



life
fluvial

LIFE16 NAT/ES/000771



category
nature and biodiversity

Layman report

september 2017 - december 2022

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



LIFE Fluvial is a Project that is cofinanced by the European Commission within the framework of the LIFE programme

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life fluvial

LIFE16 NAT/ES/000771



Project title Improvement and sustainable management of river corridors of the Iberian Atlantic Region

Acronym LIFE Fluvial (LIFE16 NAT/ES/000771)

Total Project budget 3.032.223 €

EU contribution 75%

Duration 01/09/2017 – 31/12/2022

Coordinating beneficiary Indurot (Oviedo University)

Associated beneficiaries

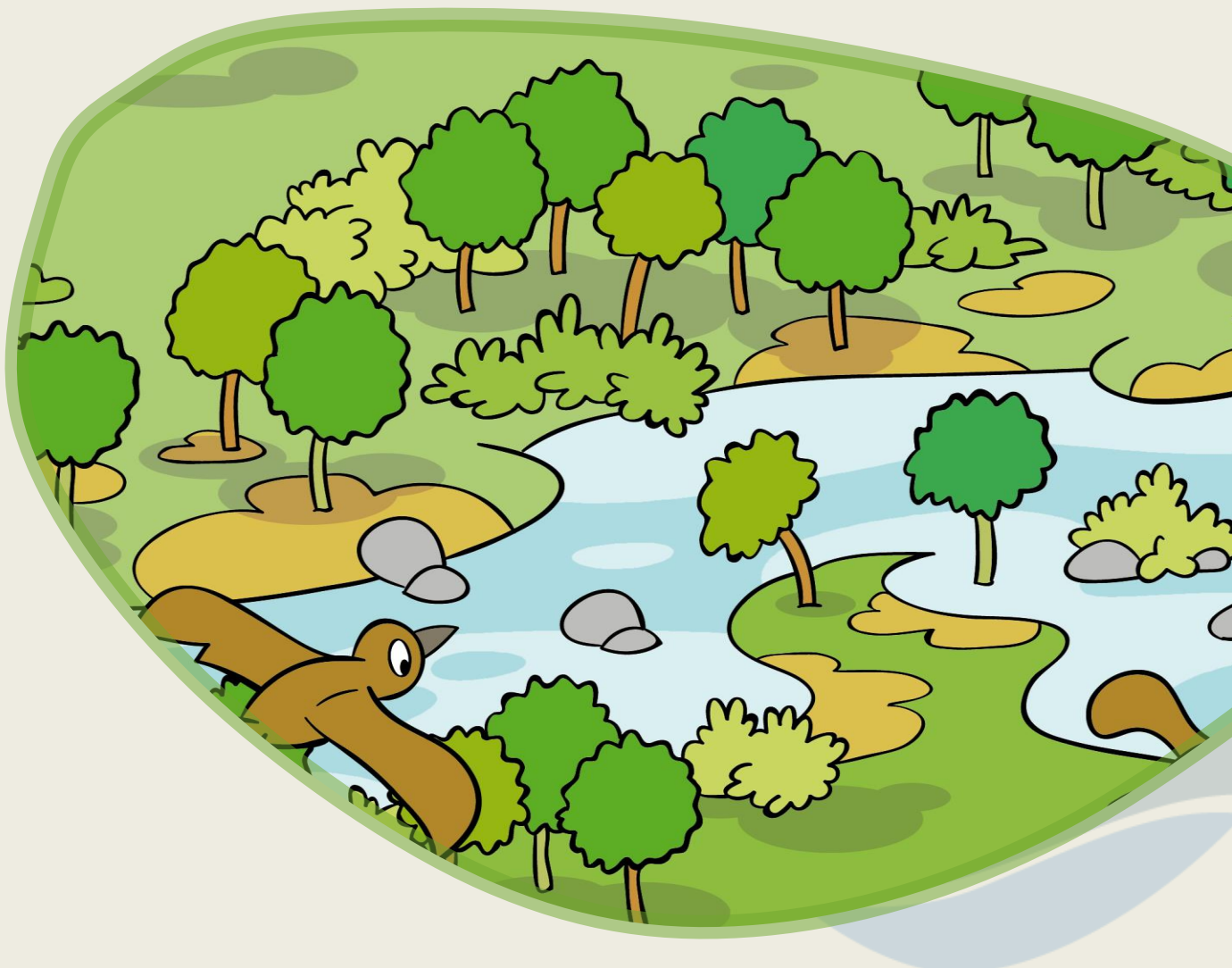
- Ibader (Santiago de Compostela University)
- Instituto Superior de Agronomía (Lisbon University)
- Empresa Municipal de Aguas de La Coruña, S.A. (EMALCSA)
- Asociación de Desenvolvimento Rural Mariñas-Betanzos
- Asociación para el Desarrollo del Territorio Interregional que se ubica en el entorno del río Eo
- City Council of Ribadeo
- Empresa de Transformación Agraria, S.A. (TRAGSA)

Website www.lifefluvial.eu

river corridors

A river corridor consists of the whole fluvial territory, that is, the river in its low water-level channel, the riverside vegetation and the space occupied by water during floods, together with the associated plant cover.

