



The effects of specific conductance on stream salamander occupancy and allochthony in southeastern Kentucky

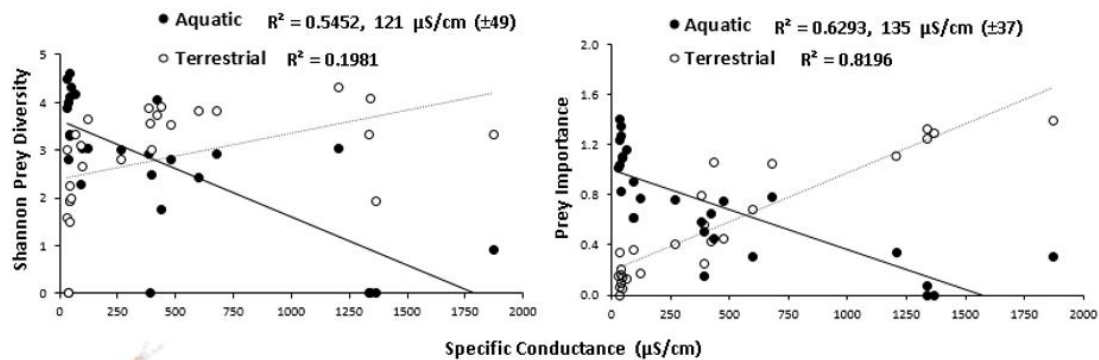
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November 2017 Update

We officially completed the sampling for this project during the second week of July! Since then, we've been working continuously to analyze the diet and occupancy data. We captured a total of 2432 salamanders, 1689 were larvae and 743 were adults. Our preliminary data analysis shows that occupancy rates and abundances decrease as conductivity increases. However, larval abundance estimates appear to be more strongly affected than in adults.

We non-lethally stomach flushed 1032 salamanders, 568 larvae and 464 adults. We had 100% gastric lavage survivorship and only 55 stomachs were empty. We identified and measured a total of 3541 prey items.

As conductivity increased, we found drastic declines in larval and adult aquatic prey occurrences within salamander diets, though a much stronger effect was found in larval individuals. In larvae, the aquatic Shannon prey diversity and prey importance values declined rapidly at thresholds less than 140 μS/cm. These findings support our hypothesis that diet is a potential mechanism for the observed declines in population persistence in MTR/VF streams.

Our next steps are to calculate thresholds for the occupancy and abundances of the salamanders across the conductivity gradient to determine if the larval and adult thresholds follow the same patterns observed in the diet results.



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