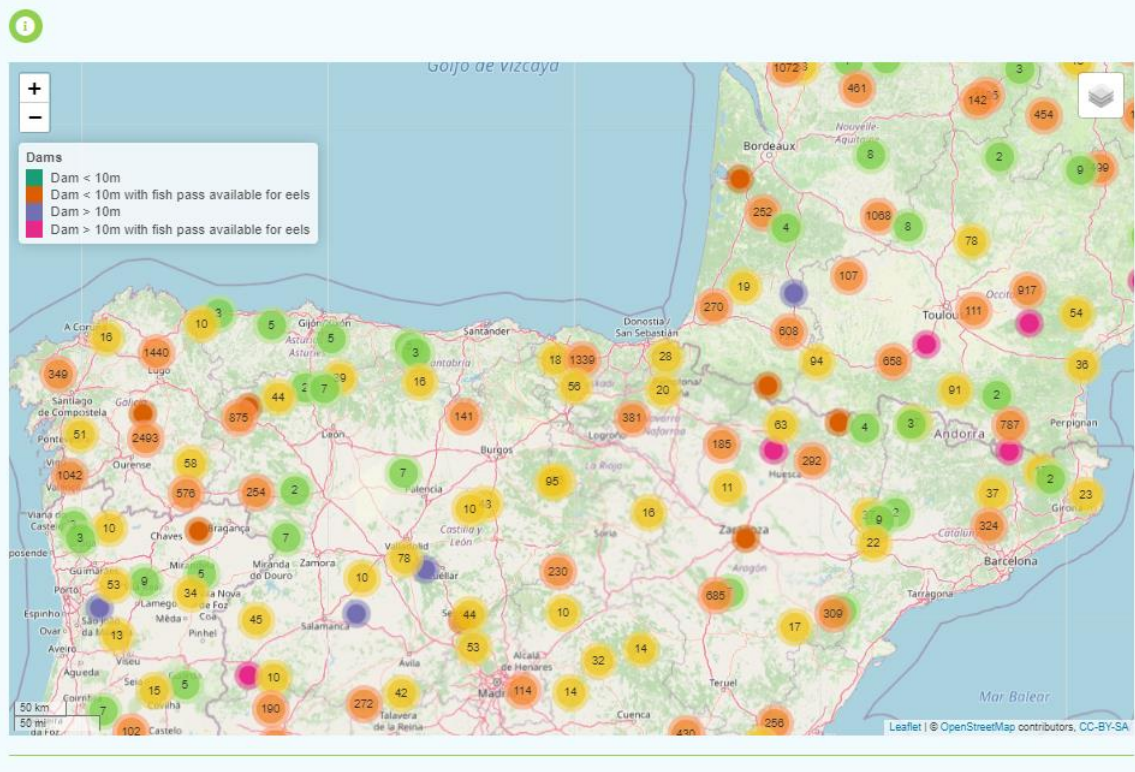


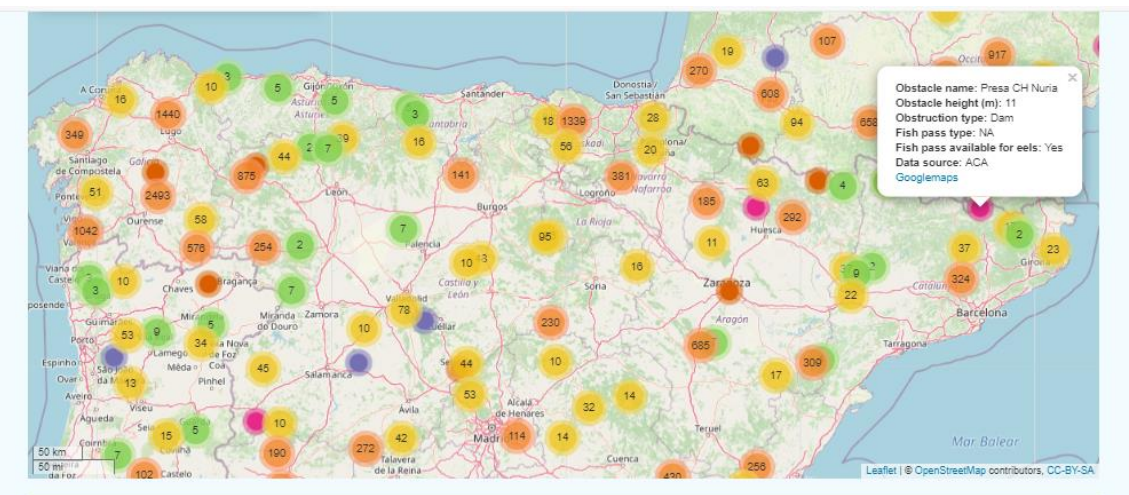
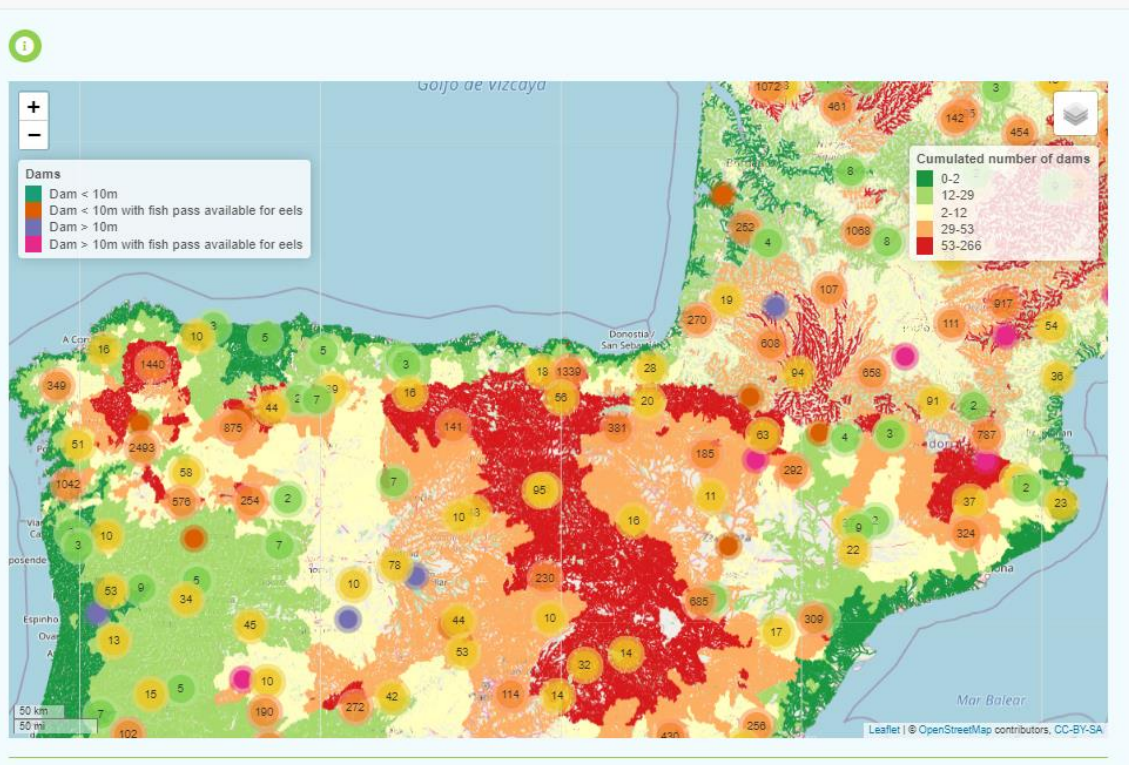
MAPA DE PRESIONES : OBSTÁCULOS

INVENTORY

The inventory of all dams and hydropower plants in Portugal, Spain and France is now available. The user can identify the qualitative impact of any obstacles on eel and establish priorities to improve connectivity of the river and hence eel habitat. The map below shows a cluster of dams and hydropower plants in separated layers depending on the height and the presence of a fish pass suitable for eel migration and presence of bypass, in dams and hydropower plants, respectively. These are visualizing together with the altitude of the river (m), the distance to the sea (km), the cumulated number and height of the dams available on the layers control. These dams present the current state of knowledge collated by the SUDOANG project.