River corridors therefore effectively favour the shelter, movement and dispersion of a great many wild species. The species in question belong to different taxonomic groups and are associated with different environments (terrestrial, semi-terrestrial and aquatic). These corridors also function as effective connections between mountainous area and core biodiversity areas and those established in coastal and marine areas.



life fluvial

The core aim of LIFE Fluvial is to improve the condition of the Atlantic river corridors included in Natura 2000 network. A transnational strategy has been developed to this end for the sustainable management of the habitats in several Iberian Peninsula river basins.

Within this environment threats such as invasive species, intensified use of phytosanitary products or problems with the same all lead to habitat deterioration and fragmentation.

These threats affect the quality and continuity of riparian woodland, the chief habitat covered by this project. This habitat is the priority and key for maintaining the composition, structure and functionality of river corridors.



objectives

target habitats

The main habitat covered by this project and which is considered priority (91E0* alluvial woodlands with *Alnus glutinosa* and *Fraxinus excelsior*) is the key part in maintaining the composition, structure and functionality of river corridors.

The project also covers another target habitat: 9230 Galician-Portuguese oak woods with *Quercus robur* and *Quercus pirenaica*, representing continuity with type 91E0*.



general objective

- To improve the state of conservation of the Atlantic river corridors in Natura 2000 network.

specific objectives

- To develop a transnational model for the sustainable management of river corridors to improve their state of conservation by restoring the composition, structure and functionality of their different habitats, improving connectivity and reducing fragmentation.
- To control exotic and invasive flora.
- To improve the phytosanitary condition of the river corridors by removing a proportion of dead trees.
- To publicize and raise public awareness of the natural values, socioeconomic benefits and ecosystem services provided by river corridors.
- To improve the training and technical skills of the agents involved in managing and conserving river corridors.

partners

INDUROT (Oviedo University)



In 2009 Oviedo University was one of the first nine Spanish universities to obtain accreditation as an International Campus of Excellence. It is the public higher education and research institution of the Principality of Asturias. It has an international vocation and is strongly committed to its territorial environment, with a deep interest in transferring knowledge to the productive sector.

Within the University, the centre in charge of participating in the project is the *Instituto de Recursos Naturales y Ordenación del Territorio* (INDUROT), which had the human and technical resources for execution of the same. INDUROT has broad experience in classifying and managing Natura 2000 spaces and environmental restoration.

IBADER (Santiago de Compostela University)



Santiago de Compostela University is one of the oldest universities in Europe.

Within the university, the group in charge of participating in the project is one of the most experienced in habitat and species management in Red Natura 2000: the Territory and Biodiversity Group (GI-1934-TB), which is attached to the Institute of Agrarian Biodiversity and Rural Development (IBADER).

This makes it possible to apply the human and technical resources which are necessary to execute the project. The work of the Group centres on conservation and management of biodiversity and the environment. It has undertaken multiple works, especially those included in the Habitats Directive and the Birds Directive.

ISA (Lisbon University)



Lisbon University is an interdisciplinary public higher education and research institution composed of 18 faculties and Institutes.

The Higher Institute of Agronomy (ISA) is one of the faculties of Lisbon University. The core mission of the ISA is higher education, research and development, together with technology transfer in the scientific fields of agriculture, forestry and natural resources engineering, food sciences, animal production engineering, environmental engineering biology and landscape architecture.

All of these activities are supported by an experienced team of administrative personnel, including project managers, financial experts and public relations managers.

EMALCSA



The business object of La Corunna Municipal Water Board (*Empresa Municipal de Aguas de La Coruña*), S.A. (EMALCSA) is, among others, to supply water to the city of La Corunna and its suburbs.

EMALCSA aims to include innovation in its management style as well as in how it provides its service.

As well as the functions which are intrinsic to its working, in recent years the company has expanded the spectrum of its interests to include the care, custody and maintenance of the water sources it uses for supply, in terms of environmental as well as social responsibility. This has the aim of guaranteeing the highest possible quality of the water it supplies, while respecting and maintaining the environment to ensure the sustainable management of resources and company working.

MARIÑAS-BETANZOS



MARIÑAS CORUÑESAS
e TERRAS DO MANDEO
Reserva de Biosfera

The Mariñas-Betanzos Rural Development Association is a not-for-profit organization which works in 17 municipalities in the province of A Coruña, Northwest Spain (Galicia).

