



University
of Victoria

Graduate Studies

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

of

COLTON VOGELAAR

BA (University of British Columbia, 2015)

**“Using GIS modelling as a tool to search for late Pleistocene and early
Holocene archaeology on Quadra Island, British Columbia”**

Department of Anthropology

Thursday, November 30, 2017

2:30 P.M.

Clearihue Building

Room B017

Supervisory Committee:

Dr. Quentin Mackie, Department of Anthropology, University of Victoria (Co-Supervisor)

Mr. Daryl Fedje, Department of Anthropology, UVic (Co-Supervisor)

External Examiner:

Dr. Loren Davis, Department of Anthropology, Oregon State University

Chair of Oral Examination:

Dr. Victor Murray, School of Public Administration, UVic

Abstract

The archaeological sites that inform the hypothesized coastal route of entry to the Americas are limited, with fewer than twenty sites older than 11,500 years before present on the Northwest Coast of North America. Late Pleistocene and early Holocene archaeological sites are hard to find in this expansive, remote, and heavily forested area due to the complexity of paleoenvironmental change since the last glacial maximum. The study area for this thesis, Quadra Island, in the Discovery Islands, lies in the middle of a gap in knowledge about this time period. Changes in relative sea level have proven to be especially important for early site location on the coast. Predictive modelling has been used to search for new archaeological sites on the Northwest Coast, and is a basic component of cultural resource management practices in British Columbia. Such quantitative modelling can aid in archaeological site survey, but must be used critically.

This study integrates quantitative and qualitative modelling with a heuristic method to incorporate more humanistic modelling theory and address some critiques of a traditional predictive modelling approach. In this study, quantitative modelling highlighted target areas which were then evaluated by qualitative modelling. A selection of targets were then subjected to focussed archaeological survey to evaluate methodology, results, and search for new sites. This method is important theoretically because modelling is explicitly used only as a tool and does not label the landscape with values of potential. Modelling was applied in two areas of Light Detection and Ranging (LiDAR) data which collectively host more than 4,000 kilometres of potential paleo-coastline. Fourteen new archaeological sites were found during this study, with at least two sites radiocarbon dated to ca. 9,500 calibrated years ago. This methodology could be applied in different archaeological contexts, such as underwater and in different coastal regions. The results of this study have important implications for coastal First Nations and implications for cultural resource management in the province.