USING TURBULENT EDDIES TO GUIDE FISH: THE FISHPATH PROJECT

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ABSTRACT: The continuing increase in global energy demand, and the need to mitigate anthropogenic climate change by increasing renewable energy shares, are drivers for major changes and growth in the hydropower (HP) sector. At the same time biodiversity is declining at an unprecedented rate and sustainability can only be achieved through transformative changes. Thus, the global HP industry faces the challenges to increase renewable energy production while simultaneously protecting biodiversity.Habitat fragmentation due to the presence of HPPs, dams and weirs is one of the major threats to worldwide aquatic biodiversity. Maintaining or re-establishing longitudinal connectivity for fish in fragmented rivers is then crucial. These drive for knowledge-based optimized solutions. The FishPath (Turbulent eddies to create paths for safe downstream migration for salmonids and eel past hydropower intakes) project proposes at developing an innovative eddie-based guidance structure to facilitate downstream migration of fish passing hydropower structures. The novel idea is that knowledge on fish behavioural responses to turbulent eddies can be used to develop guidance system to create alternative migration pathways for fish around HPP. Current solutions are challenging in terms of technology, operation and costs. FishPath outcome is expected to be a practical solution applicable in a wide range of rivers with different types of hydropower. In this presentation we will give a summary of the project and the main results so far obtained focusing fish behaviour- eddies interaction.