Its purpose is to serve as the core organization for the integration and representation of the different institutional, social, economic, public and private territorial agents interested in promoting socioeconomic development within its region of working.

Mariñas-Betanzos has been the Managing Body of the Biosphere Reserve *Mariñas Coruñesas e Terras do Mandeo* since 2013. It has developed specific actions in connection with improving the habitats within this territory, with special emphasis on riparian forests, as well as a range of volunteer and environmental education programmes.

INTEREO



The Association for the Development of the Inter-Regional Territory located around the river Eo (interEo) is composed of seven municipalities in the province of Lugo (Galicia), together with seven others in the Principality of Asturias.

These fourteen towns in turn form the territory which the UNESCO MaB Committee designated the Biosphere Reserve of the Rivers Eo, Oscos and Terras de Burón on 18 September 2007.

Their vision and knowledge of the territory have been fundamental for the development of the project, as through the associated local administrations it has participated in the control of the territory and in educational and communications activities.

CONCELLO DE RIBADEO

The *Concello de Ribadeo* established its working priority as the protection, conservation and regeneration of its natural environment, which possesses a degree of biodiversity that have made it worthy of international recognition on several occasions.

Preserving these ecosystems while improving their natural conditions and services is one of its most important concerns.

Apart from all of the actions which aim to create a cleaner and more sustainable Ribadeo, achieving citizen involvement is also seen as indispensable. This is why information campaigns and those to raise public awareness, educational days and other resources are also considered to be essential.

TRAGSA

The *Empresa de Transformación Agraria, S.A.* (Tragsa) has more than 40 years' experience in working for Public Administrations at the service of society, placing it at the forefront of the different sectors in which it works, from services in agriculture, forestry, cattle farming and rural development, to environmental protection and conservation.

Furthermore, TRAGSA participates in the Wild Flora and Fauna Committee and the Protected Natural Spaces Committee. It supplies technical support to both of the Councils which form the Spanish Committee of the UNESCO MaB Programme, and it participates in the Technical Support Group of the Habitat Committee.

actions

A. Preparatory actions

- A1. Diagnosis, territorial analysis and the identification of indicators
- A2. Technical planning of restoration actions

C. Conservation actions

- C1. SAC Río Eo-Galicia ES1120002, SPA Ribadeo ES0000085, SAC/SPA Ría del Eo ES1200016
- C2. SAC Río Eo-Galicia ES1120002, SAC Río Eo-Asturias ES1200023
- C3. SAC/SPA Ría del Eo ES1200016
- C4. SAC Betanzos-Mandeo ES1110007
- C5. SAC Encoro de Abegondo-Cecebre ES1110004
- C6. SAC Parga-Ladra-Támoga ES1120003
- C7. SAC Parga-Ladra-Támoga ES1120003
- C8. SCI Río Lima, PTCON0020

B. Land purchase

- B1. The acquisition of land by expropriation in Ribadeo municipality

D. Monitoring actions

- D1. The effects of conservation actions on habitats
- D2. Evaluation of the socioeconomic impact of the project
- D3. Evaluation of the impact of the project on ecosystem functions
- D4. Monitoring project impact indicators

E. Awareness actions

- E1. Communication and diffusion strategy
- E2. Awareness raising and education programme
- E3. Specialized diffusion, training and technical instruction
- E4. Networking

F. Management

- F1. Project management
- F2. After-LIFE

[A]. preparatory actions

A1. Diagnosis, territorial analysis and the identification of indicators



In the first phase of the project the three universities involved carried out the fieldwork corresponding to preparatory actions. During visits they prepared geomorphologic cartography, took soil samples for analysis, made a cartographic study of the areas which defined the different units of vegetation and also identified invasive exotic species and the alder trees affected by *Phytophthora* spp.

A2. Technical planning of restoration actions

The technical planning documents for restoration actions were developed jointly by IBADER and INDUROT personnel supported by TRAGSA for the areas where activities are to take place in Galicia and Asturias, respectively, while Lisbon University was asked to prepare the planned works in Ponte de Lima (Lagunas de Bertiaños and San Pedro de Arcos).



[B]. land purchase

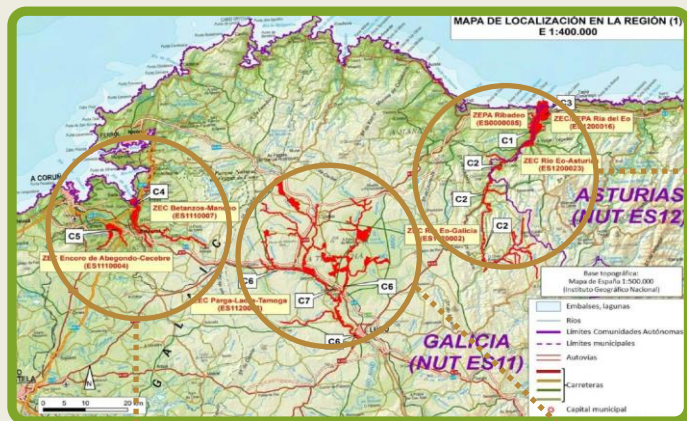
B1. The acquisition of land by expropriation in Ribadeo municipality

