



life
fluvial

LIFE16 NAT/ES/000771



Action E.2. Outreach and awareness programme

newsletter nº3

december 2020

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





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actions at A Lagoa do Rei

After the work for exotic species removal and topographic adaptation at the edge of the lake, the last phase of the project at A Lagoa do Rei began: the restoration of its natural habitats by planting its characteristic species (*Salix atrocinerea*, *Quercus robur*, *Fraxinus excelsior*, *Betula celtiberica*, *Acer pseudoplatanus*, *Corylus avellana*, etc.). This has promoted the improvement of the state of conservation of the 91E0* habitat and has created the ideal conditions to achieve the restoration of the lake ecosystem and its associated ecotones. Control of new shoots of invasive species was also carried out.



Finally, the project proceeded to implement a number of measures and the installation of some devices to control public use of the lake, following the indications from the Provincial Natural Heritage Service in Lugo (*Dirección Xeral de Patrimonio Natural, Xunta de Galicia*), which is the competent entity as regards the Natura 2000 network, and from the Santo Anxo da Garda de Rábade Educational Institution (*Consellería de Política Social, Xunta de Galicia*), which is the adjacent center that has managed this land in the past. Thus, the action taken by LIFE Fluvial at A Lagoa do Rei has generated a lot of synergies with the agents involved in the conservation and management of the said land. In addition to the environmental benefits that were the objective of the LIFE project.



progress in the restoration actions



actions in the enclaves of the Miño River

Given that in the years 2018 and 2019 almost all the planned work had been performed, in 2020 the focus has been on controlling the few invasive species that had sprouted new shoots (*Eucalyptus* sp., *Robinia pseudoacacia*) in the sections that were the object of the action and reinforcing the 91E0* habitat by planting some indigenous species (*Salix atrocinerea*, *Fraxinus excelsior*, *Betula celtiberica*, *Acer pseudoplatanus*), in order to achieve a better restoration of the natural conditions that are inherent to this type of habitat. The action has been very successful in terms of surface impact and conditions near naturalness, particularly taking into account that it has been implemented in the most valuable fluvial sections as regards conservation of the Iberian NW, because of the richness of their habitats and species, as well as of their connectivity to the A Terra Chá wetland.



actions at the Ribadeo Ria – Eo Ria corridor

In the first months of the year 2020, the first phase of the planting of trees typically found in the gallery forests and oak groves in Galicia and Portugal was continued with. This task had begun in the fall of 2019.

In spring, the removal of invasive alien species was taken up again in several areas of action at the edge of the Ribadeo estuary: pine trees (*Pinus pinaster*), butterfly-bush trees (*Buddleja davidii*), liquorice plants (*Helichrysum petiolare*), pampas grass (*Cortaderia selloana*), Cape ivy (*Delairea odorata*), etc. Some eucalyptus (*Eucalyptus globulus*) and acacia (*Acacia melanoxylon*) trees were removed too, as well as some new shoots from the ones cut down the previous year. Throughout the summer months, this phase was completed with the felling of the eucalyptuses found on the Asturian banks of the ria in the vicinity of the towns of Miou and Louteiro (Vegadeo).

An experimental test is being carried out simultaneously in an enclave close to the As Aceas (Ribadeo) mill to control the new *Eucalyptus globulus* shoots with various methodologies, such as applying brine or covering them with plastic, which is being quite successful. It is planned to be completed in 2021.

Finally, the second phase of the indigenous species planting was completed in the last months of the year. A total of over 5,800 willow nursery cuttings, and around 16,000 ash, maple, oak and birch seedlings were planted. This action has enabled the improvement of more than 4 ha. of 91E0* habitat and 1 ha. of 9230 habitat, and it will add 11 ha. to the area of these habitats.



actions in the middle basin of the Eo River

In the spring of 2020, further action was taken in this area by planting some species typically found in gallery forests in all the enclaves where previous action had been taken. In addition, the second phase of the removal of invasive alien species was carried out, dealing with some species that had already been removed, such as crocosmia (*Crocasmia × crocosmiiflora*), Cape ivy (*Delairea odorata*) and wandering Jew (*Tradescantia fluminensis*); and others, such as tall flatsedge (*Cyperus eragostis*), poke (*Phytolacca americana*), eucalyptus (*Eucalyptus globulus*) and cherry laurel (*Prunus laurocerasus*). Also, some new individuals and stumps sprouted from Canadian poplars (*Populus × canadensis*), privets (*Ligustrum ovalifolium*) and black wattle (*Acacia melanoxylon*) cut down the previous year were removed.

In September, the bioengineering action planned for the stabilization of a bank in the recreational area of El Fondón in Vilaboa (A Pontenova) was implemented. This resulted in the mitigation of the erosive process and the consequent loss of soil, which, in turn, has favored the riverside forest restoration tasks.

Along the San Tirso de Abres river walk, included in the territorial scope of this action, 12 signs were installed identifying the characteristic species of the gallery forest. They have basic information on each species, as well as a QR code that links up with a website where more detailed information is available.

In the fall of 2020, the action was completed with the second phase of the planting, which has contributed a total of over 2,400 willow nursery cuttings, and more than 400 ash, maple and oak seedlings to the gallery forest. These actions have enabled the improvement of the state of conservation of the 91E0* habitat in almost 10 ha. and an area increase of over 1.5 ha.



INDUROT's technical staff visited the Eo basin action areas 18 times throughout the year to monitor the actions performed by TRAGSA.

During these visits, some phytosociological inventories of the flora were made. Together with several other indicators, they will enable the assessment of the impact of the restoration actions on the state of conservation of the habitats.



