PhD Opportunity: Comparative riverscape genomics of native and nonnative trout in highly disturbed riverscapes

The Genomics, Ecology, and Modeling for Conservation Lab at North Dakota State University, led by Travis Seaborn, is recruiting for one position to join our team working our recently funded Bipartisan Infrastructure Law Ecosystem Restoration Research Project. This project spans collaborators across North Dakota State University, Idaho State University, and multiple U.S. Forest Service Stations. **Anticipated start date: May 2024**. Stiped ~$25,000.

The overall project will advance our ability to efficiently detect, prevent, and eradicate invasive species from highly modified riverscapes. Our research team will do this by leveraging multidisciplinary tools to 1) efficiently characterize species' distributions, 2) identify barriers to gene flow, 3) determine the role that land stewards' actions may play in maintaining these barriers, and 4) simulate the efficacy of different management strategies for removing and mitigating invasive species. The Teton and Salt River basins are similarly impacted by high levels of human modification, invasion of multiple non-native salmonid species and are historic strongholds for the endemic Yellowstone cutthroat trout. These watersheds have headwaters in national forests that maintain more pristine intact habitat but have significant down river habitat modification and disturbance. They serve as ideal case study systems for building tools for dealing with invasive species that can be applied to other watersheds of interest. The combination of project's results will allow us to identify key locations for restoration to improve overall habitat quality for endemic species and remove strongholds for invasive species.

The primary goals of this position include:

1. Identify how landscape features, geographic distance, restoration activities and environmental stressors promote or limit gene flow among the four salmonid species in the basins.
2. Incorporate ecological, genetic, and social results in an integrative model to make predictions and identify preventative measures for future invasions in the river basins.

To apply: Please email travis.seaborn@ndsu.edu a letter of interest, which should include an explanation of fit and past relevant experience, and CV by Nov 27th.