



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

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March 2017 Update

In early March, we used Geographic Information System (GIS) data to identify twelve new potential stream sites with moderate to high levels of mountain-top removal mining impact and elevated specific conductance values. We then visited each stream site and collected water samples. After we analyzed the water data, eight of the potential sites were found to have specific conductance values within our desired ranges. This brings our total number of selected sites to 30 streams!



We selected our stream sites within the main forested block of the University of Kentucky’s experimental forest (Robinson Forest) in Breathitt and Knott Counties, Kentucky. We also selected sites in the reclaimed Laurel Fork Surface Mines, in Breathitt County, and in Eastern Kentucky University’s Lilley Cornett Woods Appalachian Ecological Research Station in Letcher County. Overall, we now have 10 low specific conductivity (SC) or reference streams (16- 110 $\mu\text{S}/\text{cm}$), 10 medium SC streams (220-740 $\mu\text{S}/\text{cm}$), and 10 high SC streams (880-2400 $\mu\text{S}/\text{cm}$).

We spent spring break delineating survey reaches at all 30 stream sites, and in freezing and snowy conditions as well! We set up 10 meter transects, placing orange flags at 0, 5, and 10 meters. Each transect was selected to include a pool, run, and riffle section. We included these three attributes in order to ensure the availability of suitable habitat for multiple salamander species and all age classes.



Jake Hutton

Official sampling will begin the first week of April. There’s still much to be done before then, but we can’t wait to get out and catch more salamanders like this massive Seal Salamander.

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