In June, they visited the A Pontenova and San Tirso de Abres action enclaves with the mayors and staff of both town councils, and with environmental agents from the Bay of Biscay Hydrographic Confederation, with the purpose of highlighting the importance of conserving the 91E0* habitat and the work performed within the framework of the project.



actions at the Arnao and Villadún lakes

It has been more than a year since the completion of the work to improve the state of conservation of the Arnao and Villadún (Castropol) lakes (SAC/SPAB ES1200016 Eo ria), and the results of the environmental recovery are already noticeable. Firstly, the presence of exotic species, such as pines, Canadian poplars, weeping willows and calla lilies near the lakes has decreased considerably, enabling the recovery of land by indigenous species and improving the condition of the habitats in these wetlands. Secondly, the plantations of sallow willows, ash trees, birches and maples keep growing, and they will enable, once they reach their maturity, the establishment of continuity with the lakes. In the year 2020, some tasks involving reinforcement planting, removal of protective tubes and thinning out around the smallest young plants were performed. In addition, a study was carried out with the purpose of finding a suitable location for a bird observatory at the Villadún lake, to be installed at the beginning of 2021.



actions at the Lima River SCI

In the area surrounding the Estorãos River, a tributary of the Lima, the following tasks have been carried out for the conservation of some swamp alder woodlands:

Identification, georeferencing and labeling of symptomatic, asymptomatic and dead alders to monitor the development of the disease caused by the *Phytophthora alni* pathogen, and for subsequent selective felling of dead trees.

In August and September 2020, some potentially invasive alien species were removed from two 7.7 ha. plots by means of the felling and extraction of eucalyptuses (*Eucalyptus* spp.) and the debarking of trunks or manual grubbing of black wattles (*Acacia melanoxylon*). In September 2019, the same work was done in another 2.7 ha. of land, so that exotic species were removed from a total of 10.4 ha. (3.9 times more than the initially planned area).

For the active restoration of the 91E0* habitat, 42 willow trees (*Salix atrocinerea*) were selected and marked for propagation by cuttings intended for the planting in 4.5 ha. of the area where the cutting and extraction of eucalyptuses had taken place in 2020. Also, the planting was planned and the preliminary preparation of the land was carried out with the identification of the plots where it is to take place.

The passive restoration included the maintenance and monitoring of fences installed in two areas with different characteristics, in order to assess the influence of grazing and of the cultural practices in the regeneration and survival of the characteristic species of the habitat, and use the results of this monitoring to promote their conservation and recovery.



The work regarding the monitoring of the actions to conserve the 91E0* habitat was continued and the preliminary results obtained indicate high mortality (98.4%) of the acacias (*Acacia dealbata* and *A. melanoxylon*) about one year after the debarking of the trunks, and zero or very low vegetative vigor of the new shoots of *Eucalyptus camaldulensis* cut in September 2019 (verified in half of the analyzed stumps). However, it is important to watch the action enclaves for the following years in order to control the vegetative and seed regeneration of *Acacia* spp. and *Eucalyptus* spp., so that further action can be taken if necessary.



Eucalyptus camaldulensis stumps
1 year after the cutting.

← No shoots

Shoots with very low vegetative
vigor →



Vegetative regeneration 1 year
after the cutting.

← *Acacia dealbata*

Acacia melanoxylon →



actions in the Betanzos-Mandoe SAC

The project is currently completing the removal of invasive flora on the left bank of the Betanzos ria, in land of the municipality of Bergondo, with the purpose of restoring the natural habitats of the enclave.

In the first phase of the work, 48 pampas grass individuals were removed. Some of them weighed more than 900 kg, for a total of over 40,000 kg of biomass. Together with the pampas grass, some other invasive flora species that were contributing to cause a negative condition of the fluvio-estuarine ecosystem have been removed: 40 trunks of *Populus × canadensis*, 25 individuals of *Tamarix gallica*, 10 trunks of *Platanus orientalis*, 10 trunks of *Eucalyptus globulus*, and over 1,000 square meters occupied by *Crocodymia × crocosmiiflora*.

The elimination and control of the invasive alien species have been complemented with the removal of the remains of the sports facilities and materials that had been occupying part of the special area of conservation. Such remains and the whole biomass that was removed have been taken to an authorized waste management facility.

Once the aforementioned phases had been completed, the preliminary tasks for the restoration of the alluvial forest began; consisting in the performance of topographic corrections and in the planning of tasks to recover the vegetation cover with some indigenous species, such as *Fraxinus excelsior*, *Laurus nobilis*, *Acer pseudoplatanus* and *Betula celtiberica*.



Removal of invasive alien species. Removal of waste materials ↑↓

Institutional visit to the area of action ↓

↓ Integration of the recovered area into the marsh



actions in the Abegondo-Cecebre reservoir SAC

The actions in the ES1110004 Abegondo-Cecebre reservoir SAC try to contribute to mitigate the spread of invasive alien species in environments that are key to the conservation of the biodiversity, acting on species that managed to spread in the area, trying to reduce their population, and on others whose spreading is much more reduced but not less worrying. The removal techniques are implemented after the identification of the various species, acting selectively, individually and always respecting the native vegetation. The removal of the exotic species is done by hand, except in the case of large plants, such as trees and pampas grass (*Cortaderia selloana*), which may weigh over 900 kg. In such cases, mechanical means are used to remove the trunks or to uproot the pampas grass. LIFE Fluvial never uses herbicides, because it works in fragile areas of the Natura 2000 network with very vulnerable, priority ecosystems.



← Preliminary work and removal of invasive alien species



← Refurbishment of bird observatories and installation of a display panel

↓ Abegondo-Cecebre reservoir SAC



communication and dissemination

field notebook

The drafting, design, editing and printing of LIFE Fluvial's field notebook is included in the framework of the communication and dissemination actions of the project. Its purpose is to collect technical and informative data regarding the objectives and values of the project, in a handy, strong medium to be used when providing information or training, or in fieldwork, enabling simultaneous consultation of information and note-taking.



