

**Call for application for research scholarships
for post-graduate international candidates**

RESEARCH PROJECT N. 38

Title

Water resources management and ecological responses in non-tidal wetlands

Scientific responsible (name, surname, role)

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Short description of the research activity (max 250 words)

The formation, persistence, size, and ecosystem functions of non-tidal wetlands are controlled by eco-hydro-morphological processes, that can be naturally driven or influenced by human activities. The proposed research will be focused on artificially regulated wetlands, with a specific attention on the interactions between aquatic ecosystems and agricultural practices. The research will have two aims: 1) providing a sound scientific basis to quantify the ecological benefits provided by non-tidal wetlands, and 2) identifying cost-effective methodologies for monitoring the health of wetland habitats.

The research will be carried out in collaboration with the Polytechnic University of Valencia (Spain) and specific cases studies will be selected in both Piedmont and Valencia regions.

Particular attention will be dedicated to **understanding the role of vegetative composition, soil type, and water management (Research Task 1, RT1)** in affecting the movement of water (velocities and flow patterns) within the wetland, water quality, and the degree of pressures and disturbances on aquatic communities (fish and macroinvertebrates). Based on available data and literature information, **eco-hydrological relationships** will be investigated for different taxonomic and functional groups of organisms (RT2). Lastly, **the cost-effectiveness of standard and recently proposed bio-monitoring methodologies** will be also evaluated (RT3), trying to identify appropriate techniques able to describe ecological responses in non-tidal wetlands.

Specific requirements (experiences, skills)

Base knowledge on hydrology, hydraulics, aquatic ecology, water resources management

Website of the research group (if any)

<http://envirofluidgroup.it>

Keywords (min 3, max 6)

Non-tidal wetlands, eco-hydrology, water resources management, wetland ecosystem functions

Research Area (max 1)

Environment, Land, Infrastructure