



University of  
Massachusetts  
Amherst

## **Session A3: Cipriber Project: Actions for the Protection and Conservation of Iberian Cyprinids of Community Interest**

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# LIFE13 NAT / ES / 000772 : “ACTIONS FOR THE PROTECTION AND CONSERVATION OF IBERIAN CYPRINIDS OF COMMUNITY INTEREST”



## ◀ FISH PASSAGE 2015 ▶

International conference on river connectivity best practices and innovations

June 22-24, 2015 | Groningen (The Netherlands)

**Why a LIFE project:** recent studies have shown a decline in populations of some cyprinid fish species of the Duero and Tajo river basin, as well as increase of the spread of exotic species.

In Castilla y León there are a total of 22 species, half of the autochthonous fish species present in Spain. 14 of them are Iberian endemism, and two are specific endemism of the area of the project.



**General objective:** protect and recover the populations of these endemic species of cyprinids according to the Annex II of the Habitat Directive

Total project budget: **2.429.049, 00 €**

EU LIFE financial contribution 50 %

Start date: 02/06/2014

End date: 31/08/2018

### **Coordinating beneficiary**

Confederación Hidrográfica del Duero

### **Beneficiaries associated**

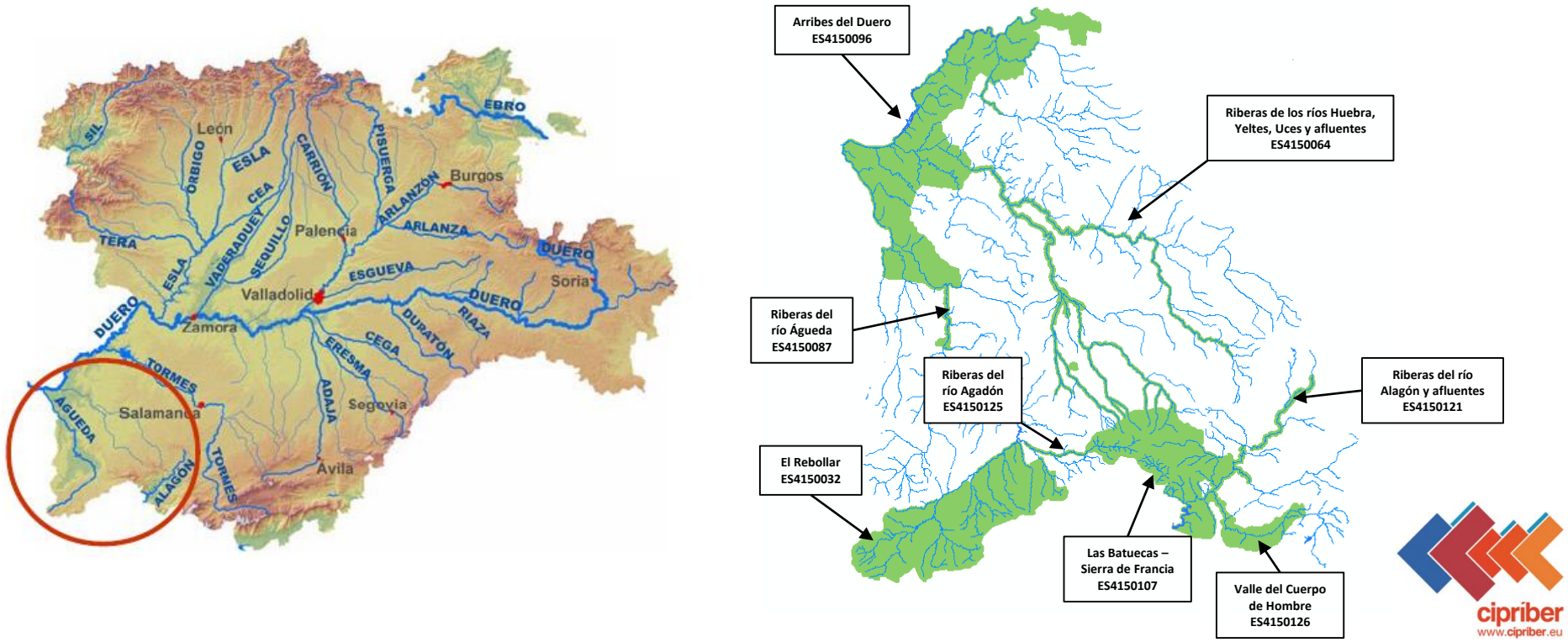
Junta de Castilla y León

Fundación Patrimonio Natural

Confederación Hidrográfica del Tajo

# Territory

The LIFE+ project is located in the southwest of the province of Salamanca due to the composition, abundance and degree of protection of the endemic fish communities present in this area, some of them can only be found in this area and are considered endangered, and also, because of the number of SICs associated to the rivers of this area.



