



Biotic and abiotic aspects of entrainment risk in bull trout (*Salvelinus confluentus*) in Kinbasket Reservoir.

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Rationale:

*Few evaluations have been conducted on the entrainment vulnerability of adult fish. Entrainment of adult fish could represent significant losses to a population and be particularly detrimental to species' that are already imperilled, such as bull trout (*Salvelinus confluentus*). By passively tracking the movement of adult migratory bull trout in a large hydropower reservoir, it will be possible to estimate entrainment vulnerability and identify the spatial ecology of a species that is not only threatened throughout its range, but also poorly understood compared to other charrs.*

Description:

Approximately 190 adult bull trout were surgically implanted with coded telemetry transmitters and a telemetry array comprised of 43 receivers including a downstream receiver was installed in Kinbasket reservoir. The telemetry array was strategically designed to maximize coverage and the likelihood that a tagged bull trout would encounter a receiver.

Outcomes:

- *Provide important information about the spatial ecology and depth distribution of migratory bull trout in each season including under ice.*
- *Deliver a statistical model that will predict entrainment vulnerability based on biological (e.g. size) and abiotic (e.g. season) factors.*

Significance and benefits: *This component uses an integrative approach to answering management and science based questions and will deliver the tools for managing other relevant reservoirs and their fish populations in BC and abroad. This research also uses a networking approach between industry and government that is a prudent strategy to guiding responsible and sustainable development of hydropower in Canada.*



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