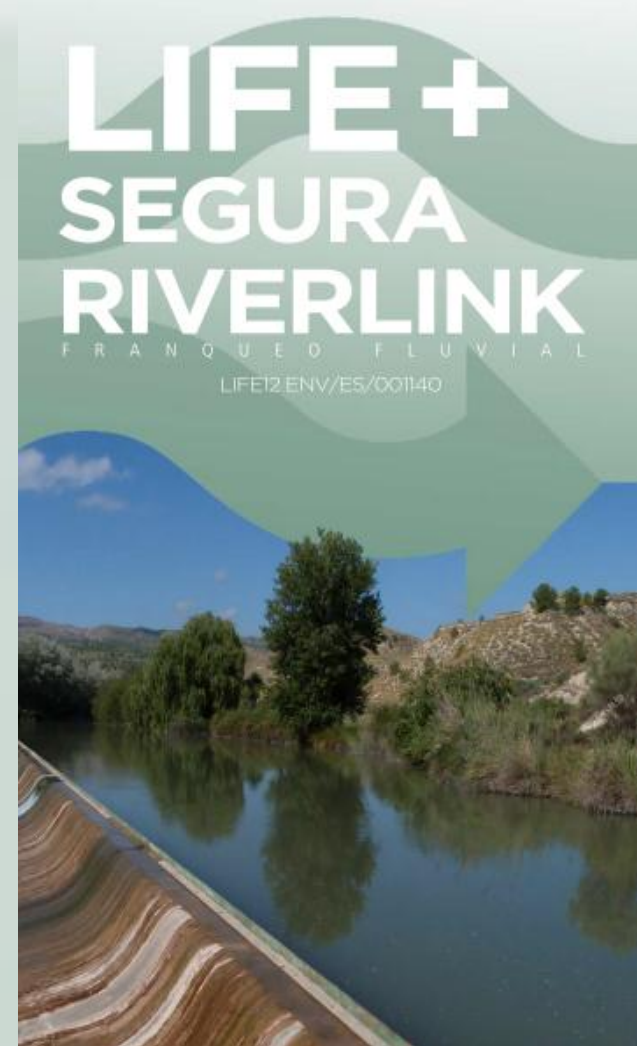




LIFE + Environment Policy & Governance



Demonstration project that aims to promote and support the environmental recovery of the Segura River basin.

Aims

To demonstrate and validate management measures for the development of a **Green Infrastructure** approach into the context of a Mediterranean river basin characterized by a high impact in its fluvial connectivity.

Period September 2013 – July 2017

Total project budget 3,424,250 € (49.8% EU)

Action area

Due to the historical pressures the Segura River is one of the most regulated rivers in Europe (more than 90 inventoried obstacles).

Main actions

■ Increase river connectivity

Removal of an unuseful weir.

Construction of 8 fish passages (Bypass fishway, rock-ramp fishway and vertical-slot fishway have been selected according to their suitability for each action site).

Restoration of riverine vegetation at weir sections.



■ Social involvement and awareness

Land custody network (=fluvial stewardship) to involve stakeholders on the river management.

Education and volunteering programmes.



■ Monitoring and socio-economic assessment

Operative indicators at fish passage systems (fish-based assessment).

Fish community and populations (fish-based assessment).

Bird community and river-bank associated fauna, vegetation communities, water and sediments.

Socio-economic assessment.

