

2025 Jenny Creek Adult Salmon Studies Final Report



Prepared by:
Domenic Giudice and Jonathan Kang
California Department of Fish and Wildlife
Klamath River Project
1625 S. Main Street
Yreka, CA 96097
domenic.giudice@wildlife.ca.gov

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Abstract

A total of **211** fall run Chinook Salmon (*Oncorhynchus tshawytscha*) were estimated to have entered Jenny Creek during the 2025 spawning season. An underwater video camera was operated in the flume of the Jenny Creek Fish Counting Facility (JCFCF) 24 hours a day, seven days a week, from September 19, 2025, to December 15, 2025. The first Chinook Salmon was observed on September 19, 2025, and the last Chinook Salmon on November 3, 2025. Klamath River Project (KRP) staff collected 107 fish to observe and record biological metrics and to determine the presence of hatchery produced fish.

Chinook Salmon carcasses that were sampled as weir wash-backs and collected during spawning ground surveys were used to describe characteristics of the run. KRP staff processed 10 carcasses as weir wash-backs in the 2025 season and 97 carcasses from spawning ground surveys were processed for samples. The run was comprised of 2 grilse (0.85%), and 209 adults (99.15%). Grilse were determined by scale-based aging. The sex composition of the run, based on 97 spawning ground survey carcasses sampled, was 67.0% (65) female and 33.0% (32) male. 21 adipose fin clipped (ad-clipped) fish (indicating hatchery origin) were encountered as wash-backs, an estimate of 64 (30.5%) hatchery origin fish entered Jenny Creek.

Zero Coho Salmon (*Oncorhynchus kisutch*) were estimated to have entered Jenny Creek prior to removal of the weir on December 15, 2025. The JCFCF operated from September 19, 2025 through December 15, 2025 and no Coho Salmon were observed during the video period. Due to lack of video passage and an estimate of zero Coho Salmon no assessment was made on age proportions and no carcasses were recovered, so no hatchery origin proportions were calculated.

One steelhead (*Oncorhynchus mykiss*) with a fork length (FL) greater than or equal to 40.64 cm (16 inches) was observed passing through the JCFCF on October 15, 2025.

Introduction

The KRP of the California Department of Fish and Wildlife (CDFW) is responsible, in cooperation with other State, federal and tribal partners, for estimating the number of Chinook Salmon and Coho Salmon that return to the Klamath River Basin, excluding the Trinity River Basin, each year. In addition to escapement, objectives include the determination of run timing, spawning distribution, length frequency distribution, sex ratio, and spawn condition for Chinook Salmon and Coho Salmon in Jenny Creek. Scales and coded wire tags are collected to determine the age composition and hatchery contribution to each annual run.

To achieve these tasks the KRP employs several techniques which include a creel survey of sport fishing effort and harvest, recovery of fish returning to Fall Creek Hatchery (FCH), completion of cooperative spawning ground surveys in major tributary streams and rivers, and operation of video fish counting weirs on the Shasta River, Scott River, Bogus Creek, Jenny Creek and Shovel Creek. This report summarizes observations of salmonids spawning in natural areas of Jenny Creek.

In 2024 four dams were removed on the Klamath River restoring access for anadromous fish up to and beyond the California-Oregon state line. Jenny Creek is a tributary to the Klamath River located approximately 8.28 river kilometers (rkm) upstream of the former Iron Gate Dam site. Jenny Creek has a large watershed that extends beyond the California Oregon state line, however only the lowermost 6 rkm were surveyed because there is a large waterfall at rkm 6 that prevents adult anadromous fish from migrating upstream of it.