A total of 360 copies were published in 3 languages (Spanish, Galician and Portuguese) for the dissemination of the project.

This dissemination action was carried out by the Mariñas-Betanzos Association for Rural Development with scientific advice from the three universities taking part in the project.



Audiovisual

The fieldwork aimed at making an audiovisual program to disseminate the key aspects of the project started in August. The final result, planned for the first quarter of 2021, will comprise 2 videos: one will be a 10-15-minute documentary, and the other one will be in spot RRSS format and will last 2-3 minutes. In both cases, both the voice-over and subtitles will be in four languages (Spanish, Galician, Portuguese and English).



the drop game

Throughout the year 2020, our partner EMALCSA has developed an interactive internet game (www.oxogodagota.es) within the framework of the actions of the project aimed at the educative community.

The game, which is played on a board where some of LIFE Fluvial's action areas are represented, consists in multiple choice type questions or challenges and audiovisual means informing of some of the main subjects of the project.

Its contents are organized in culture, environment and specific LIFE Fluvial sections, always relating to the values promoted by the project.

In addition to EMALCSA, the Institute for Agrarian Biodiversity and Rural Development (IBADER) and the Mariñas Coruñesas e Terras do Mandeo Biosphere Reserve have actively collaborated in the preparation of contents.

For the moment, it is only available in one language (Galician) with two boards: Mero-Barcés basin and high Miño basin.



The traveling exhibition shows the most significant aspects of the LIFE Fluvial project in an informative way, with the purpose of reaching a large number and different kinds of people.



↑↓ Real Instituto de Estudios Asturianos. RIDEA
(Oviedo, Asturias); 14/10/20 - 30/10/20



↑↓ Centro de Interpretação Ambiental das Lagoas de Bertandós e São Pedro d'Arcos
(Ponte de Lima, Portugal); 09/11/20 - 12/02/21



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Newsletter no. 3. December 2020



LIFE Fluvial website and social media



RIVER CORRIDORS LIFE FLUVIAL PARTNERS ACTIONS LOCATION AREAS RIVERS NETWORK PRODUCTS NEWS

LIFE Fluvial

The overall aim of the project is the improvement of the conservation status of Atlantic river corridors in Natura 2000 network. For this purpose, we develop a transnational strategy of sustainable management of river corridor habitats, in several Atlantic river basins of the Iberian Peninsula (Spain and Portugal).

In 2020, more contents have been incorporated into the website; over 40 news items related to the project have been published; the events held during this period have been disseminated; and new documents have been added to the product section regarding the completed and performed actions. In addition, a new game section was created, where the *Xogo da gota* can be accessed, as well as an audiovisual section, with recordings relating to conferences about the project, regional television appearances and other material prepared for online workshops or congresses.

	Followers	Post/tweets	Mentions	Interactions	Reach
Twitter	882	217	293	5,736	224,500
Instagram	468	32	---	617	4,905
Facebook	363	73	---	1,100	22,848
Youtube	---	11	---	---	518
Website	---	---	---	---	10,775
TOTAL	1,713	333	293	7,453	263,546



Facebook, Twitter and Instagram have been updated on a continuing basis with the main news and events related to the project and the river corridors. Also, in 2020, a reproduction list has been created in the YouTube channel of the Institute of Natural Resources and Territorial Planning (INDUROT) that enables direct access to the videos in which the project is involved.



school workshops in the town of Arteixo

In February 2020, the Mariñas-Betanzos Association, in collaboration with EMALCSA, organized two workshops, which were carried out at the San Xosé Obreiro de Arteixo Nursery and Primary School.

Date	School	Year	Students	Subject matter
06/02/2020	San Xosé Obreiro Nursery and Primary School	Year 5	23	Water cycle
06/02/2020	San Xosé Obreiro Nursery and Primary School	Year 6	28	Water cycle
Total workshops:		2	Total students:	51

The educational contents dealt with water on Earth, the water cycle both in nature and as used for human consumption, as well as advice for responsible use at home.

The explanations were complemented with game dynamics and questions to be discussed among the students. The game simulates a water route in the metropolitan area of A Coruña within the basins of the Mero and Barcés Rivers, which are the sources of water for the Cecebre reservoir (ES1140004 Encoro de Abegondo-Cecebre SAC).



spreading and awareness raising

school workshops in the city of A Coruña

The Mariñas-Betanzos Association, in collaboration with EMALCSA, organized a total of 16 educational workshops in the city of A Coruña during January and February 2020.

Their objectives were essentially focused on one of the main awareness-raising values within the LIFE FLUVIAL framework: the water cycle and its importance for the environment. In addition, information was given about the main values proclaimed by the project and about the Natura 2000 areas in the vicinity.



