

OASIS: HOW TO RUN REGULATED RIVERS IN SEMI-ARID REGIONS?

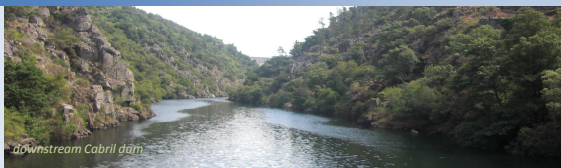
A PROJECT ON ENVIRONMENTAL FLOWS FOR RIPARIAN VEGETATION



OASIS in a nutshell

OASIS is a R&D project that proposes a hybrid model framework to quantify environmental flows (EFs) for the conservation and restoration of riparian vegetation impacted by regulation in semi-arid regions.

The eco-hydrological models project is founded on flow-ecological relationships of riparian forests, and includes decision models and cost-benefit analysis of EFs' implementation.

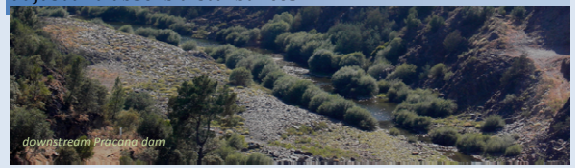


CONTEXT

Riparian forests are a central element of riverscapes.

In Mediterranean and semi-arid regions they emerge from the surrounding landscape matrix as "linear oasis", and contain a disproportionate share of regional biodiversity.

Rivers are presently experiencing dramatic changes in the stream flow regime by water diversion, river regulation, more extreme flood events and droughts, which reduce the capability of aquatic and stream-related ecosystems to adjust and absorb disturbances.

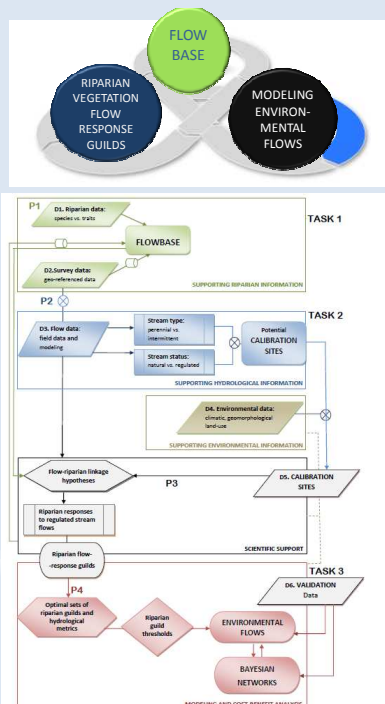


HYPOTHESES



1- regulated stream flows induce changes in spatial vegetation structure, in floristic composition and trait spectra, including declines in biological and functional diversity.

2 - perennial streams experience higher functional diversity loss than intermittent streams but similar declines in structure and composition



METHODS

OASIS is structured into 3 interconnected tasks and 4 processes, P:

- 1) FLOWBASE; establishment of a riparian-flow traitbase;
- 2) Determination of riparian vegetation-flow response guilds in regulated rivers;
- 3) Model development and predictive approach of the cost-benefits of EFs' implementation

What is the FLOWBASE?

-a database on functional plant traits (attributes) of Mediterranean riparian species responsive to flow alteration (e.g. life history, reproductive strategy, adaptations to drought or waterlogging, dispersal strategy,...)

Contributions to the FLOWBASE are welcome.

ADOPT A SPECIES! ADOPT A TRAIT!

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