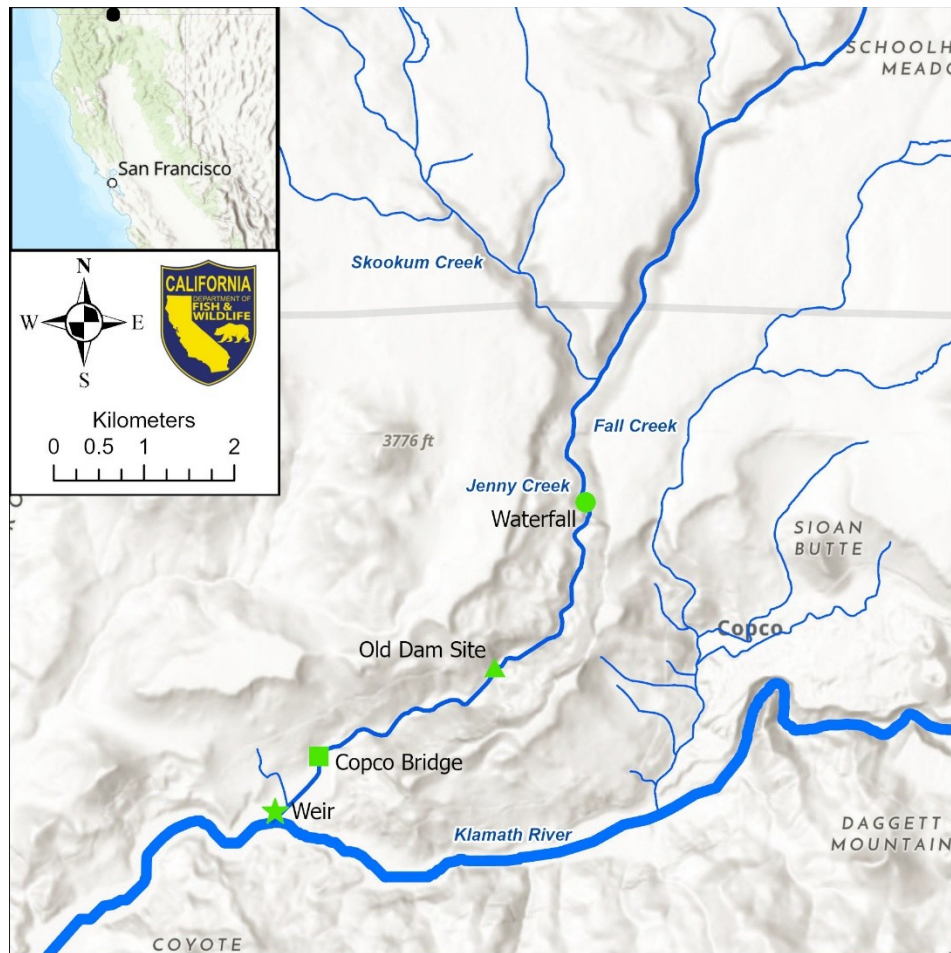


Figure 1: A map of Jenny Creek.

METHODS

Monitoring of the salmon run within Jenny Creek during the 2025 season was accomplished through three primary efforts: operation of a video weir, spawning ground surveys, and collection of data from salmon carcasses that become impinged on the weir panels as they float downstream (wash-backs).

VIDEO WEIR

The JCFCF consists of a video camera, counting flume and an Alaska style weir strategically placed in a diagonal across the river channel (Figure 2). Fish immigrating upstream are directed through a narrow flume, which passes in front of an underwater video camera. A SplashCam Delta Vision* black and white underwater camera with a 3.6 mm wide angle lens was used since 2008 for capturing images, and a Speco Technologies D8VN¹ digital video recorder (DVR).



Figure 2: A photo of the Jenny Creek fish counting facility

¹ Use of product names in this report does not imply endorsement by CDFW.

The weir and video camera were installed and recording began on September 19, 2025. KRP staff performed routine daily maintenance of the JCFCF. This included inspecting the video system to ensure that everything was operating correctly, cleaning weir panels, making any necessary repairs, and processing any wash-back carcasses present. Every weekday the DVR was removed and replaced with another drive. All recording equipment was secured in locked enclosures and access to the site was controlled through a locked gate located on private property.