Date	School	Year	Students	Subject matter
22/01/2020	Sanjurjo Carricarte Nursery and Primary School	Year 5	27	Water cycle
22/01/2020	Sanjurjo Carricarte Nursery and Primary School	6ª primaria	25	Water cycle
27/01/2020	Alborada Nursery and Primary School	Year 5	26	Water cycle
27/01/2020	Alborada Nursery and Primary School	Year 5	27	Water cycle
27/01/2020	Alborada Nursery and Primary School	Year 5	24	Water cycle
28/01/2020	Alborada Nursery and Primary School	6ª primaria	26	Water cycle
28/01/2020	Alborada Nursery and Primary School	6ª primaria	25	Water cycle
28/01/2020	Alborada Nursery and Primary School	6ª primaria	24	Water cycle
04/02/2020	Emilia Pardo Bazán Nursery and Primary School	6ª primaria	25	Water cycle
04/02/2020	Emilia Pardo Bazán Nursery and Primary School	6ª primaria	26	Water cycle
04/02/2020	Emilia Pardo Bazán Nursery and Primary School	6ª primaria	26	Water cycle
05/02/2020	Santo Domingo FESD	Year 5	25	Water cycle
05/02/2020	Santo Domingo FESD	Year 5	27	Water cycle
11/02/2020	Emilia Pardo Bazán Nursery and Primary School	Year 5	25	Water cycle
11/02/2020	Emilia Pardo Bazán Nursery and Primary School	Year 5	25	Water cycle
11/02/2020	Emilia Pardo Bazán Nursery and Primary School	Year 5	25	Water cycle
Total workshops:		16	Total students:	408



The contents of the workshops were focused on the protection of water and the responsible use of water, as well as on the conservation of river corridors as connectors of water, fauna and flora. Question-answer dynamics were used by means of a game board.



school workshops in the town of Bergondo

In February 2020, the Mariñas-Betanzos Association for Rural Development carried out a workshop at the Cruz do Sar Integrated Public School.

Date	School	Year	Students	Subject matter
20/02/2020	Cruz do Sar Integrated Public School	Year 1	31	Drawing nature
Total workshops:	1	Total students:	31	

The workshop began with an institutional presentation by the mayor of Bergondo, followed by a short lecture on the main values to be taken into account for the preservation of the flora and fauna at the river corridors. Its main activity consisted in learning how to draw nature and it was taught by the local artist Suso Cubeiro. The children who took part in the workshop were given the chance to show their drawing skills.



school workshops in the town of Betanzos

In January 2020, the Mariñas-Betanzos Association organized and carried out two workshops at the Francisco Vales Villamarín Nursery and Primary School.

Their objectives were focused on the Mandeo River, included in the Betanzos-Mandeo SAC, one of LIFE Fluvial's action areas. Some of the addressed subject matters were river courses, their natural and cultural values, flora and fauna, as well as sustainable use dynamics.



Date	School	Year	Students	Subject matter
17/01/2020	F. Vales Villamarin Nursery and Primary School	Year 3	120	Get to know the Mandeo River
24/01/2020	F. Vales Villamarin Nursery and Primary School	Year 4	124	Get to know the Mandeo River
Total workshops:		2	Total students:	244



school workshops in the town of Cambre

In February 2020, the Mariñas-Betanzos Association, in collaboration with EMALCSA, organized four workshops, which were carried out at the Portofaro and Gonzalo Torrente Ballester Nursery and Primary Schools, both of them in Cambre.

Date	School	Year	Students	Subject matter
07/02/2020	Portofaro Nursery and Primary School	Year 5	26	Water cycle
07/02/2020	Portofaro Nursery and Primary School	Year 5	26	Water cycle
19/02/2020	G.Torrente Ballester Nursery and Primary School	Year 5	21	Water cycle
19/02/2020	G.Torrente Ballester Nursery and Primary School	Year 6	17	Water cycle
Total workshops:		4	Total students:	90

The educational contents dealt with water on Earth, the water cycle both in nature and as used for human consumption, as well as advice for responsible use at home.

The explanations were complemented with game dynamics and questions to be discussed among the students. The game simulates a water route in the metropolitan area of A Coruña within the basins of the Mero and Barcés Rivers, which are the sources of water for the Cecebre reservoir (ES1140004 Encoro de Abegondo-Cecebre SAC).



school workshops in the town of Oleiros

In February 2020, six water cycle workshops were carried out at the Ramón del Valle Inclán Nursery and Primary School in the town of Oleiros (A Coruña), combining theoretical explanations and solving doubts with a board game with which the students could learn by playing and competing.

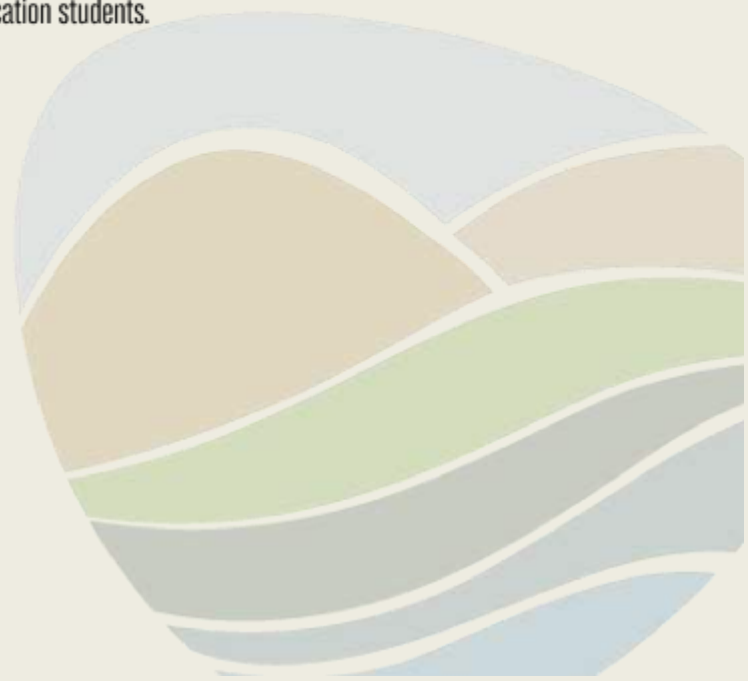


Date	School	Year	Students	Subject matter
12/02/2020	R. del Valle Inclán Nursery and Primary School	Year 6	25	Water cycle
12/02/2020	R. del Valle Inclán Nursery and Primary School	Year 6	26	Water cycle
12/02/2020	R. del Valle Inclán Nursery and Primary School	Year 6	25	Water cycle
14/02/2020	R. del Valle Inclán Nursery and Primary School	Year 5	22	Water cycle
14/02/2020	R. del Valle Inclán Nursery and Primary School	Year 5	22	Water cycle
14/02/2020	R. del Valle Inclán Nursery and Primary School	Year 5	22	Water cycle
Total workshops:		6	Total students:	142

on Tour with Science

As part of the activities for the diffusion of information on river corridors, the Carlos Bousoño Basic Education Public School, in Boal (Asturias), was visited on January 22nd within the framework of the "On Tour with Science" lecture program of the University of Oviedo.