When clicking on the map, clustered dams disaggregate until individual dams are shown. Click on an individual dam and related information pops up. Dams and hydropower plant's location may be checked with Google Maps link. Two table appear below the map with extended information related to that dam and associated hydropower plants. The plot next to them shows the cumulated number of dams below that individual dam in relation to the altitude of the river (m) and the distance to the sea (km). For help on the parameters click on 'i'.





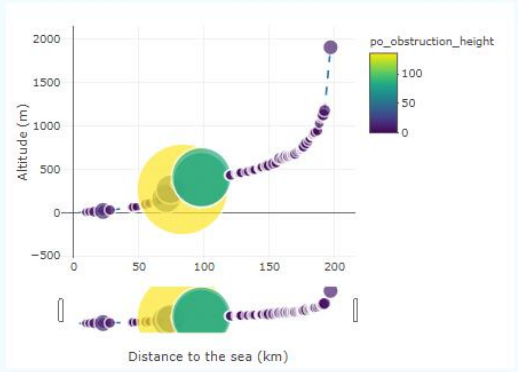
Dam details

| | | | |
|------------------------|------------------------------|--|--|
| Basin | CUENCAS INTERNAS DE CATALUNA | | |
| Country | SP | | |
| Eel Management Unit | ES_Cata | | |
| Fish pass available | Yes | | |
| Fishway type | NA | | |
| Obstruction height (m) | 11 | | |
| Obstruction impact | NA | | |
| Obstruction name | Presa CH Nuria | | |
| Obstruction type | Dam | | |