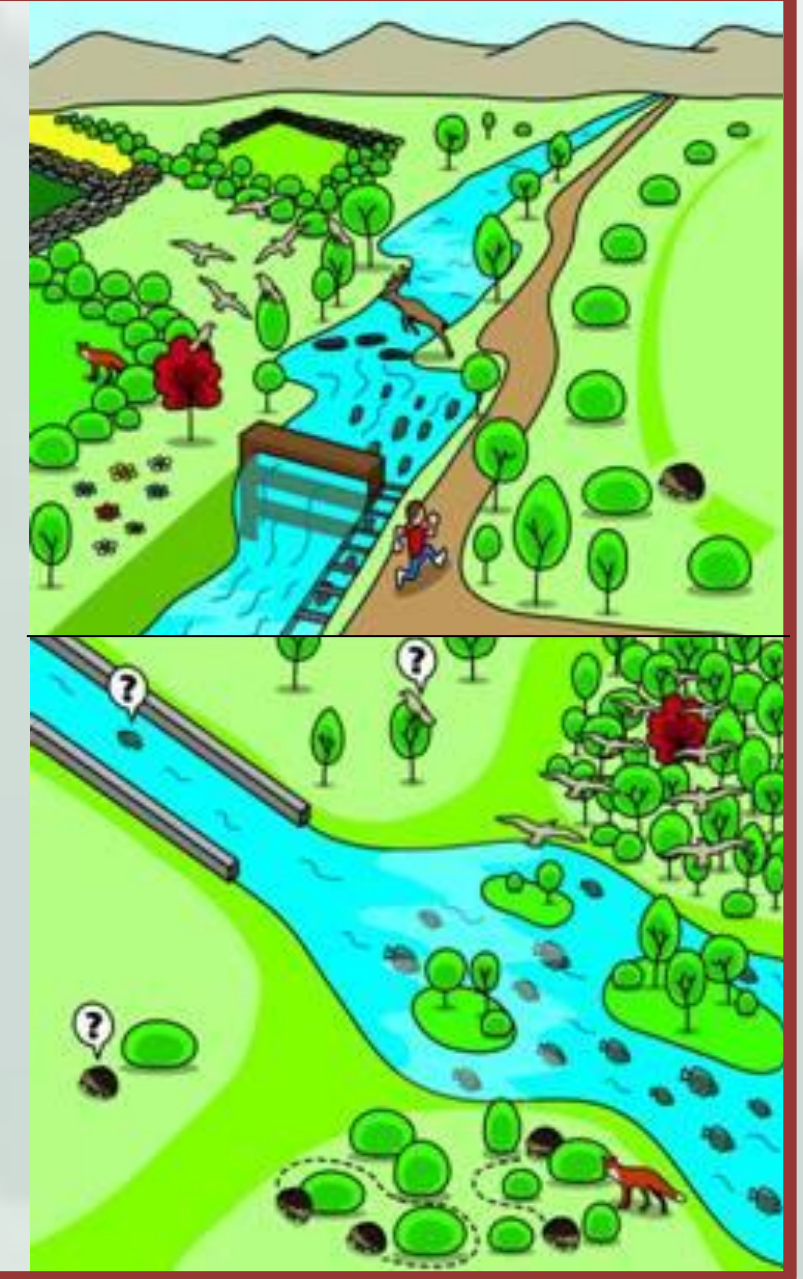


Green Infrastructure (GI): a smart solution for today's needs...

What is a GI?