Professor Antonio Torralba (Institute of Natural Resources and Territorial Planning (INDUROT), University of Oviedo) talked about matters related to river corridors and invasive alien species in a lecture for 43 secondary education students and another, more ludic, lecture for 40 primary education students.



online support for information campaigns at schools

On March 14th, 2020 was published Royal Decree 463/2020, declaring the state of alert for the management of the health crisis situation caused by COVID-19. In view of the closure of the schools, a significant part of the classroom learning activities scheduled by the MariñasBetanzos Association for Rural Development had to be suspended.

In order to continue to offer educational cover in environmental matters, the Association adapted the available contents and generated new ones for telematic activities for the 2020-2021 school year up until June 2020.

For that purpose, the Google Classroom platform was used in collaboration with the school teachers involved.



children's television program

Following the school workshop carried out on October 20th, 2019 at the Terra Chá de Vilalba Nursery and Primary School in Lugo, supported by technical staff from the Institute for Agrarian Biodiversity and Rural Development (IBADER) and the Mariñas-Betanzos Association for Rural Development, an episode of the "BraulioTuber" series of the Televisión de Galicia network was recorded.

In July 2020, the said recording was broadcast for the first time and it has been periodically broadcast again since then in the regional television network of Galicia. It is also available on its website (<http://www.crtvg.es/infantil/programas/braulio-tuber>).



volunteer day at the Encoro SAC in Abegondo-Cecebre

It took place on February 29th, 2020 with the collaboration of the 'LIFE Evergreen with volunteers, LIFE LEW0' (LIFE16 ESC/ES/000001) project, coordinated from the Directorate General for Youth, Participation and Voluntary Work of the Regional Ministry of Social Policy of the *Xunta de Galicia*, in collaboration with the Directorate-General for Natural Heritage of the Regional Ministry of Environment, Territory and Housing.

Its objective was focused on the removal by hand, grubbing, of the herbaceous invasive species *Erigeron canadensis*.



Some staff from the Institute for Agrarian Biodiversity and Rural Development (IBADER) provided information about the project and the SAC, as well as about the problems caused by invasive alien species. There was also some training in how to recognize the *Erigeron canadensis* and how to remove it with safety.

In addition, some staff from the Mariñas-Betanzos Association, EMALCSA and TRAGSA collaborated. TRAGSA was in charge of taking the waste material to an authorized waste management facility.

A total of 4,5 m³ of plants was removed (around 250 kg).



volunteer day in the recreational area of the Arnao lake

The volunteer day took place on June 11th, 2020, in the recreational area of the Arnao lake (Castropol, Asturias). Promoted by the Institute of Natural Resources and Territorial Planning (INDUROT), with the collaboration of the InterEo and Mariñas-Betanzos associations, its objective was the removal of the invasive plant *Arctotheca calendula*, commonly known as Cape daisy or African daisy. This plant was introduced as an ornamental plant and it is now well adapted to the coastal climate of the Bay of Biscay.



After 2 hours of manual work, almost one cubic meter of Cape daisy had been collected, together with very localized, small populations of other exotic species, such as Japanese pittosporum (*Pittosporum tobira*) and some Canadian poplar (*Populus × canadensis*) seedlings, which the TRAGSA staff processed for their elimination.

Then, some indigenous herbaceous species were planted to compete with the invasive plants and prevent them from spreading. More specifically, the planted seeds were of pioneering species from indigenous pasturelands with ecological certification, among which we would like to highlight clover (*Trifolium* spp.), mallow (*Malva moschata*), rib-grass (*Plantago lanceolata*) and a lot of gramineae species, such as *Arrhenatherum elatius* subsp. *bulbosum*.

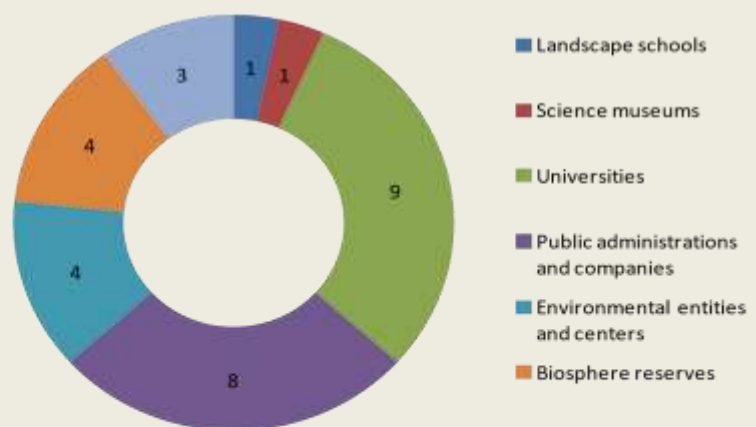


technical seminar on environmental recovery of wetlands

Since all the types of Ramsar wetlands found in Europe correspond to types of habitats of Community interest and are an essential part of the Natura 2000 network, LIFE Fluvial celebrated World Wetlands Day on January 30th, 2020 with the motto 'Wetlands and Biodiversity', through the organization of this technical seminar, carried out on EMALCSA's premises and with the collaboration of the Mariñas-Betanzos Association.

