The Central Valley Project Improvement Act (CVPIA) provides funds to aid the San Joaquin Basin Steelhead Collaborative and initiate a Steelhead Life-Cycle Monitoring Program. This dataset includes observations of O. mykiss in the Stanislaus River during the steelhead spawning migration period, September through May. Fish are observed at an Alaskan-style weir outfitted with a VAKI Riverwatcher fish counting device. The counting device provides visual records of upstream passing individuals that are later reviewed by an experienced biologist. During times when the counting device is offline, a continuous video feed is reviewed to provide counts and identifications of passing fish. The length of passing fish is estimated using a known body depth to length ratio derived from individuals trapped and measured at the weir. The weir also has a trap box that, when closed, allows investigators to physically capture fish for measurements, biological sample collection, and injection of a PIT tag. There is also a PIT tag antenna affixed to the weir allowing detection of PIT tagged fish. There are three datasets currently associated with this project, 1) passage data for all O. mykiss from 2005 through 2020, 2) O. mykiss that were captured and processed from the trap, and 3) PIT tag detections from the PIT antenna.