University of Victoria | Graduate Studies

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

of

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BSc (University of Victoria, 2013)

"Evaluating The Impacts Of Human-Mediated Disturbances On Species' Behaviour And Interactions"

School of Environmental Studies

Friday, July 27, 2018
9:00 a.m.
David Turpin Building
Room 255

Supervisory Committee:
Dr. Jason Fisher, School of Environmental Studies, University of Victoria (Co-Supervisor)
Dr. John Volpe, School of Environmental Studies, UVic (Co-Supervisor)

External Examiner:
Dr. John Taylor, Department of Biology, UVic

Chair of Oral Examination:
Dr. Annalee Lepp, Department of Gender Studies, UVic

Dr. David Capson, Dean, Faculty of Graduate Studies

Abstract

Developing effective conservation strategies requires an empirical understanding of species' responses to human-mediated disturbances. Observable responses are typically limited to dramatic changes such as wildlife population declines or range shifts. However, preceding these obvious responses, more subtle responses may signal larger-scale future change, including changes in species' behaviours and interspecific interactions. Disturbance-induced shifts to species' diel activity patterns may disrupt mechanisms of niche partitioning along the 24-hour time axis, altering community structure via altered competitive interactions. I investigate the main questions and methods of analysis applicable to camera-trap data for furthering our understanding of temporal dynamics in animal communities. I apply these methods to evaluate the impacts of human-mediated disturbance on species' activity patterns and temporal niche partitioning in two separate studies, focusing on responses in the mammalian carnivore community. In the Canadian Rocky Mountain carnivore guild, species alter diel activities in relation to anthropogenic landscape development, although these shifts may be manifesting through indirect biotic effects instead of direct responses to human disturbance. Mesocarnivore species on a mixed-use landscape featuring anthropogenic land-use and introduced free-ranging dogs (Canis familiaris) shift activities in relation to spatiotemporal dog activity. Native carnivores partition diel activities differently on open landscapes of enhanced predation risk but abundant prey resources. Detecting shifts in species' temporal behaviours and competitive interactions may enable identification of potential precursors of population declines and shifting community assemblages, providing us with opportunities to pre-emptively manage against such biodiversity losses on human-modified landscapes.