Yuba River

Methods Overview

Adult Upstream

Yuba River operates a video monitoring system near Daguerre Dam with two ladders (“North” and “South”). This dataset is considered to be a census for spring run chinook because mostly all spawn upstream of Daguerre Dam. Passage estimates using the adult upstream data have been modeled for 2004 - 2021 by Brian Poxon and Paul Bratovich. The modeling approach involves determining the run and interpolating for missing data.

Run differentiation is performed by splitting the dataset into three components (early migrating spring run, late migrating spring run, and fall run) and conducting an iterative analysis to find the “differentiating date” between spring and run as outlined in Poxon and Bratovich (2020). A GAM was used to interpolate missing values (i.e. when the video system was not working or during high flows) but could not be applied for 2016-2017 due to a high number of outages. Adipose fin clip rates were recorded as raw observations but are likely underestimating the contribution of hatchery fish to the population. Additionally, note that the north ladder was closed from February - September 2019.

Yuba River consistently collects date, time, count, adipose fin clip status, passage direction (up or down), ladder, and hours and uses a statistical analysis to assign run.

Holding

Holding surveys are not conducted on Yuba River.

Redd

Yuba River has redd survey data from 2009-2021. 2009-2011 data were collected at all reaches, whereas other years were spatially limited and focused on gravel augmentation near Englebright Dam. Using solely Englebright Dam data for all spawning is not recommended.

Yuba River collects date, latitude, longitude, velocity, year, species, run, depth (in meters), redd ID, and number of fish on redds.

Carcass

Yuba River has carcass data from 2009-2022 though the methodology is not consistent over all years. In some years carcass surveys were not performed above Daguerre Point Dam because the purpose of surveys shifted toward biometric carcass surveys (with an emphasis on age structure/fecundity). There is anecdotal support for low prespawn mortality as survey crews didn’t encounter dead salmon and didn’t hear about it from fishermen.

Annual Adult Counts

Upstream passage counts exceed redd counts by several orders of magnitude, though this discrepancy is likely due to spatial limitations of the data. Carcass counts are greater than redd counts though less than upstream passage counts which may help determine prespawn mortality.