RIBES: RIver flow regulation, fish BEhaviour and Status

The European challenge:

In 2016 serious concerns on the achievement of the EU Biodiversity Strategy 2020 targets, due to the continuing loss of biodiversity and degradation of aquatic habitats, led to the urgent adoption of a new Resolution for implementing ecosystem restoration measures. Moreover, on December 2018 the EU raised to 32% the binding renewable energy target for 2030, bringing further input to hydropower development. Meeting these targets, sets challenging issues for mitigating the impacts of man-made structures in rivers that fragment habitats and prevent movement and migration of aquatic organisms.

The Project

The project aims training 15 ESRs in the interdisciplinary field of Ecohydraulics to find innovative solutions for freshwater fish protection. Specific objectives of the project are:

- quantify behavioural mechanisms and stress-related responses to anthropogenic disturbances in rivers and related physiological indicators,
- advancing existing capabilities of observing and modelling flow fields around swimming fish and the bio-mechanics of fish locomotion,
- innovating currently-adopted technologies related to detection and tracking of fish to gain insights on fish behaviour from field and lab observations,
- develop fish management tools and novel design of facilities devoted to fish protection and to improve eco-compatibility of hydropower systems.

Partners:

Fiskevardsteknik i Sverige ab (FVT); Karlstads Universitet (KU); Forschungsverbund Berlin Ev (FVB-IGB); Sje Ecohydraulic Engineering Gmbh (SJE); Tallinna Tehnikaulikool (TalTech); university of Aberdeen (UNIABDN); Universita degli studi di Padova (UNIPD); Universiteit Gent (UGent); University of Southampton (SOUTHAMPTON); Norconsult Ab (NOAB)

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