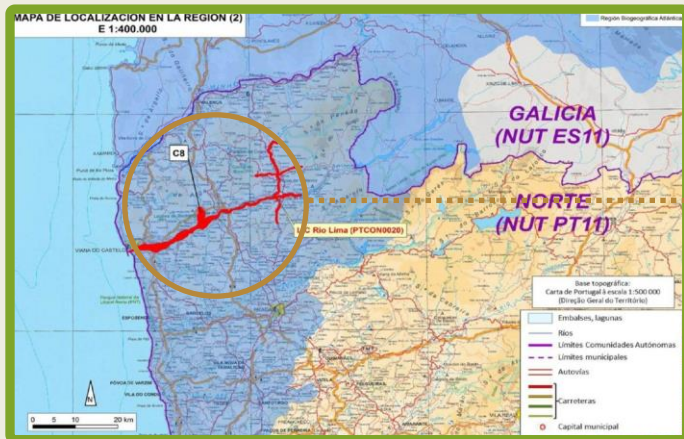
The planned actions by LIFE Fluvial included the acquisition by expropriation of privately owned lands in Ribadeo municipality. More specifically, this land consisted of 30 plots with a total surface area of 3.61 hectares within the area covered by Red Natura 2000 (SAC Río Eo-Galicia ES 1120002, SPA Ribadeo ES0000085). These plots were acquired so that they could be restored, improving the natural state of the estuary.

The said plots were mainly occupied by *Eucalyptus globulus* plantations.



[C]. conservation actions





C1. Improving and restoring natural habitats within the river-estuary corridor of the Ría de Ribadeo/Ría del Eo (SAC Río Eo-Galicia ES120002, SPA Ribadeo ES0000085, SAC/SPA Ría del Eo ES1200016)

Actions were implemented that increased the size of priority habitat 91E0* by 5.9 ha and improved the degree of conservation in 4.2 ha of the same habitat. They also increased the size of habitat 9230 by 5.1 ha and improved the degree of conservation of 1 ha in the same along the estuary of Ribadeo.

More than 24,700 native forest tree cuttings were planted.



A total number of 4 areas of working were distributed in territories of Asturias and Lugo (Galicia), along a corridor approximately 14 km long and over a total surface area of 15.3 ha.

C2. Improving and restoring the river corridor in the mid basin of the River Eo (SAC Río Eo -Galicia ES120002, SAC Río Eo-Asturias ES1200023)

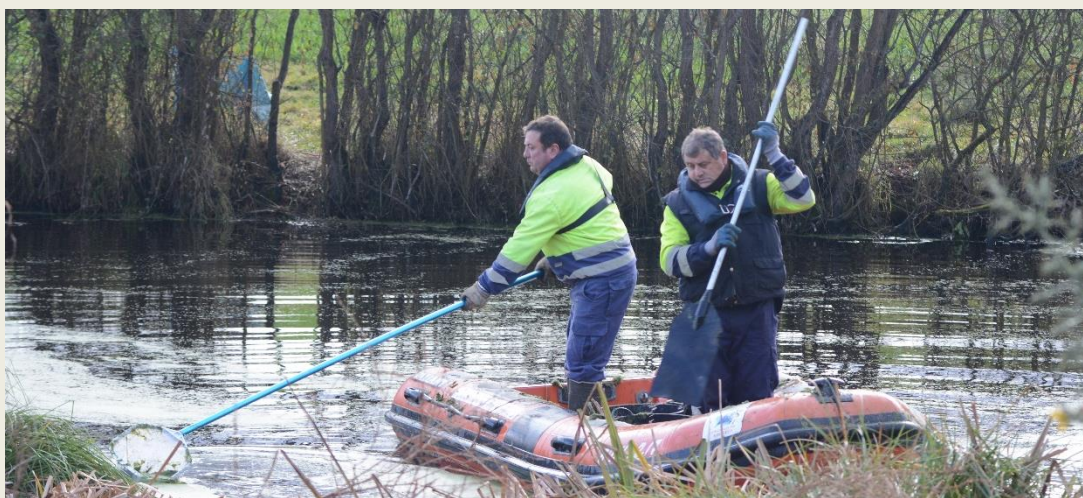
A series of works were executed to restore habitat 91E0*. These chiefly consisted of eliminating and controlling exotic invasive species, cutting down more than 900 alders which were affected by the dieback syndrome caused by *Phytophthora alni* and planting more than 3,600 native forest plant cuttings.

