Title: Wrangling and Preparing PIT Tag Data using PITcleanr

Authors:

Kevin See (WDFW)

Ryan Kinzer (Nez Perce)

Mike Ackerman (Nez Perce)

Abstract:

Have you ever found yourself using PIT tags to study fish survival and movement, only to become overwhelmed by the sheer volume of tag detections and the challenges of organizing and analyzing the data? PIT tag data can simultaneously be full of valuable information, yet overwhelming to analyze. A single tag may trigger numerous detections, often resulting in tens and sometimes hundreds of redundant records. Furthermore, determining the direction and path of a fish’s movement based on tag detections requires knowledge of how sites are situated relative to each other along a stream network, which can be complex to achieve. PITcleanr is a freely available R package thoughtfully designed to assist biologists in managing PIT tag data. It streamlines the process of importing data into R, condensing it, introducing directionality, applying necessary filters, and generally preparing the data for further analysis, such as converting it into capture history matrices. In addition, PITcleanr contains functions to map sites on a stream network, helping researchers build tables and figures describing the connectivity and upstream/downstream relationships between sites and the fish being studied. This talk and subsequent workshop will introduce the need for PIT tag data processing tools and much of the functionality of PITcleanr through a series of examples.