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LIVINGRIVER
CARING AND PROTECTING THE LIFE AND
CULTURE AROUND RIVERS AND STREAMS

NEWSLETTER #2



Photo by: Fins Eirexas

The second transnational partners meeting of the LivingRiver project took place in Santiago de Compostela, Spain, on the 15th and 16th of May 2019, organized by the partner ADEGA.

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Meet the spanish partners

IES Ribeira de Louro

The IES Ribeira Do Louro (IESRdL) is a secondary education school which provides general education, vocational training and adult education courses. It is placed in Porriño (Pontevedra) in the southwest of Spain, next to Vigo. IESRdL has approximately 700 students and 80 teachers and provide, amongst other specialist courses, Advanced Level Training courses in International Trade, Administrative and Financial Management and Telecommunication Systems and Information Technology.



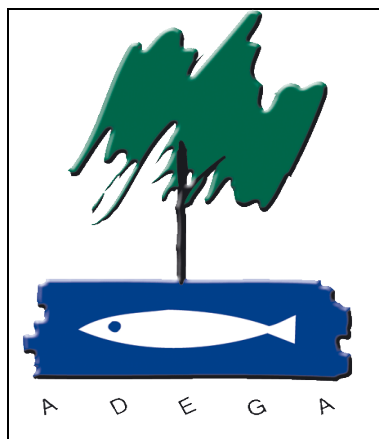
XUNTA DE GALICIA
CONSELLERÍA DE CULTURA, EDUCACIÓN
E ORDENACIÓN UNIVERSITARIA

IES Ribeira do Louro

The school has a wide experience in implementing European research and mobility projects. IES RdL has participated, both as promoter/coordinator and partner, in different projects under Lifelong

Learning Programme, Leonardo da Vinci and Socrates Programme, Interreg and other national projects. Furthermore, IES RdL has been participating in mobility projects since 1996, as host and sending organisation. It has carried out more than 400 students and teachers placements under Lifelong Learning Programme and Regional Government mobility projects. IES RdL has also participated in an Interreg III in 2001/2004 – PPIER.

Asociación para a Defensa Ecolóxica de Galiza (ADEGA)



ADEGA is an environmental association for the defence of Galicia, it is an independent democratic non-profit organization.

It does everything possible to defend the Galician and global environment. It is Spain's most active association, with over 25 years of experience.

It centres its activities in Galicia, without losing sight of the global environmental problems. ADEGA understands that biodiversity is reflected in cultural diversity, and that both should be preserved.

ADEGA is a part of "Federación Ecologista Gallega" (Galician Ecological Federation) and of the "European environmental Office".

The first action for ADEGA's founding constitution took place in 1974, but it was not legalized until June 1976.

Goals: Defence and awareness

Mission: Ecological defence of Galicia.

Field of work: Environmental revindication and education.

Type of activities: Volunteer, Environmental education, Social awareness campaigns, Divulcation, Education activities and Dissemination as a tool



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SCIENTIFIC METHODOLOGIES

Small streams constitute the majority of the fluvial net (~85% of the river networks). In forested areas these watercourses are frequently lined by trees that, with their canopies, shadow the water (Fig. 1).



Fig. 1. Candal stream. Serra da Lousã, Portugal.
Photo credit: Ricardo Oliveira

With very little light available, the aquatic life needs to rely on leaves from the surrounding trees as source of nutrients and energy (Fig. 2). The degradation of these leaves and incorporation in the stream food webs (Fig. 3) is crucial for the services provided by watercourses to man, including water quality.



Fig. 2. Leaf packs accumulated in the stream bed.
Photo credit: Ana Lúcia Gonçalves

In the presence of perturbations (frequently promoted by man) that affect the physicochemical characteristics of the

water and/or the organisms responsible for the decomposition of these leaves, the streams' ecological health is degraded.