This specialized technical seminar brought together a total of 30 attendees, with heterogeneous professional profiles but all of them associated with the environmental sphere.

Nine papers were given throughout the day, two of them related to LIFE projects (LIFE Tremedal and LIFE Convive).



specialized invasive alien species symposium

Organized by the partners Institute of Natural Resources and Territorial Planning (INDUROT) and InterEo, four specialized symposiums were held throughout the year focused on the problems caused by invasive alien species.



↓ 3rd Conference

(Conference room of the town hall of San Tirso de Abres; 10/06/2020)
Presentation of the LIFE Fluvial project to the inhabitants of the town.
Main exotic species found in the area



LIFE16 NAT/ES/000771
Newsletter no. 3. December 2020

↓ 4th Conference

(Casa da Xuventude de Ribadeo; 30/06/2020)
Presentation of the LIFE Fluvial project to the inhabitants of the town.
Main exotic species found in the area



↑ 1st Conference

(Telematic; 06/05/2020)

Promoting knowledge of invasive alien species: environmental
problems and action strategies

↑ 2nd Conference

(Telematic; 22/05/2020)

Promoting knowledge of invasive alien species: environmental
problems and action strategies

the great history of water

The LIFE Fluvial project was present in the university outreach courses of the University of Oviedo, in the course about The Great History of Water, where the basic concepts of the Great History approach in the study of water were analyzed. Its main purpose was to integrate scientific knowledge highlighting the fragility of complex systems as well as the conditions required to maintain such fragility.

El río como corredor fluvial

El corredor fluvial no se limita al cauce mojado del río en estiaje, sino que abarca el conjunto del territorio fluvial, incluyendo la vegetación de ribera y el espacio que ocupan las aguas durante las crecidas, junto con la cubierta vegetal asociada.

FUNCIONES:

- ✓ Suministro de agua
- ✓ Reservorio de biodiversidad
- ✓ Movilidad de las especies
- ✓ Conectores territorios y ecosistemas
- ✓ Aporte de sedimentos y nutrientes a la costa

life fluvial
UNIVERSIDAD DE OVIEDO

Thus, on May 1st, 2020, Antonio Torralba Burrial, from the Institute of Natural Resources and Territorial Planning (INDUROT) (University of Oviedo), gave the lecture 'Aquatic Ecology and Human Beings', showing the integrationist role of the river corridor concept in this holistic approach to water.

Natura 2000 Network Day

On May 21st, European Natura 2000 Network Day, the InterEo Association promoted the placing of flags with the network's logo on the balconies of the fourteen town halls of the Eo River, Ocos and Terras de Burón Biosphere Reserve. This initiative was successful in all the towns and it managed to make the celebration of this day visible, in a group of municipalities that has six Natura 2000 sites.



Concello da Ribeira da Piquín



Concello de San Martín de Osoz



Concello de Taramundi



Concello da Fonsagrada



Concello de Castropol



Concello de Ribadeo



Concello de San Tirso de Abás



Concello de Trabada

For the younger children, there was a storyteller activity with the 'The Bolechas take a walk along the river' video; and, later, they were asked to draw something related to river corridors. They also joined the Natura Network Day motto: 'The flapping of a butterfly's wings is enough to change the world'.

The older children had the chance to enjoy a presentation related to invasive alien species and then take part in a challenge through Kahoot.

Finally, the students of the Ría del Eo Rural Assembled Center and Jovellanos State School decorated their windows and balconies with the Natura 2000 network logo.



In addition, that same day, the Mariñas-Betanzos Association organized a thematic painting workshop on ASPACE CORUÑA's premises, in the town hall of Sada. ASPACE is a pioneering entity in Galicia in the field of comprehensive attention to people with cerebral palsy, which works to improve their quality of life as well as that of their families.



8th congress of the Iberian Ichthyology Society

Pilar García, technical manager of LIFE Fluvial, took part in the 'European invasive alien species project networks' presenting the project and highlighting the importance of river corridors as reservoirs for biodiversity, absorption of flooding and water supply, among other services. The virtual workshop, promoted by the Invasaqua LIFE project, brought together a lot of international experts taking part in numerous projects to improve habitats and fight against invasive alien species in marine and continental water environments.

The speakers and the audience exchanged valuable experiences and opinions, which will be very important for the action to be taken in each of the current and future projects.



maridar Sada

LIFE Fluvial was present at the Maridar Sada gastronomic fair, on September 11, 12 and 13, making the project known to the public at the stand installed by the Mariñas-Betanzos Association.



Technical visits to control exotic species

In July and September, the Institute for Agrarian Biodiversity and Rural Development (IBADER) carried out two technical visits regarding the restoration of river corridors and wetlands, as



← Miño and Manden wetlands

→ Ribadeo Ria wetlands



LIFE Fluvial at the meeting of the participation organ of the Terras do Miño Biosphere Reserve

On December 17th, 2020, the LIFE Fluvial project, under the leadership of the Institute for Agrarian Biodiversity and Rural Development (IBADER), presented, in the auditorium of the Council of Lugo, the action taken in the areas that are the nucleus of the Terras do Miño Biosphere Reserve.



The event was organized by the managing organ of the Terras do Miño Biosphere Reserve – Environment Service of the Council of Lugo.

LIFE Fluvial networking

Throughout 2020, LIFE Fluvial has been present at symposiums and presentations of other LIFE projects, such as LIFE Convive and LIFE Stop Cortaderia. It has also taken part, as a speaker, through the Institute for Agrarian Biodiversity and Rural Development (IBADER), in the Conference on Good Practices to Control Cortaderia selloana, which was held on December 16th, 2020.



