AQUATIC INVERTEBRATE COMMUNITY RESPONSE TO RIPARIAN CANOPY MANIPULATIONS

CEDAR MACKANESS

INTRODUCTION

Over the last 200 years a majority of the United States forests have been harvested. Under past forest management practices, trees along stream channels were removed. This has left streams with riparian zones in various states of stand development, but most often with dense second growth vegetation that blocks out more light than a gap-filled, old growth canopy might. The objective of this study is to examine how gaps cut into dense second growth riparian canopies

THESIS STATEMENT /HYPOTHESIS

Does manipulating riparian canopy structure change the benthic macroinvertebrate community by increasing abundance of invertebrates that graze on autochthonous material and is this change reflected in the diet of Coastal Cutthroat Trout.

APPROACH/METHODOLOGY

Using a Before/After, Control/Impact study design, I will collect invertebrates in the summer of 2017 and 2018 at five sites in the McKenzie watershed near the town of Blue River. Invertebrates will be collected using a benthic Surber Sampler, and samples will then be preserved in 90% ethanol for later identification in the lab. I will identify bugs to family or genus level using a dissecting scope in the Lytle Lab (Cordley 4009). Statistical analysis will be done in R using the Vegan package for community analysis.

APPROACH SUBSECTION (REQUIRED FOR ALL THESES): Does your thesis project involve any research activity that requires compliance procedures (e.g., human subject research requiring Institutional Review Board approval)?

**No.**

EXPECTED RESULTS/ANTICIPATED OUTCOME AND SIGNIFICANCE

This project aims to further the understanding of stream/riparian dynamics by demonstrating the importance of light as a limiting resource in heavily shaded streams and—primarily—how benthic invertebrate communities respond when light is added to such systems.

SIGNATURE LINE

Mentor: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Dana Warren (Department) Date

By signing, the mentor gives his/her assurance that he/she has read the proposal, sees it as a legitimate HC research project, and is willing to serve as your thesis advisor for the proposed project. If this project requires IRB approval, the mentor confirms eligibility as a Principal Investigator according to IRB criteria.