



**University  
of Victoria**

Graduate Studies

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

of

**KATIE DAVIDSON**

BSc (Vancouver Island University, 2015)

**“Influences of marine subsidies on coastal mammal ecology”**

Department of Geography

Friday, January 12, 2018

1:30 P.M.

Clearihue Building

Room B019

Supervisory Committee:

Dr. Christopher Darimont, Department of Geography, University of Victoria (Supervisor)

Dr. Rana El-Sabaawi, Department of Biology, UVic (Outside Member)

Dr. Brian Starzomski, School of Environmental Studies, UVic (Additional Member)

Dr. Morgan Hocking, School of Environmental Studies, UVic (Additional Member)

External Examiner:

Dr. Donald Kramer, Professor Emeritus, Department of Biology, McGill University

Chair of Oral Examination:

Dr. Erin Kelly, Department of English, UVic

Dr. David Capson, Dean, Faculty of Graduate Studies

## **Abstract**

The flow of nutrients from the marine to terrestrial environment represents an important source of food and nutrients for many organisms inhabiting oceanic islands. Insular mammal species richness was significantly correlated with island area and quantity of marine subsidy (wrack). However, mink and river otter island occupancy was unaffected by island-level covariates, and small mammal island occupancy was more likely when islands were closer to neighbouring islands. Keen's mice and food items were subsidized directly and indirectly by marine resources. Beach-dwelling arthropods compose 33% of mouse diets. Furthermore, mouse and terrestrial arthropod abundances and stable isotope signatures ( $^{13}\text{C}$  and  $^{15}\text{N}$ ) of food items declined moving inland from the beach. Finally, reproductive male mice consumed up to twice the marine-derived prey as females. Collectively, this work demonstrates that insular mammalian richness, as mediated by island-level factors, may be complex due to variation within populations and the recipient ecosystem (e.g., prey biomass).