CDFW GrandTab, California Central Valley Chinook Population Database

Data Courtesy of CDFW via CalFish

Select Output Format

(•) Barchart w/Table ( ) Download CSV Only

Select Species-Run, Spawning Type

Chinook, Winter	In-River
Chinook, Spring	Hatchery
Chinook, Fall	All
Chinook, Late-Fall	

Select Spawning Location

(•) Spawning Location by Water Body Area ( ) Spawning Locations by Diversity Group [Map]

Battle Creek - Upstream of CNFH, Sacramento

Options

[ ] Rolling 3 Year Geometric Mean
[ ] Color Vision Deficiency (CVD) colors

Submit Query Reset

Query Notes & Resources

- As of 1 August 2022: Data presented through this query is based on GrandTab 2022.07.20. California Central Valley Chinook Population Database Report "GrandTab" , CDFW via CalFish
- As of 28 September 2021: Data presented through this query is based on GrandTab 2021.06.30. California Central Valley Chinook Population Database Report "GrandTab" , CDFW via CalFish
- As of 10 September 2020: Data presented through this query is based on GrandTab 2020.05.22. California Central Valley Chinook Population Database Report "GrandTab" , CDFW via CalFish
- 10 October 2019: Modified Year presented in results from start year of annual monitoring periods to end year of annual monitoring periods (spawn year).
- As of 10 May 2019: Data presented through this query is based on GrandTab 2019.05.07. California Central Valley Chinook Population Database Report "GrandTab" , CDFW via CalFish
- As of 27 April 2018: Data presented through this query is based on GrandTab 2018.04.09. California Central Valley Chinook Population Database Report "GrandTab" , CDFW via CalFish
- 30 January 2018: For multiple populations, the SacPAS version of the CDFW GrandTab dataset was in error 30 May 2017 - 29 January 2018. The dataset was reviewed and all identified errors corrected.
- Diversity Groups based on the California Central Valley Salmon & Steelhead Recovery Plan , NOAA Fisheries West Coast Region
  - Map , Appendix A Central Valley Watershed Profiles
- NOAA Five-Year Status Reports, California Central Valley

- Summary and Evaluation of Central Valley Spring-Run Chinook Salmon Evolutionarily Significant Unit (ESU)
- Summary and Evaluation of Sacramento River winter-run Chinook Salmon Evolutionarily Significant Unit (ESU)

Azat, J. 2022. GrandTab 2022.07.20 California Central Valley Chinook Population Database Report. California Department of Fish and Wildlife. Available from https://www.calfish.org/ProgramsData/Species/CDFWAnadromousResourceAssessment.aspx

Direct quote from GrandTab 2022.07.20

California Central Valley Chinook Population Database Report

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Fisheries Branch
Anadromous Fisheries Conservation and Management Program
California Central Valley
Sacramento and San Joaquin River Systems
Chinook Salmon Escapement
Hatcheries and Natural Areas

The Sacramento - San Joaquin River system in California?s Central Valley is the principal producer of Chinook Salmon, Oncorhynchus tshawytscha, caught in California's ocean fisheries and contributes appreciably to Chinook Salmon harvest off the coasts of Oregon and Washington. This system also supports one of the largest river sport fisheries for Chinook Salmon on the Pacific Coast in the Sacramento River. Chinook Salmon in the Central Valley are comprised of four runs: fall run, late-fall run, winter run, and spring run. Run designation is based primarily on the season during which adult Chinook returning from the Pacific Ocean enter fresh water on their upstream spawning migration. The four Central Valley runs are distinguished as follows:

1) Late-fall run: This run of salmon spawns mainly in the upper Sacramento River and its tributaries near and upstream of Red Bluff, California. The fish arrive in this area in early November through February, with spawning occurring from January through mid-April. Adults of this run are usually larger in physical size than fall- and winter-run Chinook Salmon spawning in the same area.
2) Winter run: This run of salmon spawns almost entirely in the upper Sacramento River and its tributaries upstream of Red Bluff, arriving there as early as December, with spawning occurring from April through August.
3) Spring run: Once widespread in Central Valley streams and rivers, this run of Chinook Salmon has been extirpated from most of the streams in which dam construction has blocked access to upper watershed spawning and rearing habitat. Spring-run salmon return to the system from the ocean in late January through August; early arrivals to their natal streams oversummer in holding pools. Spawning occurs from mid-August through October.
4) Fall run: These are presently the most abundant and widely distributed salmon in the Central Valley. They return from the ocean from June through November and spawn from early October through late December.