DVRs with stored video data were immediately returned to the office where each was reviewed by staff in the video lab. During each review, staff recorded the date, time (hour:min:sec), and species of each fish observed. In addition, staff noted the presence of adipose fin-clipped (ad-clipped) fish and recorded the presence of lamprey or any other distinguishable marks that were visible on the footage. Fish were counted as downstream migrants if they entered the flume from the upstream end and exited at the downstream end. If fish entered the flume but backed down without exiting on the upstream end, they were not counted.

Fish for which positive identification could not be made were recorded as “unknown” species. These fish were later reviewed and if identification could not have been determined, the fish were assigned a species based on the daily species proportion of known fish. During video outages passage was estimated based on average passage in the outage time frame from the 3 days before and after the event. All data was then entered into files on a computer, and each data file was edited with corrections made by a second individual prior to commencement of data analysis.

WASH-BACK CARCASSES

All salmon carcasses that drifted downstream and became impinged on the weir panels were recovered. All Chinook Salmon carcasses were processed. Data collected on these wash-back carcasses included FL, sex, marks, tags, and the presence of fin clips. Scales were removed from the left side of each carcass at a location posterior to the dorsal fin just above the lateral line whenever possible. Each female carcass was also examined to determine whether successful spawning had occurred. Spawning status was defined as un-spawned (many eggs remaining in the body) or spawned (few or no eggs remaining). In addition to the systematically sampled Chinook Salmon carcasses, all carcasses were examined for ad-clips, and heads were collected from all ad-clipped Chinook Salmon carcasses. All Coho Salmon and steelhead carcasses were processed and sampled for biodata. All carcasses were cut in half to prevent sample duplication and returned to the river downstream of the weir.

Spawning ground surveys (SGS) were conducted by a two-person team that walked downstream through a stretch of river (usually 2-3 kilometers). During the surveys, crews were looking for and recording observations of live adult salmon and redds, including marking redd locations on a GPS. Crews were also collecting all adult salmon carcasses to determine sex and length information, as well as collect biologic samples.

Table 1: Spawning Ground Survey reach descriptions

Reach #	Downstream point	Upstream Point	Distance in KM
1	Confluence with Klamath	Weir	0.19
2	Weir	Copco Bridge	1.02
3	Copco Bridge	Old Dam Site	2.48
4	Old Dam Site	Waterfall	2.38

CHINOOK SALMON HATCHERY INFLUENCE

All carcasses handled were inspected for ad-clips denoting that those fish have coded wire tags (CWTs) in their snouts and were of hatchery origin. Hatchery influence was calculated by expanding the known CWTs by the production multiplier from RMPC ([Regional Mark Processing Center](#) which is a web-based portal that contains CWT mark and release information) and expanding that sum by the sampling expansion (number of fish checked for ad-clips/total run estimate).