The said works gave rise to an increase of 1.6 ha and an improved level of conservation in 9.5 ha of priority habitat 91E0* along the banks of the River Eo. Works took place in a total of 6 areas in territories in Asturias and Lugo (Galicia), along approximately 56 km of the river and over a surface measuring 11.27 ha.



C3. Improving the state of conservation of the Arnao-Villadún lakes (SAC/SPA Ría del Eo ES1200016)

All of the works executed in these areas have made it possible to reduce or eliminate pressures on habitat 91E0* and neighbouring zones, improving the degree of conservation in 0.66 ha of the same. Furthermore, once the 1,500 trees planted develop and form an alluvial forest the surface of habitat 91E0* will increase by 0.45 ha. This will lead to improved connectivity between both lakes, which are of strategic importance for birdlife due to their proximity to the Eo estuary.



C4. Restoring natural habitats in the fluvial-estuary corridor of the Ría de Betanzos (SAC Betanzos-Mandeo ES1110007)

The result of executing this work in Bergondo (A Corunna) municipality included the removal of materials foreign to the space, hydrological correction and recovery of its functionality, the elimination of exotic and invasive species and the restoration of the alluvial forest (91E0*). Result: an improved state of conservation of 2.1 ha of alluvial forest (91E0*).

Progress indicators:

- Volume of material foreign to the space which was removed: 26 m³.
- Volume of invasive exotic species removed: 70 m³.
- Surface area from which invasive exotic species were removed: 2.1 ha.
- Surface area of alluvial forest restored (91E0*): 2.1 ha.



C5. Sustainable management of water-loving forests (SAC Encoro de Abegondo-Cecebre ES1110004)

The result of this work in the area surrounding Cecebre Reservoir included the removal of old fencing materials and scattered rubbish, the elimination of exotic and invasive species and the restoration of alluvial forest. Result: an improved state of conservation over 24.1 hectares of alluvial forest (91E0*).

Progress indicators:

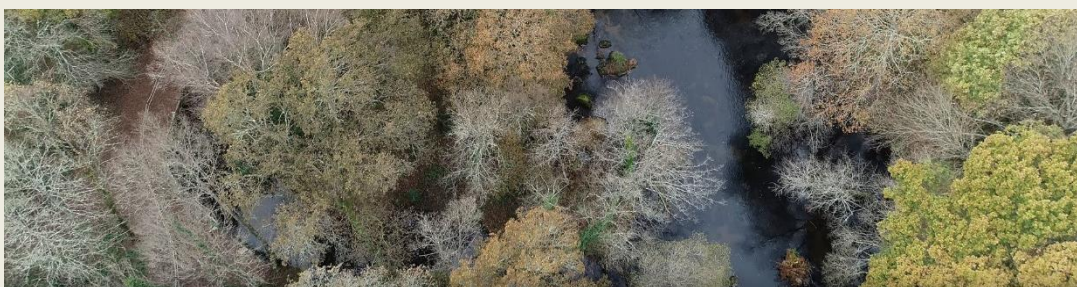
- The surface area of water-loving forest (91E0*) in which exotic and invasive species have been controlled and eradicated: 23.1 ha.

- Surface area of water-loving forest restored (91E0*): 24.1 ha, of which 23.3 ha correspond to the improved composition and structure of 91E0*, while the remaining 0.8 ha correspond to the increase in the type of habitat.



C6. Improving the river corridors in the upper basin of the River Miño (SAC Parga-Ladra-Támoga ES1120003)

The result of this action included the selective removal of dead trees, the elimination of exotic species with invasive potential and the restoration of plant ground cover of priority habitat 91E0*. This made it possible to improve the state of conservation of 7.8 ha of alluvial forest (91E0*) in the upper basin of the River Miño, in the Parga-Ladra-Támoga (ES1120003) SAC. The said total surface area was divided into the 3 planned zones: River Miño-Lugo (2.0 ha), River Miño-Rábade (1.8 ha) and River Parga (4.0 ha).