Hydropower plant details

| Hydropower plant name | Presence of bypass | Data source | Data provider |
|-----------------------|--------------------|-------------|---------------|
| Nuria | TRUE | NA | AMBER Project |

Cumulated dams downstream



MAPA DE PRESIONES: MORTALIDAD

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MORTALITY

This is a demonstrator for the calculation of mortalities in turbine. It uses various scenarios (flow, repartition, etc.) to provide modelled estimates of hydropower mortalities at the dam and basin level. It uses the eel production and size structure estimated in GT4. First select a basin by clicking on the map and then choose the model; options include eel repartition scenario, migration flow scenario and the opportunity to use an average mortality figure to hydropower plants where information is missing.

Click on "proceed" button to get basin wide results. In the dam results below, you will get a basin overview of mortality results. Click on a dam, either in the table or in the map to display results for that dam.

1. CHOOSE A BASIN AND CALCULATIONS OPTIONS

Basins for mortality

- Adour
- Guadalquivir
- Guadiana
- Minho
- Mondego
- Oria
- Ter

Repartition scenario: Current

Migration scenario: Vilaine

Model missing

Basin selected: **Adour**

| Q | Elorn | Touques | Vilaine | (Vilaine,1) |
|-----|-------|---------|---------|-------------|
| 25 | 0.01 | 0.05 | 0.01 | 0.01 |
| 50 | 0.07 | 0.21 | 0.03 | 0.03 |
| 75 | 0.21 | 0.18 | 0.20 | 0.13 |
| 100 | 0.17 | 0.01 | 0.19 | 0.12 |

Q: 60
Percentage: 0.083896130
loc: Vilaine

Proceed

calculation mode: calculated / unknown

barrage Guerlain
code: ROE30838 source: ROE google
net nb killed: 221,
potential nb killed: 250,
mort rate: 0.23

Mortality rate: 0, 10, 20, 30, 40, 50, 60, 70, 80, 90, NA

BASIN : Adour

- The number of fish dead in the basin is $N \downarrow$: **4382**
- This must be compared to the total silver production N : **337966**
- Dividing number of eel dead by basin wide production gives a **basin wide mortality rate of : $T \downarrow$: 1.3 %**
- In their **course downstream the average mortality rate is $\tau \downarrow$: 13.5 %**
- If we only choose those eels coming from upstream Hydropower plants (HPP), the mortality is $\tau \downarrow$ up : **22.7 %**
- This is low but the percentage of population downstream from the first HPP dam is N_{down} : **83 %**
- Finally, when crossing HPP dams, **the average mortality rate is $\tau \downarrow$: 9.8 %**

MAPA DE PRESIONES: TASA DE EXPLOTACIÓN

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GLASS EEL RECRUITMENT

Visualize the recruitment estimates made using the GEREM model in the SUDOANG project. These estimates are provided at the scale of SUDOEE, eel management units, large areas defined in the model and river basins. Recruitment can be represented in different ways: absolute scale, relative scale, logarithmic scale, weighted by the surface area of the study area.

Choose your parameters in the dropdown menu below, the year from which you want to see the results and click "Update view" to see the first graph either lines or bars type. Once the recruitment estimates of your basin are generated, a table is displayed below to enter the annual catches. The plot next to it shows the exploitation rate. Both the recruitment estimates, and exploitation rates data are downloadable clicking on "Recruitment" and "Catch Rate" buttons. For help on the parameters click on "i".

Catch Rate

If you want to use Sudoang results to have an estimate of the catch rate in your area, you can provide catches (kg) in the table below and corresponding exploitation rates will be plotted. The data will not be saved and will only be used for your session to draw the diagram.

| YEARS | Rio Ebro |
|-------|----------|
| 1960 | 845.00 |
| 1995 | 845.00 |
| 1996 | 699.00 |
| 1997 | 575.00 |
| 1998 | 759.00 |
| 1999 | 847.00 |
| 2000 | 948.00 |
| 2001 | 369.00 |
| 2002 | 845.00 |
| 2003 | 699.00 |
| 2004 | 575.00 |
| 2005 | 759.00 |
| 2006 | 847.00 |
| 2007 | 948.00 |
| 2008 | 369.00 |
| 2009 | 845.00 |
| 2010 | 699.00 |
| 2011 | 575.00 |
| 2012 | 759.00 |
| 2013 | 847.00 |
| 2014 | 948.00 |
| 2015 | 369.00 |
| 2016 | |
| 2017 | |
| 2018 | |
| 2019 | |
| 2020 | |

[Catch rate](#)