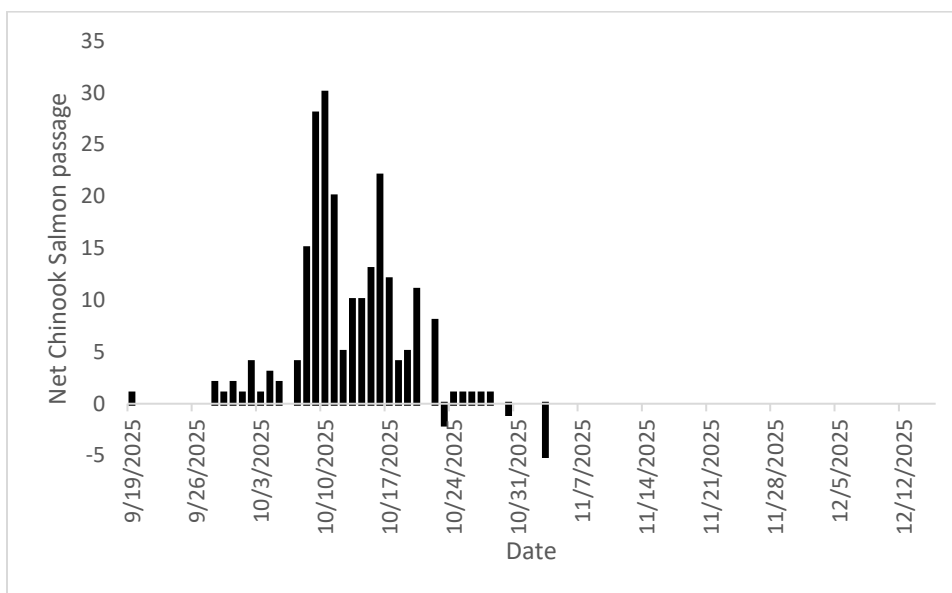
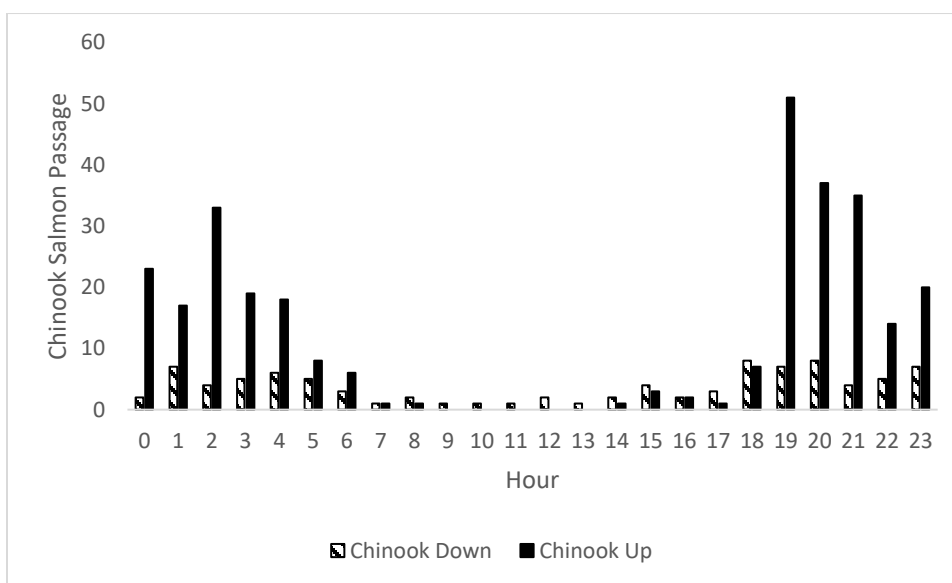
RESULTS

CHINOOK SALMON VIDEO DATA

A net total of 210 Chinook Salmon were estimated to have migrated through the JCFCF during the 2025 season. The Chinook Salmon video estimate of 210 was derived by subtracting the number of downstream observations (91) from the number of upstream observations (297) which yields 206 and adding in an estimated 4 Chinook Salmon that were estimated to have passed the video station while the JCFCF was removed for storms. The JCFCF was removed from October 24, 2025, through October 29, 2025, and again from November 4, 2025, through November 18, 2025, for an outage total of 17 days. The average daily net passage of each species for 3 days before and after each outage was used to estimate passage during the outage (Table 2). One Chinook Salmon carcass was recovered below the JCFCF, and it was added to the total. No redds were observed below the JCFCF so there was no redd expansion added to the total. Adding the video total (206) plus the outage estimate (4) plus the carcass count downstream of the JCFCF (1) and the expanded redd estimate from below the JCFCF (0) yields an estimate of **211** Chinook Salmon in Jenny Creek. Most of the run (54.3%) was observed between September 19, 2025, and October 11, 2025. The peak day of the run was October 10, 2025, with a net passage of 30 (14.3%) Chinook Salmon. The majority of Chinook Salmon (95%) passed upstream through the JCFCF during dark hours between 18:00 and 05:00 hours (Figure 4).