Fig. 3. Aquatic invertebrates eating an oak leaf.
Photo credit: Edivan Almeida Junior

Based on previous scientific work, the CFE-Freshwater Ecology Lab (University of Coimbra, Portugal) created a cartoon (Fig. 4) that illustrates the leaf litter bag protocol: this approach is used, for a long time, by scientists all over the world to understand streams functioning and their ecological integrity. Understanding leaf litter decomposition will allow students of secondary schools, and the general community, to “sense” what is going on “their” stream. Detailed activities, that will require an active exercise of citizenship, will be proposed and discussed with teachers in a future course to be held, in Coimbra, next October.



Fig. 4. Cartoon cover illustrating the litter bag technique used to evaluate leaf mass loss in streams.



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Rivers, Agents of History

Rivers are “agents of History”. Places and landscape, culture, technology, literature and music have been intrinsically shaped by their presence, in a mutual relation with humans and their usage of natural resources. Rivers also act as powerful natural elements as a source of life — and destruction. Their margins and riverbeds have always been places of worship and of philosophical construction, uniting and separating humanity.



Fig. 1. Map of the river Mondego from Coimbra to Figueira da Foz (Portugal) [1790-1814]. Francisco António Ciera. Image credit: Biblioteca Nacional de Portugal (D. 275 A.)

Through historical understanding we may know better the ways by which communities relate to river and riverscapes in multiple dimensions. It is central that we learn the impacts of rivers in nowadays living — culturally, economically, socially — but also how our actions change its courses. This inquiry produces new knowledge, but it also raises awareness and makes us more conscious on the urgency and the ways by which we might act to change the course of our actions.

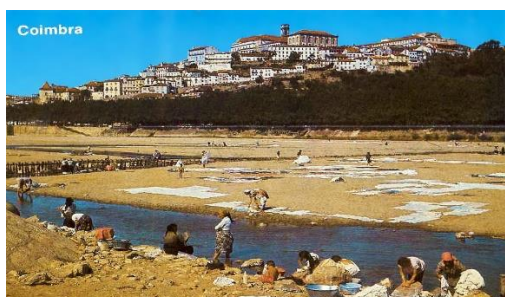


Fig. 2. Postcard depicting washerwomen by the Mondego river, in Coimbra (Portugal) [mid 20th century].

Historical Inquiry encompasses a process by which researchers use different methods when investigating an aspect of history.

The process starts with a theme or period, to which the researchers ask specific questions. In order to provide answers, one needs to find evidence in which to base the narrative, thus creating a rational and logical set of arguments.



Fig. 3. A type of boat, “barca serrana”, specific to the Mondego river, used in local festivities [mid 20th century]. Photo credit: Varela Pécurto. Arquivo Fotográfico Digital from Biblioteca Municipal de Penacova.

These means there are specific rules to look at when following a historical inquiry, based on different methods which might be more or less appropriate to your theme or period. As in all historical research one must look at the Historical sources in order to understand the past and build a narrative, after critically reading and confronting them. Those sources can comprise a variety of origins, such as letters, journals, administrative and institutional records, newspapers, photographs, paintings, postcards, maps, poems, music, oral testimonies, folklore, artifacts, among many others.

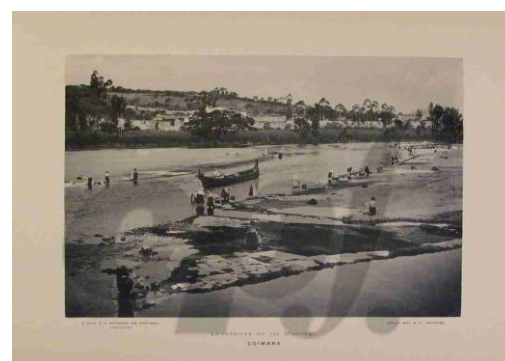


Fig. 4. Washerwomen by the Mondego river, in Coimbra (Portugal) [1900-1902]. J.C.Cunha Morais. Image credit: Torre do Tombo. Centro Português de Fotografia.



