University of Victoria | Graduate Studies

Notice of the Final Oral Examination
for the Degree of Master of Science

of

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BSc (Maastricht University, 2013)

"Supporting Indigenous marine conservation planning: a case study of the Songhees Nation"

School of Environmental Studies

Monday, October 21, 2019
10:00 A.M.
David Turpin Building
Room B255

Supervisory Committee:
Dr. Natalie Ban, School of Environmental Studies, University of Victoria (Supervisor)
Dr. Darcy Mathews, School of Environmental Studies, UVic (Member)

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Chair of Oral Examination:
Dr. Issa Traore, Department of Electrical and Computer Engineering, UVic

Dr. David Capson, Dean, Faculty of Graduate Studies

Abstract

Worldwide marine ecosystems are facing unprecedented threats, and the biodiversity crisis is paralleled by a decline in Indigenous cultures and languages. Increasingly, Indigenous peoples' abilities to practice their traditional livelihoods and cultures are reduced, but there are many examples of cultural resurgence. My thesis was based on a collaboration for marine conservation planning for *Tl'ches* between the Songhees Nation and researchers from the University of Victoria.

The primary objectives for my thesis were to 1) to document the Songhees marine conservation planning process, and compare it to systematic conservation planning to outline the similarities, differences, and highlight the uniqueness of an Indigenous-led planning approach and 2) to systematically document and integrate culturally significant species and their habitats into the Songhees stewardship vision for the marine use plan.

I achieved my first objective by systematically documenting and showcasing the Indigenous-led marine conservation planning process of the Songhees Nation to reclaim and further stewards the *Tl'ches* archipelago near Victoria, BC. I ascribed process steps to the Songhees marine conservation planning approach and compared these steps to the traditional systematic conservation planning (SCP) steps as laid out by Pressey and Bottrill (2009). The Songhees approach showed similarities to SCP in the initial scoping phase of the marine conservation planning, in the review and compiling of existing data prior to the collection of data as well as the focus on focal species such as culturally important species. Overall, the Songhees approach to marine conservation planning showed differences in the scoping of the protected area boundaries (one zone only), did not involve any other stakeholders and tried to account for the whole social-ecological system in one process step. Another major difference is that the Songhees Nation lacks clear jurisdiction to implement the protected area and intended the Songhees Marine Use Plan to inform its discussions and engagement with other levels of government. My second objective was accomplished by applying and evaluating the remotely operated vehicle (ROV) Trident OpenROV as part of the Songhees marine conservation planning process around *Tl'ches*. This objective had three main outcomes: 1) I evaluated the marine ecological data collection capabilities for the Trident and 2) my surveys resulted in a systematic benthos classification and documentation of the algal community as well as a

baseline of Songhees culturally important species. 3) I evaluated the ability of the Trident to provide high resolution ecological data to inform a marine use planning process. I found the Trident to be a capable tool to conduct systematic marine surveying despite some limitations such as low maneuverability in moderate to high current environments and dense kelp areas. I was able to document 14 of 25 culturally important species and 28 species of algae and seaweeds. I was also able to establish highly stressed environments suited for future restoration efforts.

My research saw the creation of the Songhees Marine Use Plan. The plan, along with the associated permanent data collection and compilation, can serve as a basis and guide to the Songhees Nation to initiate a monitoring program. The documentation of the whole planning process can also serve as guidance for other Indigenous nations wanting to conduct their own conservation planning. Given the complicated jurisdictional landscape over the archipelago, the Songhees Marine Use Plan could help strengthen assertions to exclusive stewardship and aid in creating a basis for dialogue between other stakeholders such as the Province of British Columbia. My collaboration fills a gap in the marine conservation planning literature by providing an example of an Indigenous-led marine conservation planning process according to the priorities of the Songhees Nation.