

Grant Report**Date:** August 9, 2018**Title:** Proactive development of mitigation tactics to combat the salamander-eating fungus**Project Leaders:** Molly Bletz & Douglas Woodhams

Background: The Appalachian woodlands are home to a vast diversity of salamanders. They don't hop or croak but silently wander through the leaf litter and dart about forest streams providing important ecosystem functions. Selected species of stream salamanders including, Blue Ridge Two-lined salamander (*Eurycea wilderae*) and Northern Two-lined salamander (*Eurycea bislineata*), are susceptible to *Batrachochytrium salamandrivorans*-induced mortality (Matt Gray unpub. data). Therefore, developing conservation strategies that enable salamander persistence within streams and forests is crucial. Our objective is to develop effective tools for combatting Bsal by testing field-viable disease mitigation tactics.

Progress report: In March 2018, sampling of *Eurycea wilderae* occurred at four locations in North Carolina (Table 1). We collected skin swabs for culturing bacteria and water samples for characterizing the micropredators in the stream environments. During this field work I met with one of North Carolina's state wildlife biologists to establish a collaboration that will allow us to receive 40 individual *E. wilderae* in September for testing of disease mitigation strategies. In August of 2018 sampling of *E. bislineata* occurred at one location in Massachusetts. In summer 2018 work has begun to culture skin bacteria from the collected samples. The next step will be testing these for their ability to inhibit Bsal in both growth assays and volatile organic compound assays. We will also test *Gammurus*, one of the most common micropredators in streams, for their ability to consume Bsal zoospores. In fall/winter 2018, we plan to complete the disease mitigation trials with these two at-risk salamander species.

Table 1. Sample size of *Eurycea* salamanders at site in North Carolina and Massachusetts.

LOCATION	NUMBER OF INDIVIDUALS
HARMON DEN (NC)	2
WOLF BRANCH (NC)	9
PINK BEDS (NC)	10
APP. STATE STREAM (NC)	10
MINNS SANCTUARY (MA)	10