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SECOND TRANSNATIONAL PARTNERS MEETING

The second transnational partners meeting of the LivingRiver project took place in Santiago de Compostela, Spain, on the 15th and 16th of May 2019, organized by the partner ADEGA.



During the second meeting the partners were able to discuss the scientific methodologies that are being adapted to the project and prepare the Teacher Training course that will happen in October 2019. As well, the partners talked about the importance of a good dissemination clarifying what must be done in order for this to happen and to make sure the results of the project reach a wide range of people. This meeting was the place to clarify the type of involvement and participation of the schools and teachers in the project.

Also, in this meeting the participants were able to enjoy the Galician foods and the traditional folklore, as it is important to meet different cultures in order to know each other and be able to work together and do a good job.

This project, which started in September 2018, is expected to last 3 years. In October will take place the first Training Course for Teachers, being held in Coimbra and being organized by the University Nova of Lisbon and the University of Coimbra. This will be a big step for the project.





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PROJECT PRESENTATION AT NATIONAL & INTERNATIONAL EVENTS

V International Congress of Environmental Education of the Portuguese Speaking Countries and Communities

The LivingRiver Project was presented at the 5th International Congress on Environmental Education of the Portuguese-speaking Countries and Communities and Galicia, on April 15, 2019, in Bijagós - Guiné-Bissau. Were present educators, teachers, members of NGO's and member from Government.



ObservaRia



The LivingRiver project was presented in ASPEA's stand, on the second edition of the ObservaRia Festival, in Estarreja, Aveiro. During the three days of the Festival were present students and teachers, families, members of local autarchies and members of NGO's.

"Bicycle and Scooter in a Clean Environment" II Edition

On the 7th of June Brasov Metropolitan Agency has organized a contest for primary school pupils with the theme "Bicycle and Scooter in a Clean Environment". With this activity, the students learned about the LivingRiver project: the purpose, the objectives and the activities, in order to make them aware of the importance of the planet's freshwater resources.





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Observa Estrela

Between the 28th and 30th of June ASPEA was present in the ObservaEstrela Festival.

The LivingRiver project was present in ASPEA's exhibition stand.



The XV meeting of Environmental Volunteers

On the 6th of July took place the XV meeting of Proxecto Ríos Volunteers in Lobios, Ourense, a small town near one of the most important Natural Place in Galicia.

The purpose of this meeting was to give voice to the volunteers of the different associations which participate in the River Project.

With this occasion we made a "Bioblitz". Bioblitz is a route around the river, where we did not only walk, we were discovering the fauna and flora of this river.

After the picnic, the CITRAN Association showed us how with using animals (horses and donkeys), we can clean our woods of exotic species in a more ecological way than using tractors.





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NEWS

Workshops “Glimpse of a Stream”



On May 22 (2019), the Freshwater Ecology Lab (*FreE*) - Centre for Functional Ecology of the University of Coimbra was invited by the Municipal Library of Figueira da Foz to collaborate in the Program "Bandeira Azul 2019". The *FreE* lab developed workshops under the



theme “Glimpse of a Stream” with groups of high school students, at the Secondary School Cristina Torres, Figueira da Foz, Portugal.

Getting in touch with the stream hidden lives, understanding their relationships, and their importance in the maintenance of a good water quality was our main goal. The activities were included in the scope of the international project "LivingRiver - Caring and protecting the life and culture around rivers and streams" and the Regional Portuguese Project "ReNATURE - Valorisation of the natural endogenous resources of the Center Region (CENTRO-01-

0145-FEDER-000007)”



“Let’s build a stream”

On May 24 (2019) the Freshwater Ecology Lab - Centre for Functional Ecology of the University of Coimbra was enrolled in diversified freshwater activities, with students of elementary schools, at Rómulo - Center of Life Science of the University of Coimbra, Portugal. The construction of a prototype of a functional stream was our goal.

