University of Victoria | Graduate Studies

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

of

ALICIA DONALDSON

BSc (University of Victoria, 2004)

"Effects of Temperature, Salinity and Food Stress on Larval Growth and Development in Olympia Oysters, *Ostrea lurida*"

Department of Biology

Thursday, July 30, 2015
2:30PM
Hickman Building
Room 120

Supervisory Committee:
Dr. Louise Page, Department of Biology, University of Victoria (Co-Supervisor)
Dr. Sarah Dudas, Department of Biology, UVic (Co-Supervisor)
Dr. Stephen Cross, Department of Geography, UVic (Outside Member)

External Examiner:
Dr. Helen Gurney-Smith, Centre for Shellfish Research, Vancouver Island University

Chair of Oral Examination:
Dr. Luke Carson, Department of English, UVic

Dr. David Capson, Dean, Faculty of Graduate Studies

Abstract

Ostrea lurida Carpenter 1864 is the only native oyster on the western North American coast, but is functionally extinct in most of its historic range. Knowledge of environmental tolerances during larval development of *O. lurida* is minimal, which limits recovery strategies for this “species of special concern”. The effects of rearing temperature (13, 17, 21°C), salinity (11, 15, 21, 24, 30, 31 psu) and food concentration (5x103, 1x104 and 5x104 cells/ml) on larval growth and development were investigated. Larvae were obtained from laboratory conditioned adults from Ladysmith Harbour, and the Gorge Waterway on Vancouver Island BC. At low temperature (13°C), salinity (15 psu) and food concentration (5x103 cells/ml) larvae did not grow or develop. With increasing temperature, salinity and food concentration, growth and developmental rates increased. Larvae reared at higher food densities and salinities were larger when eyespots differentiated, but larval size at eyespot differentiation was unaffected by rearing temperature.