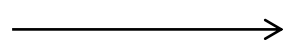
# Species

The Habitat Directive protect 10 endemic species of Castilla y León, 7 present in the rivers of the LIFE project

Habitat Directive names

Actual denomination

Rutilus arcasii



Achondrostoma arcasii



Rutilus lemmingii

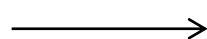


Achondrostoma salmantinum

Iberochondrostoma lemmingii



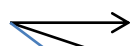
Rutilus alburnoides



Squalius alburnoides



Chondrostoma polylepis



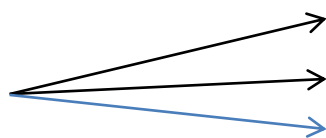
Pseudochondrostoma duriense

Pseudochondrostoma polylepis

Parachondrostoma toxostoma



Cobitis taenia



Cobitis paludica

Cobitis vettonica

Cobitis calderoni



## ACTIONS

- ✓ **Initial situation diagnosis:** starting point for the comparison of fish population evolution and habitat status.
- ✓ **Performance Framework Document in Rivers:** assessment of the initial situation regarding the ecological status and the river connectivity
- ✓ **Fish Farming Action Plan:** develop an innovative captive breeding protocol based in natural conditions

**Making a native fish resource stock in Galisancho:** captive breeding for reintroduction of the species listed in Annex II of the Habitats Directive.

**Monitoring of fish species:** assessment of the evolution of the fish community. This protocol will be as well as an early warning system for invasive species.

### Protocol for action against invasive species

**Habitat restoration:** improvement of river connectivity by demolition of barriers and construction of fish passages, and restoration of degraded river areas.

**Water Management Plan and Fish Management Plan:** establish a framework for actions in order to guarantee conservation goals and future sustainability of the project.

## Fish population studies

Assessment of the initial state of each species in the different SICs of the rivers Agueda, Huebra-Yeltes, Uces and Alagón.



Assessment of the fish population evolution according to the historical data (comparison with data from the last 25 years)

Further detailed studies of some species in some river sections, where more information is needed.

Local studies where habitat remediation measures take place (both restoration and connectivity measures), and where reintroduction of species from the farm fishing are release.





1987-91



2014

*Achondrostoma salmantinum*



1987-91



2014

*Squalius alburnoides*



1987-91



2014

*Squalius carolitertii*

## Initial situation diagnosis

### **Achondrostoma arcasii**

The Iberian population shows a well structured genetic population with 5 groups of conservation, one of them within the LIFE project area. Although its state of conservation in the area of LIFE is “stable” it should be considered a **threatened population** due to isolation



### **Achondrostoma salmantinum**

This species only lives in this area, it is therefore an endemism of Salamanca province. Its state of conservation is clearly in **regression**, mainly in the river Agueda and tributaries and low part of river Huebra-Yeltes.



### **Squalius alburnoides**

There are just a few populations in the Duero river basin which should be conserve because their genetic characteristics and reproductive mechanism of this Iberian endemism. Its state of conservation is clearly in **regression**, mainly in the river Agueda because the presence of exotic depredators like pike.



## **Pseudochodrostoma duriense**

We have observed local extinction events in the central part of the Duero river basin because the presence of exotic depredators. Furthermore, river barriers stops the migration movements and disrupt the natural flows. Its state of conservation is clearly in **regression**, mainly in the river Agueda because the presence of exotic depredators like pike.



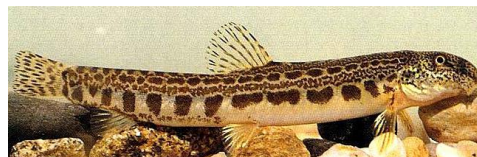
## **Pseudochondrostoma polylepis**

It is an endemism of Tajo the river basin. The basin of the river Alagón is the only place in Castilla y León where well structured population of this fish can be found. The state of conservation is **stable**.



## **Cobitis paludica /Cobitis vettonica**

There are just a few populations of these Iberian endemism in the Duero river basin. *Cobitis vettonica* is an endemism only of the rives of this area. The state of conservation of the *Cobitis paludica* is **stable**, however the *Cobitis vettonica* is clearly in **regression**



## Alien species

*Gambusia holbrooki*: in all rivers



*Alburnus alburnus*: first references in 2014 in the basins of rivers Huebra and Alagón



*Micropterus salmoides*: first references in 2014 in the basins of rivers Huebra and low part of river Agueda



*Lepomis gibbosus*: first references in 2009 in the low part of river Agueda



*Esox lucius*: first references in 2014 in the low part of river Agueda



# Assessment of the river connectivity

To assess river connectivity the following index have been used:

*Overcoming index*

*Partitioning index*

*Longitudinal integrity index*

(Gonzalez et al, 2011)

