Estimating 2013 Steelhead Out-migrants at Mossdale through the use of acoustic data

Gretchen Murphey

California Department of Fish and Wildlife

Gretchen.Murphey@wildlife.ca.gov

 The Mossdale Trawl is a Kodiak trawl operated by the California Department of Fish and Wildlife each spring to estimate the number of juvenile Chinook salmon migrating out of the San Joaquin Basin. The Mossdale trawl also captures wild out-migrating Steelhead (*Oncorhynchus mykiss*) but until 2012 population estimates could not be calculated. Steelhead population estimates can now be calculated by repurposing equations used to generate the Chinook Vulnerability Expansion Estimate (Single Year Population Ratio Method). This estimate requires known numbers of “study” fish released coupled with the number of “study” fish captured which allows a vulnerability ratio to be determined. This ratio is then applied to the number of wild fish captured to estimate the population. For Steelhead we generated a list of acoustic tagged fish which were in the area for each day while the trawl was operating, as well as a list of how many acoustically tagged fish were captured by the trawl each day. This ratio was then applied to the number of wild Steelhead caught so a season wide estimate could be calculated. Although calculations for the estimate are relatively straightforward the level of detail associated with acoustic data created challenges.