The activity “Let’s build a stream” was developed in the scope of the international project "LivingRiver - Caring and protecting the life and culture around rivers and streams" and the Regional Portuguese Project "ReNATURE - Valorisation of the natural endogenous resources of the Center Region (CENTRO-01-0145-FEDER-000007)”.





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Spring campaign

At the end of May 2019, The Olt Basin Water Administration carried out a flood-lit waste collection operation. Waste was brought about by torrential rains that took place in the previous period.

The action took place in Comăna village, Braşov County, on the Olt Hydrological Basin.



Spring Campaign of Proxecto Ríos



On the 15th of June the Rivers Project Spring Campaign has ended. In this Campaign, approximately 30 entities participated.

It is very important because these entities give us information about the Galician Rivers, letting us know the quality and the health of our rivers.

For more information you can check our website: <http://proxectorios.org/>

10 years of Proxecto Ríos short video



https://www.youtube.com/watch?v=7WuJn_JnFmg



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“What makes a river dirty?”

Between 17-21 of June 2019 there was an inservice teacher training program in Balıkesir University.

Dr. Burcu Güngör and 50 biology teachers design and apply an activity about water ecosystem.

They begun to think about how their daily activities affect their water footprint.



“D. Duarte Highschool (Coimbra) will integrate the Associated Schools network of the LivingRiver project”

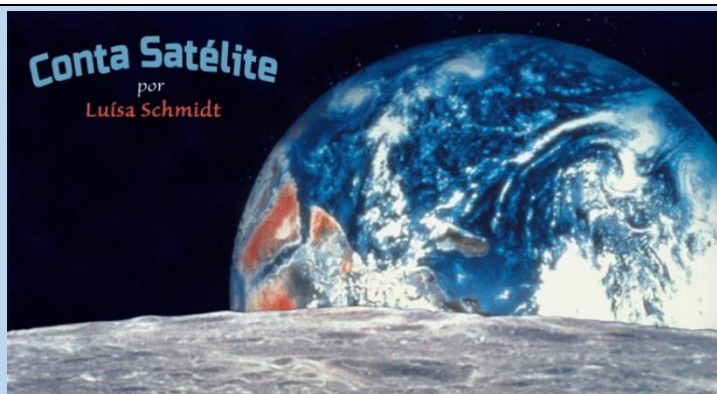
ASPEA's team met with teachers with one of the Associated Schools of the project, D. Duarte High School, in Coimbra, to present the project and to talk about the work that will be made with the students. Also, the work to identify the stream to adopt by the school was started, visiting some streams nearby the school.



“Projeto Rios was presented in the radio program “Conta Satélite”, by Luísa Schmidt”

On the 8th of May, the portuguese radio program “Conta Satélite” by Luísa Schmidt, was about Projeto Rios.

It was made a brief presentation of this project, highlighting the importance of the conservation of rivers and the fundamental role of citizens.





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Workshop on Oral history strategies

In the past April 16th a team of researchers (Maria Fernanda Rollo, Filipe Silva, Luísa Seixas and Inês Castaño) from the Memory for All programme (NOVA-FCSH) working on the Living River project have guided a workshop on Oral history strategies and public engagement taking as example some of the processes and procedures being developed within the Living River project. The workshop integrated the V international congress on environmental education, which took place in Bubaque, Guiné-Bissau.

The workshop focused on the experiences of some projects dealing with local and community memory as an important source of knowledge towards landscape and biodiversity.

The workshop was attended by a group of about 10 participants from different professional areas and interests, who have actively questioned and debated some of the issues addressed, regarding their own experiences and possible areas of intervention.

Louro River Hike



On Friday the 29th March 2019 third-year ESO students from our secondary school, accompanied by the Biology and Geology Departments, went on an excursion by the Louro River, in order to get to know more about its riverside, which gives its name to our school. The outing consisted of a walk by the riverside identifying the Louro River's flora and fauna, both indigenous and nonnative. The excursion lasted the whole of the school day.