### Masa de Agua 535

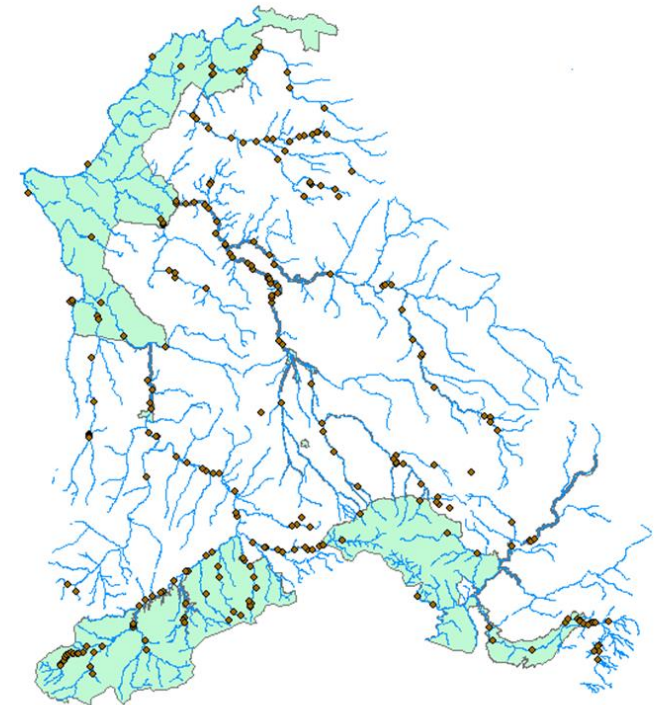
Nombre Río Huebra desde aguas abajo de San Muñoz hasta confluencia con el río Yeltes, y arroyos de la Saucera y de Caña

Ecotipo 3 Ríos de las penillanuras silíceas de la meseta norte

Codigo Lic ES 4150064 Riberas de los ríos Huebra, Yeltes, Uces y afluentes

Reserva fluvial

Longitud 62165 m N° de segmentos 13 IC 10,30



260 barriers (162 in SICs)

### Presas y Azudes

Codigo	Cauce	Huso	X	Y	Altura	Longitud	IF
1086	HUEBRA	30	220389	4532635	3,1	120	95
1087	HUEBRA	30	232421	4528738	8	110	100
1088	HUEBRA	30	230542	4530979	2,1	150	80
1089	HUEBRA	30	228272	4530736	1,2	100	0
1097	HUEBRA	30	234069	4521870	1,5	12	45
1118	HUEBRA	30	207729	4538001	7	50	100
1121	HUEBRA	30	211145	4534281	3,5	90	90
1122	HUEBRA	30	210267	4535937	3,2	30	80
4520	HUEBRA	30	201711	4541499	1,3	40	50

### Extracciones de agua

N° segmento	Extracciones de agua	Extracciones sin concesión
501249		10049749 10044318
501254	10049836 10043792 10055628	10043779 10043768 10043871
501257	10043816	10044343 1004433
501282	3825 10043827 10043805 10043807 1004	28 10043822 10044171 10044168 100
501271	10087791	10043789
501288	10044337 10044336 1004434	

## Field sheets: assessment of each barrier

Clave 1121 Cuenca **DUERO** Subcuenca **HUEBRA** Cauce **HUEBRA**  
 Nombre del azud **MOLINO DE HUEBRA** UTM **ETRS89 30 211145 4534281**  
 Municipio **POZOS DE HINOJO** Masa de agua **535**  
 LIC **ES4150064 RIBERAS DE LOS RIOS HUEBRA, YELTES, UCES Y AFLUE**  
 Reserva fluvial

### DESCRIPCIÓN DEL AZUD

Tipo de presa **AZUD** Temporalidad **PERMANENTE** Altura 3, m Longitu **90 m**  
 Tipología constructiva **AZUD VERTEDERO**  
 Conservación **BUENO** Funcionamiento **ABANDONADO**

#### MATERIALES

Material 1: **MAMPOSTERIA**  
 Material 2:  
 Material 3:

#### USOS

Uso 1: **USOS INDUSTRIALES**  
 Uso 2:  
 Uso 3:



### FRANQUEABILIDAD

I F **90**

Longitud aguas libres arriba azud **13,7 km**  
 Longitud aguas libres abajo azud **2,32 km**