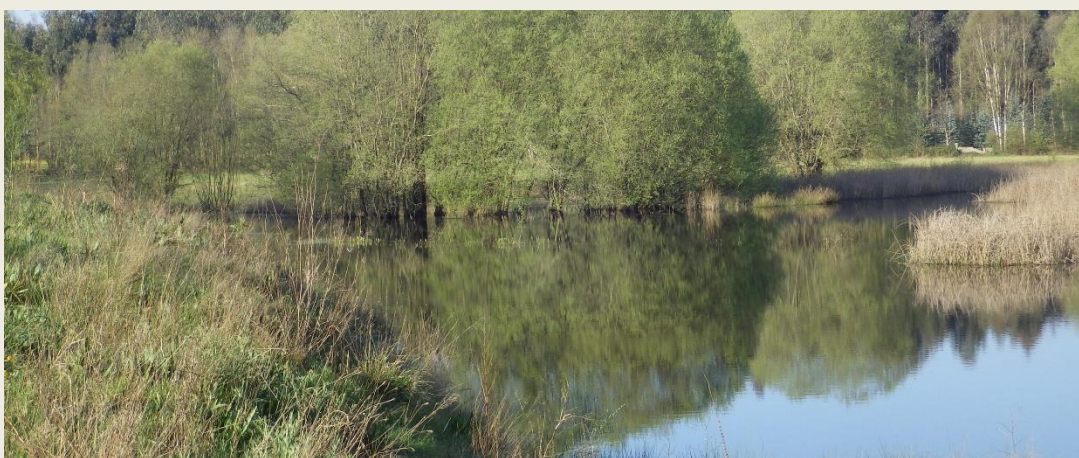


Progress indicators:

- Area of alluvial forest (91E0*) from which dead wood was removed: 7.8 ha.
- Area of alluvial forest (91E0*) in which exotic and invasive species were controlled and eradicated: 7.8 ha.
- Area of alluvial forest restored (91E0*): 7.8 ha.

C7. The sustainable management of continental wetlands in the upper basin of the River Miño (SAC Parga-Ladra-Támoga ES1120003)

Action C7 centred on A Lagoa do Rei (Rábade, Lugo), where topographic correction of the lake banks involved making their slope more gradual, with the aim of creating a broader transition area between the aquatic and terrestrial environments to prevent the water level in this zone from falling too quickly. The access to educational resources around the lake has also been improved and adapted.



C8. Improving the state of conservation of habitat 91E0* in the River Estorãos (SAC Rio Lima, PTCON0020)

Conservations works were undertaken in the flood plain of the river Estorãos, an affluent of the river Lima, in land that is owned by the Town of Ponte de Lima (Portugal), located within the area denominated the “Paisagem Protegida Regional das Lagoas de Bertandos e São Pedro de Arcos”.



The works centred on i) eliminating and controlling invasive exotic species; ii) passive restoration through herbivore management and the protection of natural regeneration, as well as the active restoration of the native plant ground cover of habitat 91E0*; iii) cutting down alder trees which had died due to the disease caused by the *Phytophthora alni* pathogen.



These actions made it possible to recover the state of conservation of 21.3 ha of habitat 91E0*.

[D]. monitoring actions

D1. Monitoring the repercussions of specific conservation works on habitats

This action analysed the efficacy of the projects works in comparison with the current situation, in terms of the improvement in the state of conservation of habitats 91E0* and 9230.

In all of the areas involved the specific conservation actions make it possible to maintain the surface area covered, the improvement in the structure and composition of the target habitats, together with the elimination of pressures and threats.



The analysis uses the set of monitoring indicators described in action A1, which make it possible to estimate whether the project has had a positive effect on habitats.



D2. Evaluation of the project's socioeconomic impact

Action D2 quantifies the main positive socioeconomic impacts of the project.

- The different socioeconomic benefits arising due to the environmental improvement in the restored areas were estimated using two econometric models based on the contingent evaluation method.
- The creation of green jobs and the injection of resources into the local economies of the restored areas thanks to the execution of the project are measured by analysis of the dedicated personnel and the declared expenses of the partners involved.
- The social gains deriving from the increase in skills and public awareness are quantified using a social perception questionnaire that was applied to the participants in training and educational actions and the supply of information and awareness raising work that took place as part of the project.

D3. Evaluation of the impact of the project on ecosystem functions

The aim here is to check the effectiveness of the project conservation works on the functions and services provided by ecosystems in the areas covered by Red Natura 2000 where they took place.



This action achieved the following results:

- The development of European MAES methodology and its specific application to river corridors.
- Mid-term indicators and long-term simulation.
- Cost-effectiveness and cost-benefit indicators.

Results were obtained for each indicator, taking different scenarios into account (0: *prior to the project interventions*, 1: *after the project interventions*, 2: *around the year 2050*). For each area these indicators were analysed taking into account the difference between pressures, conditions and ecosystem services.

D4. Monitoring project impact indicators

Action D4 evaluates the progress made towards attaining the project goals at regular intervals. It does so by establishing a series of metric indicators which are easy for all of the project partners to quantify and compile.

The project has surpassed its planned impact on the target habitats (91E0* and 9230), almost doubling the values which were set initially. This has led to a significant improvement in the state of conservation of the river corridors targeted by the project.

It has also surpassed the expected impacts in terms of raising the awareness of the population, together with national and international promulgation, the replication and transfer of the results attained and the lessons that were learnt, as well as the technical training of the agents involved in management.



