**Advancing fishway science in Canada**

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**Rationale**: The disruption of river connectivity through the construction of barriers used for hydropower development, irrigation, flood control, and drinking water can severely damage river ecosystems, reduce the quality of fish habitat, and prevent the upstream migration of fishes. In an attempt to restore river connectivity and mitigate the effects of dams on fish populations, barriers are often equipped with fishways. Most of the studies that evaluate biological effectiveness base their assessment solely on the presence of fish at the top of the fishway indicating successful ascent. What is unknown is how many fish fail to find the fishway or do so but fail to ascend the fishway. Even determining basic information on the number and types of fishways in a given region is challenging as there is no repository for such information.

**Description***:* CanFishPass was created as a national repository for upstream fishway-related information and was designed so that it could be continually updated with new information. This study encompasses the population and evaluation of the CanFishPass database as well as incorporating a field study of fish passage by three redhorse species at a vertical slot fishway.

**Outcomes:** This study will identify trends concerning fishways in Canada as well as presenting recommendations to strengthen both CanFishPass and fishway science and application in Canada. Additionally this study will describe the passage success and passage ability of three redhorse species at a vertical slot fishway.

**Benefits from this research:** CanFishPass is the only database of its kind in the world and therefore serves as a unique resource to understand the diversity of fishways in Canada. Passage evaluation of redhorse species will give managers an idea on the level of passage success for the studied species.

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