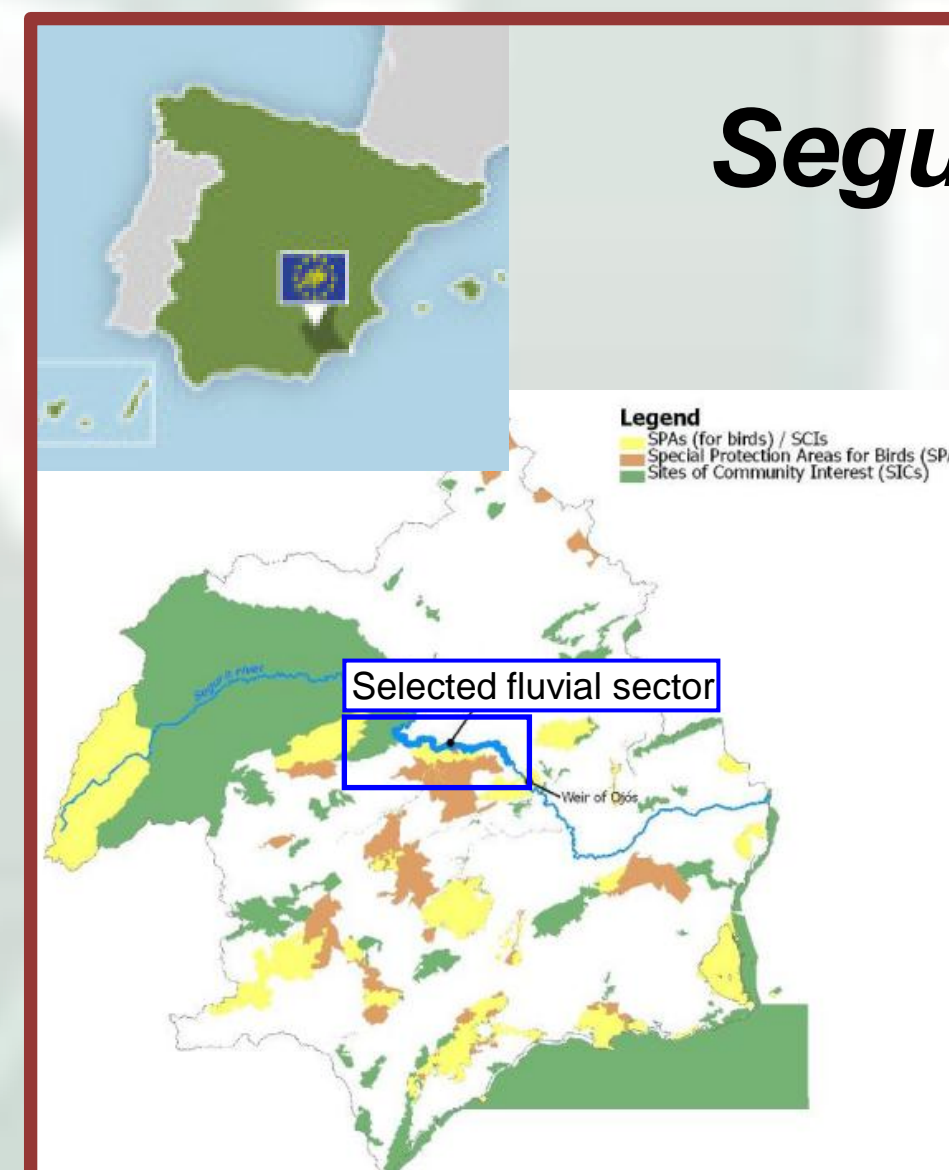
- A successfully tested tool for providing ecological, economic and social benefits through natural solutions.
- A strategically planned network of natural and non-natural areas with other environmental features designed and managed to deliver a wide range of ecosystem services.

(Green infrastructures COM(2013) 249 final)



