Identifying thermal refugia and their use by a species of conservation concern, Chinook salmon (*Oncorhynchus tshawytscha*) in a temperature sensitive stream.

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Salmon habitat rehabilitation efforts often require significant resources of time and money to effectively plan and implement, resources which are frequently limited. Habitat assessment and monitoring limitations can lead to assumptions that can affect the methods, tools, and ultimately the success of our rehabilitation efforts. At a time when many salmon populations are facing poor productivity, understanding how salmon are interacting with their habitat can form a key part of the habitat assessment. Stream-type, spring-run chinook salmon (*Oncorhynchus tshawytscha*) in the Deadman River have been managed by fisheries managers as a conservation concern for many years. Semi-arid conditions and land used for agricultural and forestry purposes are thought to influence temperature regimes in this and other Southern Interior streams. Stream temperatures frequently approach or exceed the upper thermal limits for both adult and juvenile salmon, and are likely a limiting factor for this population. Migration to cool water refuges such as outlets of cooler creeks and groundwater seepage sites is crucial during such situations; however, these microhabitats must be abundant and available if they are to mitigate high ambient stream temperatures.

My thesis aims to document the quantity and quality of cool water habitats in the Deadman River, currently a data gap. Specifically I will:

a) Characterize spatial and temporal patterns of thermal habitat (cool and warm areas)
b) Determine chinook habitat use of cool water areas at different life stages

Techniques to collect temperature data will include aerial thermal infrared radiation (TIR) scans and continuous water temperature monitoring. Chinook habitat use surveys will entail thermal-radio telemetry (adults) and visual snorkel surveys (juveniles).