

SacPas Fish Model: Definitions of water year types for purposes of grouping redds in the SacPAS Fish Model

8 September 2023

The distinction between water year types is based on <https://cdec.water.ca.gov/reportapp/javareports?name=WSIHIST> for the Sacramento Drainage in California.

Historical redds for winter run, late-fall run and fall run Chinook can be combined according to these criteria: “Wet”, “Above Normal”, “Near Normal”, “Dry”, and “Critical”.

Water Year	Index	Type	Water Year	Index	Type
2001	5.9	Dry	2012	6.9	Below Normal
2002	6.5	Dry	2013	5.8	Dry
2003	8.0	Above Normal	2014	4.0	Critical
2004	7.7	Below Normal	2015	4.0	Critical
2005	7.4	Below Normal	2016	7.1	Below Normal
2006	13.0	Wet	2017	14.9	Wet
2007	6.2	Dry	2018	7.2	Below Normal
2008	5.4	Critical	2019	10.2	Wet
2009	5.5	Dry	2020	6.0	Dry
2010	6.9	Below Normal	2021	4.0	Critical
2011	10.0	Wet	2022	4.5	Critical

The Water Year extends from October 1 in the previous calendar year to September 30. Depending on the beginning of the spawning season, the water year and calendar year may differ. The run-year designations correspond to the month of first spawning for the stock, regardless of its peak. For Winter-run Chinook, the calendar-year and water-year match.

Fall and Late-Fall runs are different. E.g. Late-Fall Chinook began spawning in December 2020 as confirmed with an aerial survey. This corresponds to water year 2021 (a “critical” year). Multi-year groupings of redds that include “critical” years would have this one included. Note: For calendar year 2021 (water year 2022) , there were no surveys for Fall and Late-Fall Chinook.

Chinook population	Season begins in calendar year	Applicable water year
Winter Run	May	same
Fall Run	November	next year
Late-Fall	December	next year

Compositions available:

Count of years included:

Critical	5
Dry	6
Below Normal	6
Above Normal	1
Wet	4
Critical, or Dry	11
Critical, Dry, or Below Normal	17
Above Normal, or Wet	5