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

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June 2017 Update

Since April 3rd, we have been sampling continuously, except for a few days of relentless rain. So far, we have captured and identified 1,896 salamanders from twelve species across our 30 stream sites. Additionally, we have non-lethally stomach flushed 922 salamanders and both measured and identified 3,219 prey items recovered from their stomachs. Nearly 70% of our water samples have already been processed in the Hydrology Lab in the Department of Forestry at the University of Kentucky and all samples are expected to be processed by the end of July. We have captured 897 salamanders at our reference stream sites, 788 at the moderately impacted sites, and 210 at mountain top removal mining with valley filled (MTR/VF) sites. Many of the MTR/VF stream sites look similar in color and poor water quality to the stream in the photograph to the left.

We developed a novel method to non-lethally stomach flush small larval salamanders (as small as 25 mm total length!). This new method is incredibly exciting for us, because we can now directly examine one of our major hypotheses that larval salamander occupancy and abundance is lower in streams affected by MTR/VF due to a significant reduction in aquatic prey availability. So far, we have recovered 1,643 prey items from 493 larval salamanders from six species, making this the most extensive larval salamander diet study to date.

The fourth and final sampling period began in mid-June and we only have 18 stream sites left to sample. We anticipate completing the last sampling period by the second week of July. We will start to analyze the data in August. Until then,

enjoy this lovely Black Mountain Salamander (*Desmognathus welteri*), unexpectedly found at one of our reference sites.

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