



lifefluvial



# IMPROVEMENT AND SUSTAINABLE MANAGEMENT OF RIVER CORRIDORS IN THE IBERIAN ATLANTIC REGION

LIFE 16 NAT/ES/000771  
Co-financed project by the UE through the LIFE programme

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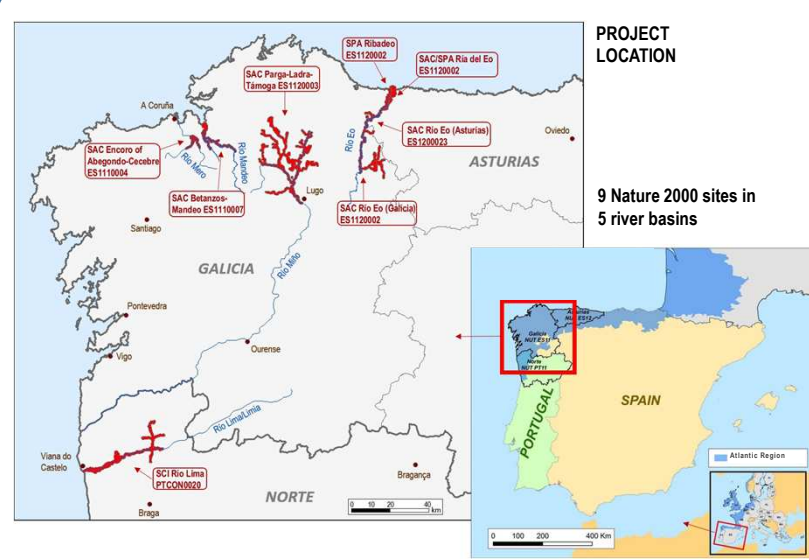
## INTRODUCTION

Fluvial corridors are fundamental ecological elements of connection between mountain areas and lowlands including the coast. They are essential for the mobility and dispersal of numerous species, favoring the genetic exchange among plant or animal species populations. Fluvial corridors are important in the conservation of the networks of protected areas.

In the northwest of the Iberian Peninsula, the fluvial corridors of the Atlantic region are subject to several pressures and threats that change their structure, continuity and functionality. Among the main risk factors are the elimination of the riparian forest (1) and its substitution by meadows or exotic tree plantations, the presence of invasive species (2), the anthropic modification of the channel (3) by channeling and dams construction and the alder mortality caused by oomycetes of genus *Phytophthora* (4).



## THE PROJECT



LIFE FLUVIAL is a project designed to improve the state of conservation and sustainable management of the Atlantic river corridors taking as a driver the representative habitat of these means: the hygrophilous forest included in the priority type 91E0\* Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior*.

Over four years (2017-2021), the project proposes a set of best practices to improve the state of conservation of the fluvial corridors of the Atlantic Biogeographic Region and stop the loss of biodiversity:

- Control of alien and invasive plants.
- Improvement of plant health of river corridors by the partial removal of dead trees infected by *Phytophthora*.
- Improvement of riparian forest through the active (planting) and passive (fences of natural regeneration) restoration.
- Awareness about the natural values, socio-economic benefits and ecosystem services of river corridors.
- Training and technical capacity for stakeholders in the management and conservation of river corridors.

In addition, restoration of habitat type 9230 Galician-Portuguese oak Woods with *Quercus robur* and *Quercus pyrenaica*, which represents continuity with the 91E0\* habitat type, is carried out through the following actions:

- Acquisition of land adjacent to fluvio-estuarine shore in Ribadeo (Galicia, Spain) by expropriation.
- Removal of *Eucalyptus globulus* plantations.
- Removal of alien and invasive plants.
- Planting of typical species of the oak forest.

## EXPECTED RESULTS

- Improvement of the conservation status of 51.1 ha of the habitat type 91E0\*.
- Increase of 4.4 ha of the habitat type 9230.
- Planting of 95,000 specimens of trees from habitats 91E0\* and 9230.
- Recovery of 4.6 ha of habitat 91E0\* through the protection of areas of natural regeneration.
- Drafting of a manual of best practices in the management of river corridors.
- Implementation of a transnational model for sustainable management of river corridors.

## DEVELOPED ACTIVITIES

### Analysis and characterization of vegetation

In all the intervention areas has been carried out an analysis of the vegetation with the geolocation of alien and invasive plants, dead *Alnus glutinosa* specimens and deforested areas. This data will be used to design the technical plans of restoration that will guide the works of reforestation of habitats 91E0\* and 9230.

### Hydrogeomorphological characterization

We are developing an hydrogeomorphological analysis in order to characterize the fluvial corridor. A morphological mapping of several elements in the channel (banks and riverbed) and hydrological studies including flood hazards has been carried out. We are also taking soil samples in order to study some properties in every location. In the final part of the project it will be necessary to analyse the benefits obtained after the improvement actions.

### Drafting of technical plans and design of plantations

Eight technical plans have been drawn up with the design of the actions to be carried out in each of the 32 work points distributed in the 9 Natura 2000 sites.

95,000 seedlings of 11 species characteristic of habitats 91E0\* and 9230 will be planted, according to the attached table.