↑ Final CONVIVE LIFE Conference
(Telematic; 24/09/2020)
Online connection from the auditorium at the
Environmental Hydraulics Institute of the University of Cantabria



↑ 3rd meeting of the LIFE Stop Cortaderia working group
(Telematic; 28/10/2020)
Online connection from the *Escola Superior Agrária de Coimbra*, Portugal



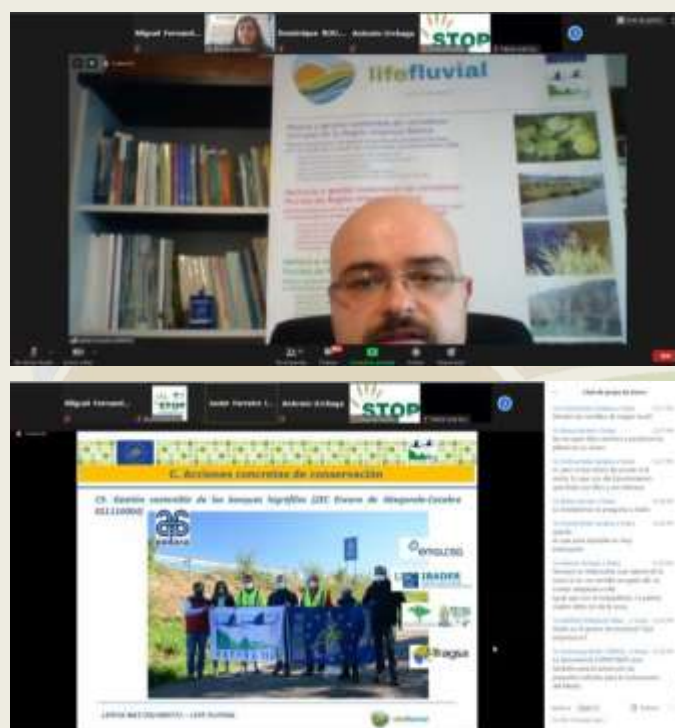
Public European presentation of the Transnational Strategy to Fight against *Cortaderia selloana* (LIFE Stop Cortaderia)
(Telematic; 27/11/2020)
Streaming



2nd LIFE Stop Cortaderia Technical Seminar
(Telematic; 15, 16/12/2020)
Removal of pampas grass at river corridors by the LIFE Fluvial project. Javier Ferreiro, Institute for Agrarian Biodiversity and Rural Development (IBADER)



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Meanwhile, the Surface Water Department of the Gießen Presidency, in the state of Hessen, Germany, showed an interest in knowing first hand the environmental restoration techniques used in the LIFE Fluvial project.

→ Visit to the Eo River corridor. July 2020.



In July, several experts from the Institute of Natural Resources and Territorial Planning (INDUROT) visited, with Lorena Royo Álvarez, environmental inspector of the said department, the Eo River corridor, which was an excellent opportunity to exchange valuable information on environmental river restoration, management of protected sites and spreading of environmental values.



On February 17th, the Institute for Agrarian Biodiversity and Rural Development (IBADER) met with the LIFE Alnus team to highlight the synergies between both projects based on the fact that they have very similar strategies to reach their environmental goals, despite the fact that each one proposes measures adapted to the Atlantic (LIFE Fluvial) and Mediterranean (LIFE Alnus) conditions of their respective territorial scopes. The visit could not have been more successful, indicating the need for further contact between both projects and to continue with the exchange of experiences, generating deeper knowledge regarding the best practices for the promotion of connectivity of the river corridors and the improvement of the state of conservation of their key components.

← Meeting of LIFE Fluvial and LIFE Alnus to exchange experiences.

Visit from the Institute for Agrarian Biodiversity and Rural Development (IBADER) to the Forest Science and Technology Center in Catalonia (CTFC). (Lleida. February 2020).



The LIFE Fluvial project seeks to provide a framework to facilitate and promote the exchange of good practices and experiences, as well as collaborative work, encouraging the replicability and transferability of its results to other projects and institutions. The removal of pampas grass (*Cortaderia selloana*) by LIFE Fluvial at the Natura 2000 sites of the Mariñas Coruñesas e Terras do Mandeo Biosphere Reserve has provided an ideal environment for the promotion of synergies and the performance of collaborative activities that contribute to improve knowledge and develop capacities with the concessionary entity of freeway AP-9, Audasa, to control this invasive alien species in the influence area of the route of the said road infrastructure.



Thus, November 18th, 2020 was established as a networking day where the partners of LIFE Fluvial (IBADER, ADR Mariñas-Betanzos, TRAGSA, EMALCSA), involved in the activities to control pampas grass carried out by the project, transferred the results obtained to the staff from Audasa in charge of the maintenance of the road structure.

They all declared themselves to be against the use of chemical control (herbicides), mostly because of their negative effects on the environment, particularly in very fragile areas, such as the Natura 2000 network river corridors, which is why LIFE Fluvial has refused to use them in the project.

20th congress of the Iberian Limnology Association



On October 26th, the LIFE Fluvial project took part in the 20th CONGRESS OF THE IBERIAN LIMNOLOGY ASSOCIATION (AIL-2020), which was held in concomitance with the 3rd LATIN AMERICAN LIMNOLOGY CONGRESS (CIL-2020). This event was held by telematic means from October 26th to October 29th with the motto 'Limnology in a changing world'.

Mauro Sanna, an expert from the Institute of Natural Resources and Territorial Planning (INDUROT), took part in the special session '(SS11) EU Projects Workshop: exchanging experience in IAS management and awareness' with the presentation called 'LIFE Fluvial: Results after three years of alluvial forest restoration in the Eo River (NW of Iberian Peninsula)'.

