

Stresssss at home: Assessing Rattlesnake Response to Disturbance in the South Okanagan

Jared R. Maida¹

Co-Supervisors: Dr. Karl W. Larsen² and Dr. Christine Bishop³

Committee Member: Dr. Mark Rakobowchuk²

¹ MSc, Environmental Science, Thompson Rivers University, jaredmaida@gmail.com; ² Faculty of Science, Thompson Rivers University; ³ Environment and Climate Change Canada

The South Okanagan is undergoing immense landscape changes in order to meet the needs of the growing population and tourism industry. Such changes result in the Western Rattlesnake (*Crotalus oreganus*) utilizing degraded, fragmented habitats as well as locations conducive to more frequent human interactions. The objective of my research is to increase our understanding of how rattlesnakes respond to reduced habitat quality and an increase in human interactions and disturbance. Glucocorticoid stress hormones, such as corticosterone (CORT), can be used to provide current and long term information on physiological responses of individuals to environmental disruption and changes. My results suggest that rattlesnake baseline CORT is not influenced by habitat quality or the degree of disturbance. In attempt to minimize negative human-snake interactions, exclusion fencing is a popular and potentially effective tool to deflect snakes away from certain areas. However, rattlesnakes trying to navigate these fencing barriers did have elevated baseline plasma CORT compared to snakes in natural, un-disturbed landscapes. To my knowledge this study is the first study to document elevated baseline plasma CORT in rattlesnakes in relation to disturbance. The results and outcomes of my research will expand our understanding of the sub-lethal impacts of disturbance on rattlesnakes and provides a benchmark for future work (ie. Identify stressors), all in effort to outline more thoughtful and effective conservation strategies for this species.