University of Victoria | Graduate Studies

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

of

KIM KENNEDY

B.NRSc (Thompson Rivers University, 2009)

"Exotic vs. Native: Global and Urban Investigations of Leaf Litter Decay in Streams"

Department of Biology

Thursday, August 11th, 2016
11:00 am
Hickman Building
Room 120

Supervisory Committee:
Dr. Rana El-Sabaawi, Department of Biology, University of Victoria (Supervisor)
Dr. Francis Juanes, Department of Biology, UVic (Member)
Dr. Terri Lacourse, Department of Biology, UVic (Member)

External Examiner:
Dr. Brian Starzomski, School of Environmental Studies, UVic

Chair of Oral Examination:
Dr. Steve Garlick, Department of Sociology, UVic

Dr. David Capson, Dean, Faculty of Graduate Studies

Abstract

Exotic species alter the streamside plant community by changing the resources available to the stream food web, causing cascading changes throughout the entire aquatic ecosystem. To better understand the impacts of exotic litter species on stream communities investigations were made at global and local levels. A global meta-analysis was performed to understand which environmental and litter quality factors impact native and exotic litter decay rates on the global scale. It was found that exotic species are likely to decay faster than native species at larger mesh sizes, and in warm temperature environments because high quality exotic leaves have a lower C:N ratio than native leaves there. An urban litter decay experiment in Victoria, B.C. streams contrasting *Anus rubra*, *Salix sitchensis*, *Hedera spp*., *Rubus armeniacus* and plastic trash found that trash decays more slowly than leaf litter, but leaf species all decay at the same rate, and stream invertebrates colonize all litter types equally. The more that is learned about the impacts of exotic leaf litter, the better we are able to respond to keep streams as healthy and as biodiverse as possible.