Starting at the pilgrim hostel in Porriño we went on an almost circular route which ended near the Lourambal football field. The itinerary took us along the right and left banks of the river before moving away from it.

Mankind has intervened on many occasions in this river. It rises in Pazos de Borbén, where man-made structures, from bridges to different kinds of flood defenses, can easily be found. One can see many ruined stone buildings as well as modern structures. Along the walk there are benches where one can rest and wooden bridges that help getting from one side to the other with ease. We can also find signs that give us information on the various native species common throughout the riverside and some nearby parks.

Apart from that we became familiar with the flora and fauna, for instance the nonindigenous eucalyptus or the carrizo (*Arundo donax*) and indigenous trees together with some of their uses, such as the use of elderberry pith as a glass cleaner. Furthermore we became familiar with the fauna, such as the ducks in the river and some bird species that make their home on the trees of the riverside. We also had the opportunity to see many of the things we were taught at school, such as the bends of the river.

It was a very interesting and relaxing excursion that showed us this river's beauty with such lush vegetation from which we can learn so much.





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The first Simultaneous River Cleaning was in 2008.

The main objective of this activity is to show to the community when, how, and most of all, what kind of cleaning we have to apply to our rivers. Four years ago the Proxecto Ríos (Rivers project) was born at the hand of ADEGA, with the objective of disseminating the values of the fluvial river ecosystems, contribution to “public awareness” and the study of conservation.

Through various tools for social participation (education and volunteer, land custody, etc.), the intention is to increase public awareness and create conservation initiatives for streams in Galicia. Since 2008, the Proxecto Ríos always carried out a Simultaneous cleaning, which is normally done every year at the end of September.

Proxecto Ríos (River Project)

In 2004 Proxecto Ríos was born as a collateral result of the popular legislative initiative which collected 40,000 signatures and it was unanimously approved in the Galician Parliament. The Popular Legislative Initiative has the intention of stopping the construction of new mini power stations in Galiza's 1,000 rivers. The Popular Legislative Initiative focuses precisely on the creation of an environmental education program for the fluvial river ecosystem, which times before was only useful for wastewater dumping and dam building. A New Water Culture is finally being promoted.



The kind of cleanings they we want and the kind of cleanings that we do not want.

One of the actions that we do not complain about in the first instances was to carry out a river cleaning with the intention of eluding the most typical and topical that can be expected from the ecologist movement. However, despite the adversity, the groups began to send and began to receive a lot of information about the river cleanings that were to be carried out. There are rivers cleanings that had been less ecological, cleanings where the tools were power saws or weed eaters. With that kind of cleaning we had very bad results, the river's wood die and the river ecosystem also dies. Cleanings in breeding season.

The concept of “River cleaning” was wrong, the population thinks that “River cleaning” means to leave the river like a golf course, and it is a big mistake because “River cleaning” means another thing.

When ADEGA saw the problem, when it decided to change the main idea and suggest the “Simultaneous River Cleaning”, a guide to the idea about, “What is it a river?” and also “what is the correct form to do an ecological river cleaning”. In conclusion, once again, build a new water culture.

The main objective of the River Cleanings is that the population starts to report the pollution or the damage to the rivers which is the principal problem and of high importance in Galicia. The most important thing in the Simultaneous Rivers cleaning day is the work of social awareness. Helping to conserve and maintain the fluvial ecosystems, making the population see that a little action goes a long way. The objective of the activities is not to take many tones of rubbish away, the objective is to show to the population the way of how and should a correct river cleaning be done.



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The first Simultaneous River Cleaning

This was organized in 2008. ADEGA wanted to show the different steps: when, how, why, etc., to do an ecological River cleaning.