Segura river basin

SE Iberian Peninsula
18,870 Km²



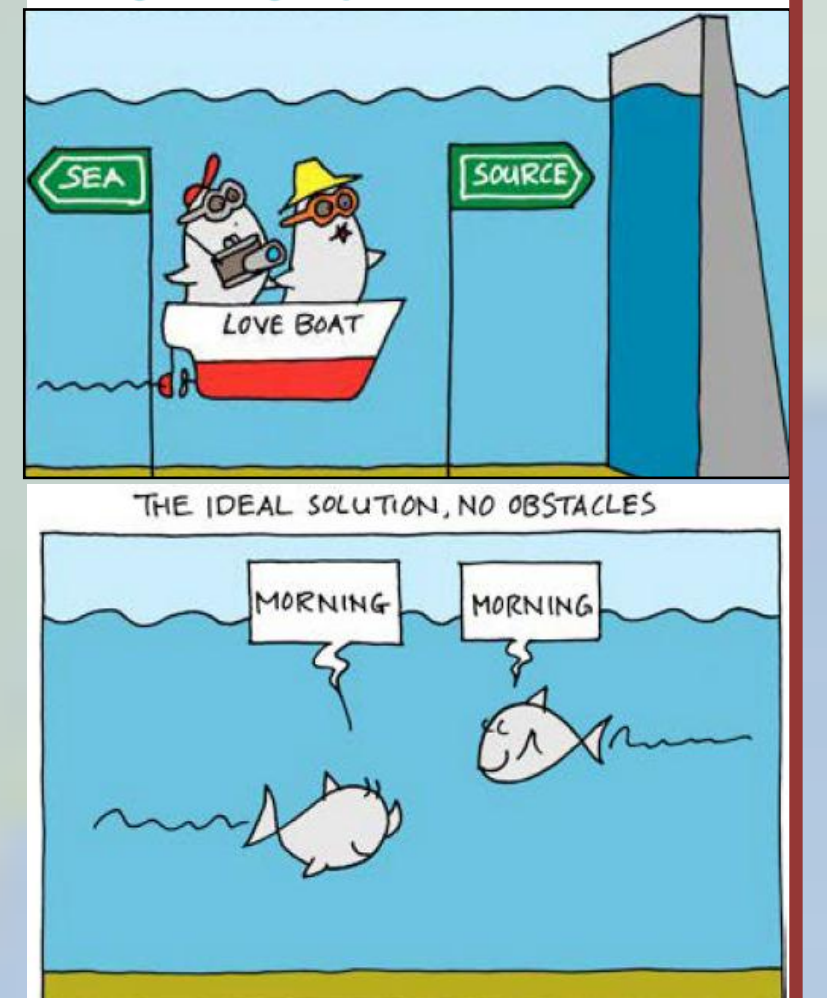
- The project will be implemented on selected sites over a 54 km.
- In the Nature 2000 Network areas or linking them.
- Including urban areas as a means of facilitating stakeholder engagement.

A long term view

- Fish home in good status in...
- The green highway of the Segura River will be free of obstacles in...
- Hydraulic infrastructures renovation.
- No future deterioration in fish migration.
- Achieve the maximum ecological potential in heavily modified waters.

River Basin Management Plan (CHS)

FROM SEA TO SOURCE



Fish-based bioassessment

Fish-community metrics	Fish-populations metrics of sentinel species
(1) Species composition	(1) Size-Age distribution
(2) Abundance, Biomass (Relative abundance index IRA), (Relative biomass index IRB), IRA/IRB, Diversity Index, (Well-being index) IWB.	Offsprings and mature specimens (occurrence).
(3) Biotic integrity	(2) Abundance, Biomass IRA, IRB sentinel species, etc.
Cyprinid Dominated Fish Assemblage Index (modified)	(3) Specimens status (% anomalies).

Level of actions

- (1) Regional – at the river sector of the project area
- (2) Local - at river stretches next to the obstacle

Sentinel-Indicator species

- Cyprinid fishes
- Mainly native to the Iberian Peninsula (except bleak)
- Target species (reproductive seasonal movements)



Current outcomes

- Initial evaluation of the fish-based assessment (October 2013 – April 2014) was completed with significant baseline data showing exotic invasive fishes as dominant and *L.sclateri* as the target species to assess changes at population levels.



- Two main monitoring programmes are being developed, (1) Segura main channel monitoring and (2) Mark-recapture only in *L.sclateri*.
- Indicator of progress – 74 sampling days from 15th September 2014 to 7th July 2015. Sampling effort was higher than the established in the initial design because electrofishings were strongly conditioned by high flows.

- 472 *L.sclateri* individuals > 25 cm length were marked by Anchor-Tag since October 2014. The aims are (1) to obtain information about fishes movements and (2) to develop an informative campaign on sport fishing anglers. 39.4% of recaptured specimens in 55 mark-recaptured days.
- The analysis of fish movement at fish passages will be initiated in 2016.

