

FIThydro

Fishfriendly Innovative Technologies for Hydropower

Aim: Development of cost efficient environmentally friendly solutions and mitigation measures for improving fish protection in hydropower plant affected rivers.

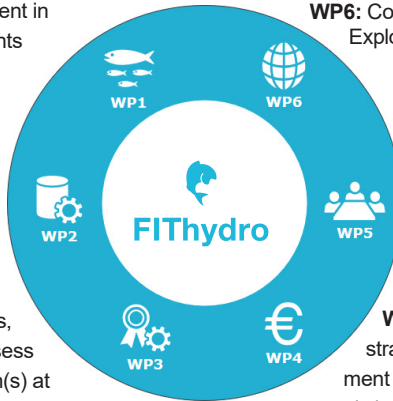
Development of decision support tools for commissioning and operating hydropower plants by use of existing and innovative technologies.

Work Packages

WP1: Fish population development in hydropower effected environments

WP2: Appraisal of existing solutions, models, tools and devices to assess the self-sustained fish population(s) at the test case HPP in the four regions

WP3: The innovation of solutions, models, tools and devices to assess the self-sustained fish population(s) at the test case HPP in the four regions



WP6: Communication, Dissemination and Exploitation

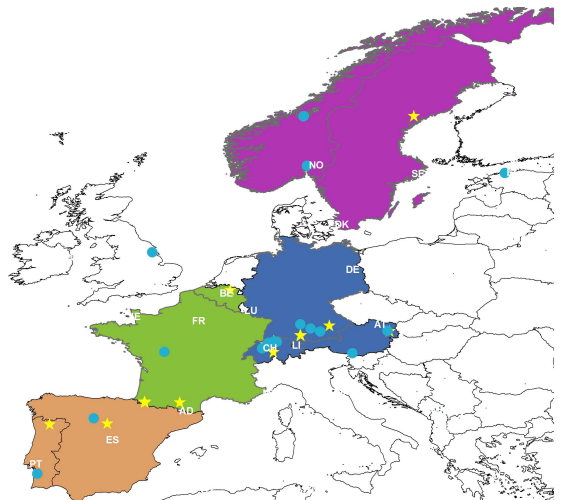
WP5: Stakeholder involvement and decision-support system

WP4: Cost effective management strategies to improve the development of self-sustained fish populations at existing and new HPPs

Test Regions

4 Test Regions in Europe:

- Alpine region
- France and Belgium
- Iberian Peninsula
- Scandinavia
- FIThydro Test Cases
- FIThydro partners



Matching power plants to ecosystems

Large-scale initiative for ecologically compatible hydropower

Excerpt from the interview with project coordinator Prof. Peter Rutschmann:

What issues do you want to address in the “FIThydro” research project?

We want to find out which technologies and concepts provide the best solutions for different scenarios. For example, there are two ways of preserving fish populations. You either protect the animals from the plant's turbines or you make sure that the population can regenerate effectively. To do this, you have to make provisions for new spawning grounds, for example by reconnecting old tributaries to a main body of water.

Can't these hydroelectric power plants be modified to allow the migration of organisms?

Yes, the majority can be. However, there is a lot of debate about how much passage is required to ensure sustainable populations. One reason, why these conflicting interests are not easy to balance, is: Even though we have been using hydroelectric power for a long time, we still don't know enough about many aspects of this technology. For example, there is very little scientific evidence documenting the number of species-specific fish that are harmed by specific types of hydroelectric power plants and the impact this has on the survival of entire populations.

We are analyzing seventeen test case sites, each with different power plant set-ups and different challenges. We have selected four regions for this that represent the whole of Europe: Scandinavia as the largest producer of hydropower, the Alps region with its high water drops, the Iberian Peninsula as a dry region and France and Belgium representing the European Plain.

What happens after the study? Not all power plant operators want to read dense academic papers.

We aim to create an online tool that can be used to plan and evaluate hydroelectric power plants. Once users have entered information about the power plant and its surroundings, the system will then determine the risk to the fish living there and evaluate the measures promising the most benefits to the ecosystem while enabling the power plant to operate cost effectively. This will enable us to find solutions that are grounded in science and factor in the interests of all stakeholders.

You can read the full interview online as a TUM press release from the 17.05.2018 under:

<https://www.tum.de/en/about-tum/news/press-releases/detail/article/34645/>