ADEGA edited a handbook “River Cleaning” which was sent to every single group that participates in the annual “Simultaneous River Cleaning” or other cleanings that other groups wants to do (associations, city councils, fishermen, etc.)

In the handbook we explain the importance of the period when we are going to do the cleaning. The river is a complicated ecosystem where there are a lot of

different species of fauna and flora, from minuscule invertebrates and fish to mammals like the otter. It is important to try not to disturb as little as possible, the inhabitants of the river. The spring and the summer starts the breeding season for the majority of the fauna, so it is more recommendable to do the cleaning between August and October, when the rivers carry less water and it is easier to do the cleaning with the volunteers, avoiding possible problems.

One of the consequences of a bad cleaning is to turn the river in to a rubbish dump. Sometimes there is cleaning where the rubbish is taken from the rivers but left on the edge of the river when the job is finished. If the rubbish is not picked up, it will end making a hot spot for rubbish, if the people see rubbish at one point, they will through more in the same point and in the end this concrete point will be a very big “Hot spot”. For this reason and others, we show in the handbook the different steps that must be paid attention to.

Undergrowth in the rivers?

Cleaning a River is taking out all the rubbish or the objects that they are not originally from the river. When we talk about cleanings we do not refer to the undergrowth or the vegetation. The Galician rivers are diverse ecosystems and the vegetation that is there has a function and importance. The plants on the edges and in the interior of the rivers, the leaves and the dead wood are the energy base of our rivers. Conserving this “vegetal coerture” is fundamental for the river dynamic and for the keep of the animals who forms part of the trophic chain in the rivers, also for giving shade and preventing the overheating of the water. A dry tree on the edge of the river is not a waste: it can be the site where a woodpecker rests a short time, the side where the bats sleeps... If the tree is affected by the other lands flooding and other things, we have to consult and ask for permission to pick up the tree. However, if it does not cause any problem, we should think that is another element for the fluvial ecosystem. Cleaning does not mean leaving the river side like a golf course. In the middle of the vegetation many birds nest and there live multiple species, one of the most important is the *Lacerta schreiberi*. The home of this specie is the brambles, this thing we call undergrowth. Before to cutting the brambles, you have to think in the lizard and other species: making a little path can be enough.



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Ten years (+1) of river cleanings

In this eleven years of river cleanings, numerous groups (associations, city councils, etc.) have participated. With the help, promotion and permissions of the basin organizations: Augas de Galicia and Cofederación hidrográfica Miño-Sil. In total, and base on our register made year by year, in 2018, 5946 persons participated and collected more than 106 tons of litter in our rivers.

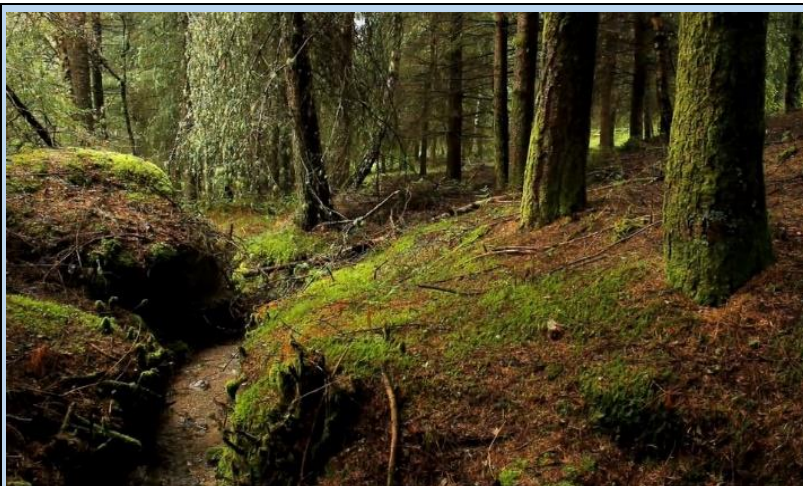
Every year, the same association participates at the same councils; we can talk about a consolidated annual activity for different councils and associations.