LIFE Fluvial on EsAsturias TV

Jesús Valderrábano, the coordinator of the Natural Resources and Plant Conservation area of the Institute of Natural Resources and Territorial Planning (INDUROT) (University of Oviedo) and a member of the LIFE Fluvial team, took part, on October 14th, in the 'Magazine Y...' program on EsAsturias TV in the INDUROT environment section. The interview focused on the Atlantic river corridors and their importance.



‘Eopolis, a sustainable model for the future

On December 16th, 2020, the LIFE Fluvial project, represented by Pilar García and María Fernández from the Institute of Natural Resources and Territorial Planning (INDUROT) (University of Oviedo), was present at the meeting held by Elisa y Luis Villamil de Vegadeo High School, which was attended by several institutions and agents from the Oscos-Eo municipalities.

The summary of the needs established at the meeting will be considered when shaping, redirecting and/or supplementing the School's Project for this year. On the basis of the information collected last year at the corresponding meeting, the school has implemented the 'Eopolis, a sustainable model for the future' project, a theoretical framework to enable the development of various educational proposals compatible with the knowledge, development and improvement of the regional environment.



national ecology conference

The LIFE Fluvial project was represented by Paulo Monteiro and Patricia María Rodríguez González (CEF/ISA, University of Lisbon) at the *XIX Encontro Nacional de Ecologia e Celebração dos 25 anos da SPECO* (Portuguese Ecology Society), which was held online from December 9th to December 12th, 2020, through the ZOOM and Slack platforms. On 10/12/2020, Paulo Monteiro delivered a speech called '*Avaliação de ações de restauro ecológico de amieais paludosos em Portugal no âmbito do projeto LIFE Fluvial*'.



The main subjects addressed were: the LIFE Fluvial project; methodologies implemented in the assessment of the effects of the control and removal of woody invasive alien species; preliminary results after the debarking of acacia (*Acacia dealbata* and *A. melanoxylon*) trunks and the cutting of *Eucalyptus camaldulensis*.

20th Science and Technology Week, University of Oviedo

In late November, the 20th Science and Technology Week of the University of Oviedo was held virtually. The 'Science Day at my school' activity, on November 25th, addressed the LIFE Fluvial project in the specific lecture 'Replacing eucalyptuses with alder trees and oak woods to improve the Atlantic river corridors with LIFE Fluvial', adapted to its telematic development for Primary Education students of Reconquista State School (Cangas de Onís), La Coroña Rural Assembled Center (Ceceda) and Dulce Nombre de Jesús School (Oviedo).



This activity was carried out from the Institute of Natural Resources and Territorial Planning (INDUROT) (University of Oviedo) by Professor Antonio Torralba Burrial.

EDUNOVATIC 2020

The LIFE Fluvial project took part in EDUNOVATIC 2020 (5th International Virtual Congress on Education, Innovation and ICT), held on December 10th and 11th.



Antonio Torralba, from the Institute of Natural Resources and Territorial Planning (INDUROT) (University of Oviedo), delivered a speech on the design and application of a memory game as a teaching resource for ludic learning about river corridors, a game with which the LIFE Fluvial project has carried out a lot of environmental education activities throughout the years.

specialized river corridor symposium

In November 2020, three specialized conferences called 'The River Corridors in the Iberian Atlantic Region' were held telematically, organized by the INDUROT and InterEo partners, aimed at local and regional interested agents.

Their main contents were: legal framework, the corridors as a natural resource, ecosystem services, threat factors, eradicating myths and the LIFE Fluvial project.



← 1st Corridors Conference
(Telematic; 04/11/2020)



← 2nd Corridors Conference
(Telematic; 11/11/2020)



← 3rd Corridors Conference
(Telematic; 18/11/2020)



NEEMO-IDOM monitoring visit

The 3rd LIFE Fluvial Monitoring Meeting was held on September 9th-10th, 2020. Firstly, the IDOM representative, Itxaso Mora, carried out an administrative revision of the project, telematically, given the health situation, with all the project partners.

Later, they visited, in small groups, some of the action areas with the purpose of evaluating the progress of the specific conservation actions: Rábade (action C7), Guitiriz (action C6), Bergondo (action C4), Cecebre (action C5), Ribadeo (actions B1 and C1), Vegadeo (action C1) and Castropol (action C3).



coordination



coordination meeting in Lugo

The project partners held a coordination meeting on January 21st, 2020 on the premises of the Institute for Agrarian Biodiversity and Rural Development (IBADER), in Lugo. The COVID-19 pandemic made it necessary to hold all the other 2020 meetings (12/05/2020; 26/11/2020; 22/12/2020) telematically.



2nd review committee in Asturias

The 2nd Review Committee of the LIFE Fluvial project was organized in Asturias on December 2nd, 2020 by the Institute of Natural Resources and Territorial Planning (INDUROT) (University of Oviedo). The two-hour meeting was held via Microsoft Teams, because of the COVID-19 measures.



It was attended by representatives of the administrations involved in the matter of the river corridors of the Natura 2000 network (Ministry of Ecological Transition, Bay of Biscay Hydrographic Confederation, Coast Demarcation, Government of the Principality of Asturias and town councils involved in the actions of the project).

2nd review committee in Galicia

On December 3rd, 2020, the 2nd Review Committee was similarly organized and coordinated in Galicia by the partners IBADER, ADR Mariñas-Betanzos and EMALCSA. This Committee carried out a follow-up of the actions taken in the project, providing an external, more comprehensive point of view regarding its progress. All the national and regional bodies competent in the conservation of the river corridors of the Natura 2000 network were invited to the meeting, as well as all the other agents involved in the management of the river corridors (local entities, nonprofit organizations, universities and research centers, other European projects, etc.).





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newsletter nº3

december 2020



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