipals of Elduain and Berastegi.
Date	Summer 2016
Budget	€149,250
Description of the action - OBJECTIVES	This action aims to rehabilitate the Leitzaran river channel using wooden structures, with the aim of improving its state of preservation, increasing the population numbers of threatened species, strengthening ecosystem services and reducing possible risks of erosion. Secondary targets are to: - Reduce the presence of invasive foreign species in the SCZ Leitzaran river, which will be given preferential use when obtaining execution materials. - Increase knowledge about existing relationships between restoration efforts (length of the restored stretch) and the environmental benefits obtained.
Description of the action - BACKGROUND	Partners have developed similar experiences in other fields. The one that is most closely related is framed within the GURATRANS project (POCTEFA programme), co-financed with ERDF funds). Both in this experience as well as in others, the basic idea was to tend to stretches of river that were favourable to the common trout and other fish, but

where it was identified that the trout populations encountered difficulties.

Once causes such as pollution and other river alterations were ruled out, other, less obvious effects were assessed, such as the ever reducing number of fallen trees in the channel, which furthermore are removed quickly from rivers so as to avoid risks such as blocking bridges.

However, it is an important process for aquatic fauna, because when a tree falls into the river it creates small, different areas - micro-habitats - that are used by fish for various functions: reproducing, finding food, hiding from predators, etc. For this reason the natural process of trees falling into the channel was imitated, in a safe and controlled way. To do this, trees were fixed in high risk zones.

Description of the action - ENVISAGED ACTIONS/DESCRIPTION OF FOLLOW UP

The first results obtained from these previous experiences are positive, so now a 7.5 km stretch from the Leitzaran near Oioki has been proposed.

This area has been chosen following the main idea, as mentioned: it is free from obvious problems, there are few trees that have fallen into the channel, with those that do being removed shortly after, and trout populations are revealing signs of decline or poor condition.

The channel habitat will be improved by introducing trunks that simulate the naturally forming structures in rivers (deflectors, isolated trunks, accumulations), that will be fixed down using cables to ensure their stability.

In addition, part of the accumulated excess wood will be left next to the river to increase shelter areas for the European mink and to reduce the risk of river bank erosion.

To get the trunks needed, foreign trees identified in the zone will be felled. These species, from other countries, pose environmental issues as they substitute local species, in some cases spreading in an uncontrolled way, or transforming ecosystems.

The action is envisaged along increasing lengths (of 200, 360, 660 and 1200m respectively). Prior to this, the benefits obtained by aquatic fauna in each stretch will be studied. The aim of this design is to establish the minimum required length of stretch restored to achieve the maximum environmental benefits. Optimise the cost/benefit balance of restoration in rivers.

JUSTIFICATION What are the desired results? - ENVISAGED RESULTS

A density of 25 m3 of wooden structures has been envisaged for each hectare of river along the intervened stretches, using invasive foreign species. With this action the aim is to achieve a significant improvement to the channel conditions for salmonids. To assess this last point, the common trout will be used as an indicator species.