Currently, both the ocean and river fisheries in California are managed to focus exploitation on Central Valley fall-run Chinook Salmon. The fisheries are largely possible as the result of a high level of hatchery production, both for mitigation and population supplementation. There is a small sport fishery for late-fall-run Chinook Salmon in the

Sacramento River. Sacramento River winter-run Chinook are listed as endangered under both the California Endangered Species Act (CESA) and U.S. Endangered Species Act (ESA). Central Valley spring-run Chinook Salmon are listed as threatened under both the CESA and the ESA. Given their protected status, fisheries management of Chinook Salmon in California is designed to avoid incidental harvest of Central Valley winter-run and spring-run Chinook Salmon.

Escapement Monitoring and Reporting: California Department of Fish and Wildlife (CDFW) and various partners conduct escapement monitoring surveys for Central Valley Chinook Salmon annually. The surveys cover the major natural spawning areas, and many minor ones, throughout the Sacramento-San Joaquin River system. Estimates are made using a variety of methods, depending upon the setting and conditions for making the most accurate estimate, given available resources. Methods include mark-recapture, or carcass, surveys, video counts at dams and in small tributaries, direct observation counts both on-ground and by snorkeling, and expanded redd counts conducted both from the ground and from the air. Counts are also made at all five anadromous hatcheries and rearing facilities in the Central Valley. Partners providing estimates and counts include CDFW, U.S. Fish and Wildlife Service, California Department of Water Resources, East Bay Municipal Utilities District, U.S. Bureau of Reclamation, Lower Yuba River Management Team, and the Fisheries Foundation of California.

CDFW compiles the annual escapement estimates and counts in the GrandTab database report. GrandTab includes the annual escapement estimate for each of the four Central Valley runs of Chinook Salmon. The numbers for each run are organized by major basin (Sacramento and San Joaquin) and then sub-basin (tributary streams and rivers) with natural spawning areas and hatcheries represented. The numbers for each run are also totaled by major basin and for the Central Valley as a whole. The fall run has been monitored and reported in GrandTab since 1952, spring run since 1960, and late-fall and winter runs since 1970.

What numbers in GrandTab represent: Estimates of escapement in GrandTab represent the number of adult Chinook Salmon that literally "escaped" the ocean and river fisheries and successfully migrated upstream to a natural spawning area or hatchery where their number is then estimated or counted. While escapement estimates represent the number of adult salmon available for spawning, these numbers may not necessarily represent the actual number of salmon that ultimately succeed in spawning. Pre-spawning mortality can result in a significant difference in the number of adult salmon that escaped to a natural spawning area and the number which eventually spawn. While pre-spawning mortality occurs in all runs to varying degrees and is often a very small proportion of the total escapement, factors such as low stream flows and high water temperatures may result in significant levels of pre-spawning mortality.

Central Valley spring-run Chinook Salmon are particularly susceptible to high levels of pre-spawning mortality, especially under drought conditions, because of their protracted summer holding period in natural spawning areas prior to spawning during late summer-early fall. As a result, the escapement numbers in GrandTab may not represent a good approximation of the number of adult salmon that actually spawned in a given stream or river. This may be an important consideration when using GrandTab data for investigating Central Valley Chinook Salmon stock-recruitment relationships, for developing production models, or for assessing spawning habitat quality. While unusual conditions and changes in methodology are noted in GrandTab, escapement estimates provided in GrandTab cannot account for what happens with the fish or their progeny beyond the point in time at which escapement is estimated. When uncertain, users of GrandTab data are advised to consult the full escapement report that may be available in conjunction with a given escapement estimate.

Acknowledgement: Thanks to Dick Painter (CDFW retired), Bob Kano (CDFW retired), and Doug Killam (CDFW) for their work designing and maintaining GrandTab in its earlier forms. Thanks to all the cooperating partner entities that provide escapement estimates and counts in support of GrandTab.

SacPAS: Central Valley Prediction & Assessment of Salmon, University of Washington, Columbia Basin Research, www.cbr.washington.edu/sacramento/

Friday, 12-Aug-2022 10:29:49 PDT