¿Curso con estiaje severo **SI**  
 ¿El azud provoca sequía? **NO**

### CANAL Y DESAGÜES

#### CANAL

Canal de derivación **NO** Rejilla  
 Margen Peces en el canal

#### ELEMENTOS DE DESAGÜE

**TOMA DE AGUA**

### ESCALA PARA PECES

Escala **NO**

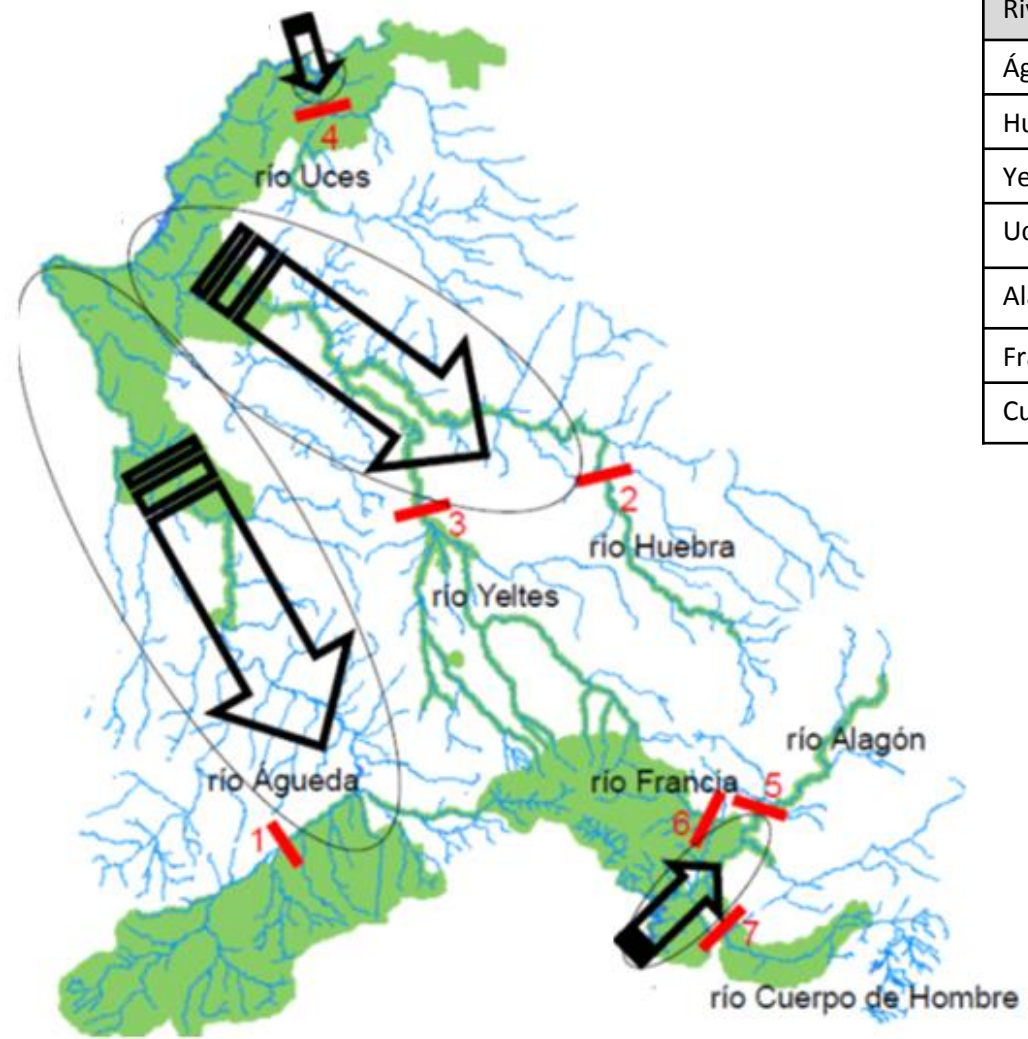
Tipo

Operatividad Ubicación  
 Causa

### OBSERVACIONES

**ANTIGUO MOLINO**

## Habitat Restoration Measures



River	Name	
Águeda	Embalse de Irueña	1
Huebra	Jumillano	2
Yeltes	Balneario de Retortillo	3
Uces	Pozo de los Humos	4
Alagón	El Pipero	5
Francia	La Regajera	6
Cuerpo de Hombre	Central de Valdelageve	7



Selected barriers to avoid the spread of invasive species upstream, where target species populations are still in good conditions

# Fish Farming Action Plan

develop an innovative captive breeding protocol based in natural conditions

- Learn from other experiences

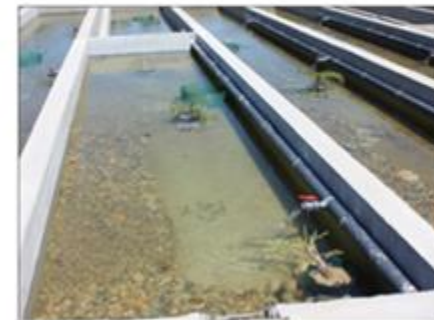


**-Campelo (ISPA - Lisboa)**  
 (24-09-2014)  
**-Vegas del Guadiana (J. Extr.)**  
 (20-11-2014)



*Making a fish resource stock*

- Adaptation of Galisancho facilities



*Natural approach*



Thanks for your attention

[www.cipriber.eu](http://www.cipriber.eu)