In total, if we count the different years, at least one river cleaning in 77 councils has been done once per year. It is the quarter part of the councils in Galicia; 105 entities participated in more than 100 rivers. We have to emphasize that the rivers are not without problems (new problems threaten), currently in rivers courses where the cleaning has been done for years the litter does not appear again. Much litter which is picking up is old litter; in many cases is an archeological reflection of other times. These kinds of jobs or activities were very important these days; we are improving the environmental awareness of the public at large.

On 30th of September hundreds of people went to cleaning the Galician rivers and picked up the different rubbish that they found. This is an activity for show the people how important it is to maintain our rivers in perfect state.

RESOURCES

Short-film “RIO MONDEGO”



This video is a good inspiration for the work that will be developed by the students of the project, in the short film contest that will be held in the 2019/2020 school year.

“This film had the following awards: Prize Seeds of Science Special 2012 in the Science Gala, 1st prize category Nature and Wildlife at Arrábida Film Festival, 1st prize category

Lusófonia-Panorama Regional at Cine'Eco, 3st prize category Documentary at Festival de Curtas Metragens de Faro, Finalist at Madeira Film Festival Transmitted by SIC, Portugal with 31% of share, Exhibition in the Summit RIO+20, United Nations Conference of Sustainable Development, Rio de Janeiro 2012, representing the portuguese biodiversity.

Final Project of my Masters's Degree in Wildlife Documentary Production from the University of Salford. Film marked with a distinction. Filmed in Portugal during May/June 2011. A voyage by the Mondego river's wildlife from the mountains to the sea.

<https://vimeo.com/31170389>



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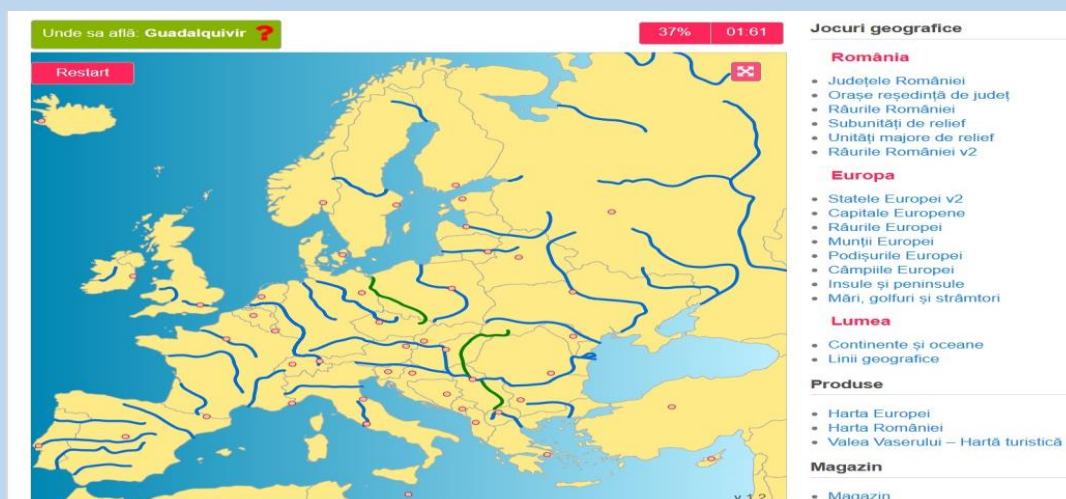


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Interactive game

Test your knowledge about Europe's rivers in this online game.

https://www.geogra.ro/joc/europa_rauri/index.php



Water is life, let's protect it!

Clean water is essential for our health and the environment. The way we use it, pollution and climate change are affecting this precious resource. A short video made by the European Environment Agency.

https://www.youtube.com/watch?v=7S74zx_ebvw

European Environment Agency



Facts about global water usage and supply



<https://www.youtube.com/watch?v=fqPGCphSi0s>