Adult Upstream

Objective: Estimate spring-run spawning population

Type: VAKI Riverwatcher

Location: Daguerre Dam

Times of operation: Year-round

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 – 2023. The modeling approach involves determining the run and interpolating for missing data.

Data is available in tables following sequential QA/QC processes and modeling:

Instantaneous passage records: data in this file form the base dataset for analyses and methodologies identified in Poxon and Bratovich (2020).

Uncorrected daily passage: data in this file represent the aggregation of the instantaneous records in instantaneous passage records to net upstream daily passage counts. Data undergo the count correction analysis presented in Poxon & Bratovich (2020). The results of the count correction analysis form the input to the run differentiation analysis.

Corrected daily passage: data in this file are corrected for VAKI operational outages and contain run differentiated daily net Chinook salmon passage estimates. Data in this file represent the output (results) from the count correction and run differentiation analyses presented in Poxon and Bratovich (2020). Please see below for important notes regarding biological years 2016, 2017, and 2019.

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). The Generalized Additive Model (GAM) used to interpolate missing values (i.e. when the video system was not working or during high flows) could not be applied for 2016-2017 due to a high number of outages and the north ladder was closed from February - September 2019, both of which are important context for data from those years.

The 2016 and 2017 annual time series were deemed inappropriate for count correction and run separation analyses due to long periods of VAKI Riverwatcher™ system outages that resulted in incomplete datasets for both years. No estimates (run-differentiated or overall) are possible for these years. The total number of Chinook salmon for these years represent raw counts as affected by VAKI Riverwatcher™ system outages, and do not represent estimated annual abundances.

Additionally, run-type differentiation was not possible for biological year 2019 due to an extended closure (February 13, 2019 through September 10, 2019) of the DPD North Ladder, which fundamentally altered the temporal patterns of passage at DPD on which the run differentiation analysis is based. As a result, the only possible annual abundance estimate for the 2019 annual time series is Total Chinook Salmon. Further analyses that took place due to the 2019 closure are further detailed in the appendix attached to the package [insert title].

Resources

Poxon, B. and Bratovich, P. 2020. Lower Yuba River Vaki Riverwatcher Chinook Salmon Passage and Run Differentiation Analyses. Prepared by HDR for Yuba Water Agency.