The trees, whose seeds or cuttings come from the project's own scope, are being produced in the Tragsa's greenhouse.

#### Contents of technical plans

1. Abstract
2. Location data
3. Background
4. Descriptive data
5. Synthesis of natural values
6. Current status of protection status
7. Aims of the intervention
8. Measures to restore habitats
9. Budget
10. Basic health and safety study
11. Cartographic annex
12. Photographic annex
13. Bibliographic annex

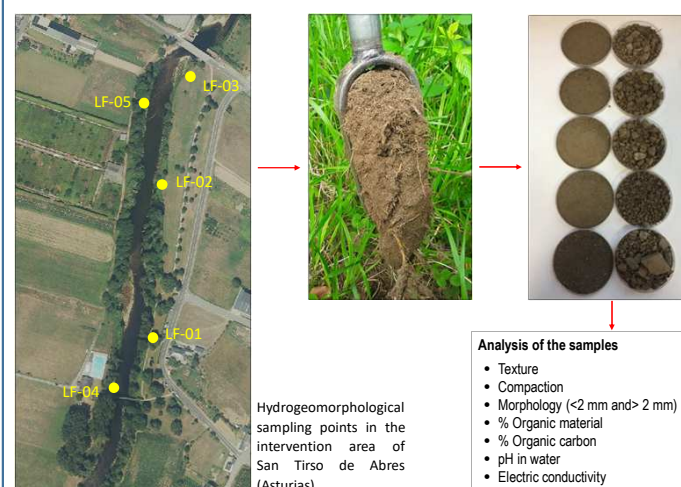
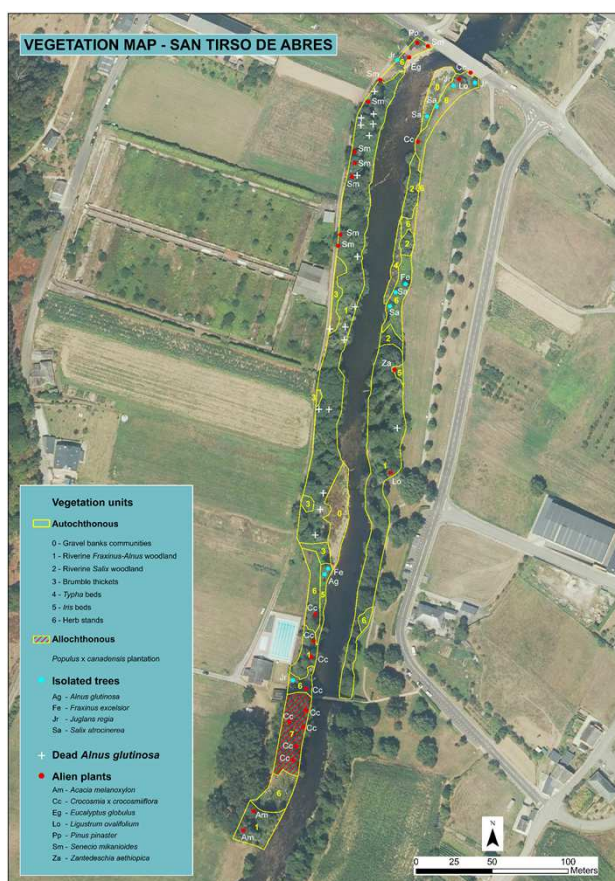
Species for restoration	Quantity
<i>Salix atrocinerea</i>	48,500
<i>Fraxinus excelsior</i>	24,000
<i>Quercus robur</i>	10,500
<i>Betula celtiberica</i>	5,000
<i>Laurus nobilis</i>	2,500
<i>Acer pseudoplatanus</i>	2,300
<i>Corylus avellana</i>	800
<i>Arbutus unedo</i>	500
<i>Pyrus cordata</i>	300
<i>Malus sylvestris</i>	300
<i>Prunus spinosa</i>	300
<b>TOTAL</b>	<b>95,000</b>



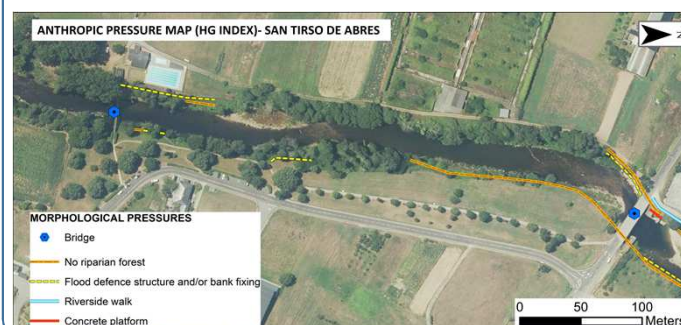
LIFE Fluvial trees production in the Tragsa's greenhouse (Maceda, Orense, Spain).

Morphological corrections and anthropic fill removal for the stabilization of fluvio-estuarine channels and lagoon edges will be carried out.

The restoration of a stretch of river bank using bioengineering techniques is also planned.



- Analysis of the samples
- Texture
  - Compaction
  - Morphology (<2 mm and >2 mm)
  - % Organic material
  - % Organic carbon
  - pH in water
  - Electric conductivity



## PROJECT PARTNERS

