Salmonid Population Data Description, Use, and Limitations

Salmonid Population Data (tabular file, CMP2021)

Description and Uses

The California Monitoring Plan (CMP) salmonid monitoring data provides a summary of salmonid population metrics and corresponding authors or sources. The file was updated during the fall and winter of 2021 and includes select data from 1978 through 2021 but is not considered comprehensive. The population metrics summarized are focused on the viable salmonid population (VSP) key characteristics: abundance, productivity, and spatial structure. Diversity metrics are excluded given limited reporting of such metrics and the difficultly to standardize the information. Diversity metrics and more detailed information may be captured in the annual reports (when available). The dataset includes monitoring projects in California coastal watersheds and some coverage of monitoring projects within the Trinity River and Klamath River basins.

Users are advised to filter all necessary and appropriate fields to extract values of a specific time series data set of interest. For example, some Species-Population combinations may have more than one value for a given Brood Year and Metric. Careful inspection of Sample method and Estimation method and other relevant fields is required to subset Values of the same time series dataset. The data user is advised to refer to the annual reports cited in the Source field for additional details regarding the Estimation method and the metrics captured. The population metrics summarized may be regarded as spatially limited, temporally limited, and not considered a complete estimate for the population being described. Several fields are available to assist with this determination: Spatially limited (Yes or No), Temporally limited (Yes or No), and Full population estimate (Yes or No).

Limitations

This dataset does not include data for all existing or past monitoring programs. Reach scale data, California Central Valley data, and records of individual fish or tag numbers are NOT included in this file. The funding sources supporting the monitoring vary and some of the population data captured are not intended to follow the California Monitoring Plan (CMP) guidance documents. Brood year designations are described in the metadata and used for the purpose of standardization across watersheds and monitoring areas. In some cases, these brood year designations conflict with information provided in the annual monitoring reports. The actual brood year may span more than one year (i.e., 2017-2018). The term "steelhead" is used in the Species field but does confirm an anadromous life history. "Steelhead" values and estimates should be conservatively interpreted as *Oncorhynchus mykiss* (Steelhead or rainbow trout) and further investigated using the Source field in each record. It is not recommended for users to extract data and make inferences without appropriately reviewing the associated source document(s). While records in the data may contain vital information in Notes, there is no reasonable way to capture and track the necessary nuances to all datasets necessary for appropriate interpretation of the data.

Metadata Table

Metadata are a very important component of this dataset and critical to help inform interpretation and use of the data. A table that describes the attributes of each field (column) is provided by Table 1.

Update frequency

Annual updates and changes to this dataset will be completed each Fall. If you have identified errors within the existing dataset or have data that you would like included in this dataset for the next update, please contact Robyn Bilski (robyn.bilski@wildlife.ca.gov).

Disclaimer

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Table 1. Descriptions of the attributes of each column (field) in the population dataset.

Column Name	Column Description
Watershed	Name of the watershed or region that contains the population.
Population	Name of the watershed or sub watershed that the point estimate parameters describe (i.e., Olema Creek watershed within the Lagunitas Creek watershed when the point estimate describes just the Olema Creek watershed).
Species	The fish species that the population and point estimate parameters describe [Coho salmon, Chinook salmon, steelhead].
Life Stage	Life stage(s) that the metric describes. Usually designated by PI in report or communication. Use of size criteria and size criteria definitions may vary between years and monitoring programs. Parr, smolt, adult, sub-adult, Age 1+, Age 2+, YOY, etc..
Origin	Origin of the species described. Used PI designation when available. When not available, a mixed designation is used when a hatchery/broodstock program exists in the watershed or if hatchery strays have been consistently reported. A natural designation is used when there is no hatchery/broodstock program in the watershed and hatchery strays are not reported.
Run designation	Run designation of the population, if any [fall, late-fall, spring, summer, winter].
Brood Year	Currently only designated for adult salmonids. General designations follow this assignment structure: Coho, Fall Chinook salmon, and Coastal Chinook salmon = 1st year of survey season (i.e., 2018 of 2018-2019), Spring Chinook salmon = year of survey season (i.e., 2018 of 2018), Steelhead (winter or not designated) = 2nd year of survey season (i.e., 2019 of 2018-2019).
Survey season	Year(s) over which the surveys took place. For adults, a 2-year spawning season designation based on the fall through the late winter/spring period [i.e., 2018-2019 (2018=fall, 2019= late winter/spring)].
Sample method	Field method(s) used to collect the point estimate data [video, DIDSON, spawner survey, carcass survey, redd survey, weir, rotary screw trap, fyke, ect.]
Estimation method	Description of the estimation method that is used to derive the Point estimate [fish/redd expanded estimate, expanded redd estimate, redd census, female/redd estimate, live-fish mark-recapture, carcass mark-recapture, AUC, video count, DIDSON count, Adjusted DIDSON count, weir count, trap count, ect].
Metric	Description of the metric that is entered in the Value field [Adult abundance, Smolt abundance, Adult count, Redd count, Redd abundance, Smolt-Adult Return rate, Occupancy, Freshwater Survival, ect.].
Population parameter	The viable salmonid population (VSP) characteristic [abundance, productivity, spatial structure, and diversity] that is expressed by the summarized population metric.
Full population estimate	Indicates whether the point estimate represents a full population estimate or not [Y, N]. Criteria for a yes (Y) determination include: (1) the point estimate must not be spatially limited (N) or temporally limited (N), and (2) the estimation method must be appropriately applied.
Temporally limited	Indicates whether the population point estimate is temporally limited or not [Y, N]. Criteria for a yes (Y) determination include: (1) the survey period does not cover the full-time frame (spawning period, outmigration period, rearing period, ect.) to accurately estimate the population parameter, or (2) survey frequency is limited, or (3) the peak timing is missed due to environmental, staffing, or other constraints.

Column Name	Column Description
Spatially limited	Indicates whether the population point estimate is spatially limited or not [Y, N]. Criteria for a yes (Y) determination include: (1) the survey extent does not consider (sample from or cover) all of the accessible habitat for the population/species/life stage
Value	estimate, count, rate, or other value that was reported from the source identified in the Source field.
X95 lower CI	Lower 95% confidence interval of the value/point estimate (if applicable).
X95 upper CI	Upper 95% confidence interval of the value/point estimate (if applicable).
Source	Citation of the latest report, publication, website, or contact that identifies the point estimate and corresponding information.
Notes	Details about temporal and/or spatial sampling/limitations, species assignment methods for unknown redds, details about AUC methods (i.e., residence times, observer efficiency), ect.
ESU_DPS	Evolutionarily Significant Unit (ESU) or Distinct Population Segment (DPS) of the population and species being described [California Coastal, SONCC, Central California, Northern California, South-Central California, Southern California, ect.].
CDFW region	CDFW Region(s) where the monitoring effort took place.
GEO_ID_POLY	Numeric identifier that links to the spatial data representing the approximate watershed area that was sampled or subsampled for the summarized metric.
GEO_ID_PT	Numeric identifier that links to the spatial data representing the approximate point location or centroid of where sampling or subsampling took place.