

YOUNG ECOLOGISTS

AFTER 2: All Washed Up: The effects of floods on cutthroat trout

Background: Research programs at Long Term Ecological Research Stations support ecological discovery on the influence of long term and large-scale phenomena. Each Data Nugget includes a brief background to a scientist and their study system along with a small, manageable dataset. Students are then given the scientist's hypothesis and must use the data to construct an argument as to whether the data does or does not support it. One of LTERs' priorities has been to provide resources for students of all ages and skill levels because they recognize that students are often overwhelmed with data interpretation.

VA Standards Addressed: Science (2018) LS.1, LS.7, LS.9

Instructional Strategy:

1. **Hook:** Recall the field investigation at Blandy where you conducted tests to determine if an organism's life needs were met. What were some of the biotic and abiotic things to consider? Generate a list of student responses. You may wish to refer to their field data sheets.
2. This research is based on a trout native to the Western U.S. but there are many correlations between the cutthroat trout and our native rainbow trout of Virginia. The issues of flooding, sediment loading and impacts on habitat and organism life needs to name a few.
3. Navigate on smart board or student devices to: <https://datanuggets.org/2019/01/all-washed-up/>
Ask: What are some possible threats to your organism? Generate a list of possible threats from student responses. If possible, sort to abiotic or biotic factors (or ask student to do so after the list is made.)
4. Wildlife biologists, climate change scientists, and other researchers are concerned about population declines and humans impacts on numerous populations of species and to habitats in general. Researchers, such as those at a long-term ecological station collect population data and study changes over time.
5. Use mathematical language.
6. Extension: Brainstorm ideas for long-term research projects at school (plant flower times over the years, tree growth patterns at school, or insect populations in the school yard.) Each year's class can contribute data to the project thus simulating the LTER work.

