University of Victoria | Graduate Studies

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

of

JACQUELINE CLARE

BSc (University of Victoria, 2011)

"Characterizing site fidelity and habitat use of the eastern north Pacific gray whale (*Eschrichtius robustus*) in Clayoquot Sound, British Columbia"

Department of Goegraphy

Thursday, August 6
10:00AM
David Turpin Building
Room B215

Supervisory Committee:
Dr. David Duffus, Department of Geography, University of Victoria (Supervisor)
Dr. Phil Dearden, Department of Geography, UVic (Member)

External Examiner:
Prof. Robin Baird, Cascadia Research Collective

Chair of Oral Examination:
Dr. Robert Dalton, Department of Curriculum and Instruction, UVic

Dr. David Capson, Dean, Faculty of Graduate Studies

Abstract

A small number of eastern north Pacific gray whales (*Eschrichtius robustus*), known as the Pacific Coastal Feeding Group (PCFG) forage during the summer months in the coastal waters between California and Alaska. Although several studies have analyzed the population structure of the PCFG, maternal learning and predator/prey dynamics have not been studied in detail. In this study I characterize fine scale habitat use and site fidelity of eastern north Pacific gray whales (*Eschrichtius robustus*) in one foraging site within the PCFG's foraging range. I approach this study by examining site fidelity to Clayoquot Sound in increasing detail at different time scales. Using the variability recorded in 17 field seasons of whale census surveys (1997-2013) as a proxy for fluctuations in prey, I suggest that the combination of physical properties of the study area and the life history characteristics of the primary prey species type enable Clayoquot Sound to persist as a foraging site through time. The analysis of photographic identification data collected between 1998-2013 indicates that Clayoquot Sound is one site within a larger foraging range, and that annual fluctuations in prey density are related to site fidelity and residency time. By identifying cow/calf pairs using photographic identification data collected between 1998-2013 I characterize internal recruitment via maternal learning within Clayoquot Sound. A calf's site fidelity is related to its mother's site fidelity, but its residency time is related to annual fluctuations in prey density. In contrast, a cow's residency time is not related to changes in prey, but increases in duration when accompanied by a calf. The interplay between fluctuations in prey productivity, and the age and gender of individuals, are the variables that most likely influence the distribution of PCFG whales intra- and inter-annually.