[E]. actions for raising awareness and promulgation

E1. Project communications and promulgation strategy

E1.1. Communication plan

Style book

Design and execution protocols for the tasks of awareness-raising and promulgation

Corporate identity manual

The official image of the project for all of the information generated

E1.2. Materials for raising awareness, resources and the web

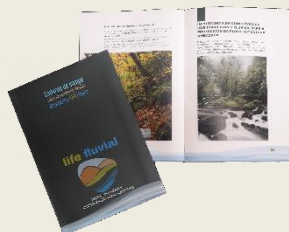
Travelling exhibition (15 panels)



Small folder / project booklet (5,000 copies)



Field book (470 copies)



Educational audio-visual

The preparation of an extended version (10') and a shorter version (2'50'') with audio and subtitles in four languages (Spanish, Galician, English and Portuguese).

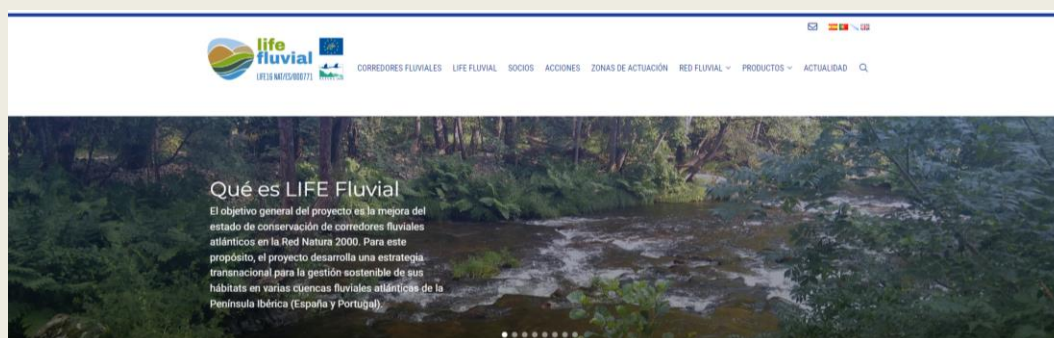


Children's book (2,000 copies)



Website and social networks

Activity in the project website and its social networks has been relevant, with an accumulated reach amounting to more than 860,000 interactions.



Other products



Pencils [1,000 units]; ballpoint pens [1,000 units]; colored pencils [1,000 units]; pins [1,000 units]; badges [1,000 units]; USB memory sticks [1,000 units]; t-shirts [1,000 units]; caps [500 units]; rucksacks [1,000 units]; sleeveless jackets [400 units]; raincoats [120 units]; jackets [72 units].

Resources



Installation of information panels [35]



Fitting-out of Orto Hide



Installation of informative milestones [40]



Fitting-out of Lagoa do Rei Hide



Installation of Laguna Villadún Hide



Fitting-out of Crendes Hide



E2. Promulgation and awareness-raising programme

E2.1 Project presentation



E2.2 External events



36 external events

Workshops, seminars, congresses, fairs, to raise the profile of the project in other fields

E2.3 Red Natura 2000 Day



2018. Rábade (Lugo)

Organizer: IBADER

- Visit to the SAC Parga-Ladra-Támoga
- Red Natura 2000 seminar



2019. Bergondo (A Coruña)

Organizer: Asociación Mariñas-Betanzos

- Visit to the SAC Betanzos-Mandeo
- Workshops and educational courses



2020. Río Eo, Ocos and Terras de Burón

Biosphere Reserve

Organizer: InterEo

- Placing Red Natura 2000 flags on 14 town halls
- Informative activities



2021. Ponte de Lima (Portugal)

Organizer: Universidad de Lisboa

- Visit to the SAC Río Limia
- Awareness-raising workshop



Te invitamos a participar en la jornada de celebración:
Día europeo de la Red Natura 2000
30 aniversario del programa LIFE

Sube tu foto

www.natura2000day.es

Quién LIFE 14715/0007/1 Universidad de Oviedo Indurot	Cuándo 20 de mayo de 2022	Dónde Edificio de Investigación del Campus Universitario de Mieres
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Más info en www.life-fluvial.eu y en nuestras redes sociales Facebook, Twitter e Instagram

Entrada Libre hasta completar aforo. Apuntate en: <https://forms.office/2d1f7d44f4e9> Envía tus dudas a: life-fluvial@uniovi.es

Logos: Universidad de Oviedo, Indurot, USC, IBADER, emolcsa, Tragsa, etc.

