School of Natural Resources and the Environment

Seminar Series: Spring 2023

REMOTE SENSING, POPULATION VIABILITY ANALYSIS, AND THE NEXT GENERATION OF NATIVE TROUT CONSERVATION

SPEAKER: Dan Dauwalter, Trout Unlimited

DATE: Wednesday, March 22nd

TIME: 3:00-4:00 pm

LOCATION: ENR2 S210 & Zoom

ABSTRACT:

Freshwater ecosystems are among the most threatened ecosystems in the world, and freshwater fishes may now be the most threatened group of vertebrates. This is particularly true for salmonid fishes. Globally, 73% of 67 trout and char species (family: Salmonidae) assessed under the International Union for the Conservation of Nature (IUCN) framework are threatened with extinction. This seminar will outline how Trout Unlimited and its partners are using remote sensing to understand the drivers of native trout distributions and abundance, effectiveness of conservation actions, and inform conservation planning. This includes leveraging the increased availability and accessibility of remote sensing data and new modeling approaches to estimate the viability of multiple trout populations simultaneously.

Application of this new approach – termed Multiple Population Viability Analysis (MPVA) - to Lahontan Cutthroat Trout Oncorhynchus clarkii henshawi allowed for estimation of extinction risk across the entire range of the species while facilitating an understanding of how environmental factors and non-native species affect viability, which can be explored through a decision support tool developed to aid conservation planning. The increased availability of remote sensing data, new Bayesian modeling approaches, and their integration into decision support tools is already informing the next generation of native trout conservation, and shows promise for stemming the decline of salmonids globally.