20/05/2022. Mieres (Asturias)

Organizer: INDUROT (Oviedo University)

JORNADA DE SENSIBILIZACIÓN DE LA POBLACIÓN LOCAL
 DÍA DE LA RED NATURA 2000 Y 30.º ANIVERSARIO DEL PROGRAMA LIFE

21/05/2022. Environmental Interpretation Centre in Lagunas Bertandanos y São Pedro de Arcos (Portugal)

Organizer: Lisbon University

CELEBRACIÓN DO DÍA DA REDE NATURA 2000

26 de maio de 2022

organiza: +info: 981 669 541 info@marinasbetanzos.gal

colabora:

www.life-fluvial.eu

26/05/2022. Oleiros (Galicia)

Organizer:

- > Asociación Mariñas-Betanzos
- > IBADER (Santiago de Compostela University)
- > EMALCSA

E2.4 School workshops



174 workshops
50 schools



4,660 schoolchildren



Creation of a digital board game

www.oxogodagota.es

- > Mero-Barcés basin
- > Upper Miño basin
- > Lima River Valley

E2.5 Volunteer days



18 days



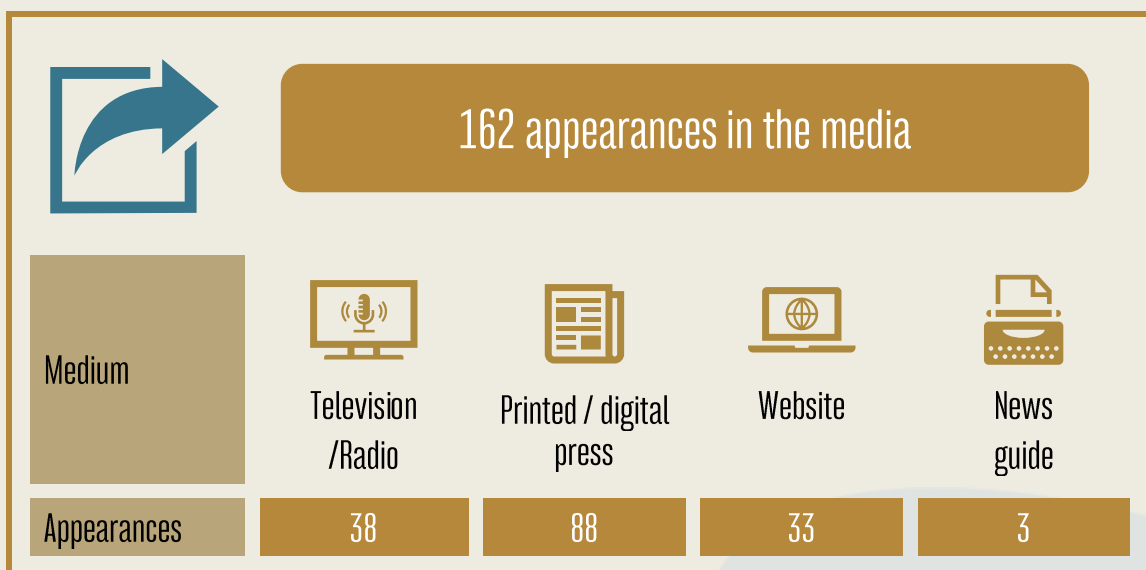
436 volunteers



E2.6 Electronic bulletin

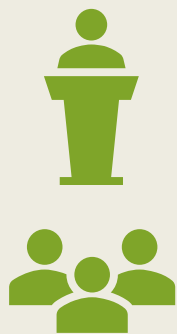


E2.7 Appearances in the media



E3. Programme for specialized promulgation, training and technical skills

E3.1 Promulgation workshops for interested parties



Specialized promulgation

13 seminars

211 participants



E3.2 Good Practices Manual

The Good Practices Manual for the Restoration of River Corridors is a document which describes the techniques used, the results obtained and the lessons learnt in the LIFE Fluvial Project during the execution of the same. It is based on the data gathered for preparatory action A1, together with all of the know-how generated during the execution of the specific actions for conservation.



E3.3 Training and technical coaching



Training and technical coaching

11 seminars

341 participants



E4. Networking with other projects

This action has established a bidirectional network for the exchange of information, encouraging the development of collaborative activities to improve knowledge and skills. Synergies with LIFE projects and other European research and innovation projects were created for this during the project, together with cooperative links with public administration bodies and local entities in different fields.



[F]. management actions



Action F1 [project management] had the purpose of coordinating general management activities, giving LIFE Fluvial the necessary decision-making and monitoring bodies to achieve the proposed objectives.

At the same time, it has permitted efficient communication between the members of the consortium and the European Commission and the interested public bodies as well as with the local, regional, national and European populations.

The main methodologies used were coordination meetings and monitoring commissions.

On the other hand, action F2 [After-LIFE Conservation Plan] was used to establish the appropriate strategy to achieve the long-term sustainability of the project, structuring the actions which were considered to have the potential for continuity after it had ended.





**life
fluvial**

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INDUROT. Campus de Mieres. Edificio de Investigación
C/ Gonzalo Gutiérrez Quirós s/n, 33600 Mieres
(+34) 985 45 81 18 - lifefluvial@uniovi.es

www.lifefluvial.eu