Table 2: JCFCF outage summary table

Date Removed	Date Reinstalled	Total Days Out	Net Chinook Daily Average from 3 days before and after outage:	Net Coho Salmon Daily Average from 3 days before and after outage:	Net steelhead Daily Average from 3 days before and after outage:	Total Chinook Salmon Added	Total Coho Salmon Added	Total steelhead Added
10/24/2025	10/29/2025	4	1	0	0	4	0	0
11/4/2025	11/18/2025	13	0	0	0	0	0	0

**Figure 3: Net Chinook Salmon passage by date through the JCFCF****Figure 4: Chinook Salmon passage by hour**

CHINOOK SALMON WEIR WASH-BACK CARCASSES

A total of 10 Chinook Salmon carcasses washed back on the JCFCF weir; all 10 were collected and sampled. Of the 10 carcasses sampled, 8 (80%) were male and 2 (20%) were female (Table 3). In 2024 and 2025 the wash-back samples collected at the JCFCF show a bias toward males (Table 3 and Figure 5).

Table 3: Chinook Salmon sex ratio from washbacks collected at the JCFCF

Year	Total Chinook	Total Washback	# Sampled	% Male	% Female
2024	348	67	67	64	36
2025	211	10	10	80	20

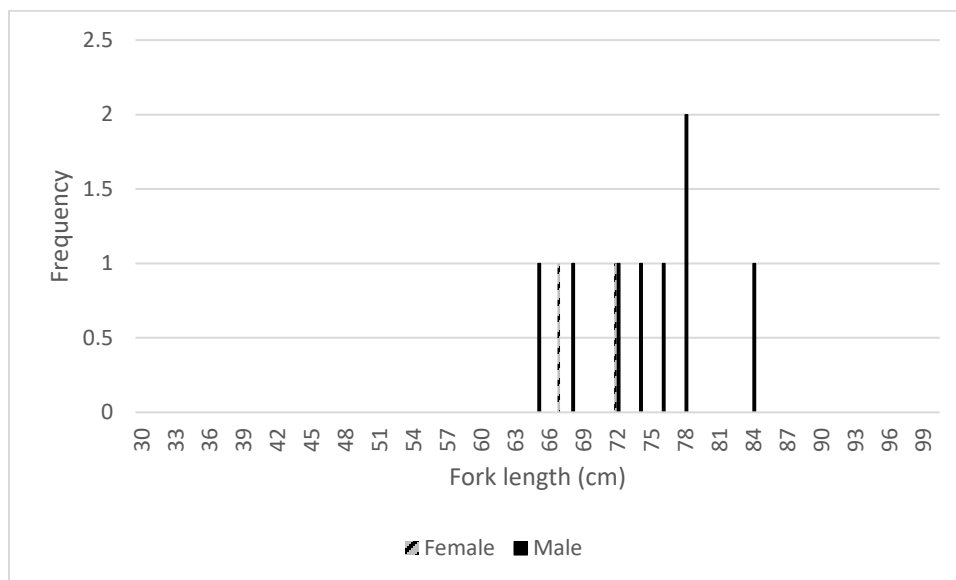


Figure 5: Chinook Salmon fork length histogram from JCFCF washbacks

SPAWNING GROUND SURVEYS

Spawning ground surveys were conducted throughout the spawning season. Surveys began on October 15, 2025, and were completed on December 3, 2025. 97 Chinook Salmon carcasses were recovered during the spawning ground surveys. 32 (33%) of the carcasses recovered were males with an average FL of 69.7 cm. 65 (67%) of the recovered carcasses were females with an average FL of 64.4 cm. Throughout the spawning ground surveys a total of 11 redds were observed and all were assumed to be from Chinook Salmon. Redds are assumed to be from Chinook Salmon and are recorded as such unless a different species of fish is observed near a redd or if the redd is observed outside the typical Chinook Salmon run timing (Figures 6, 7 and 8).

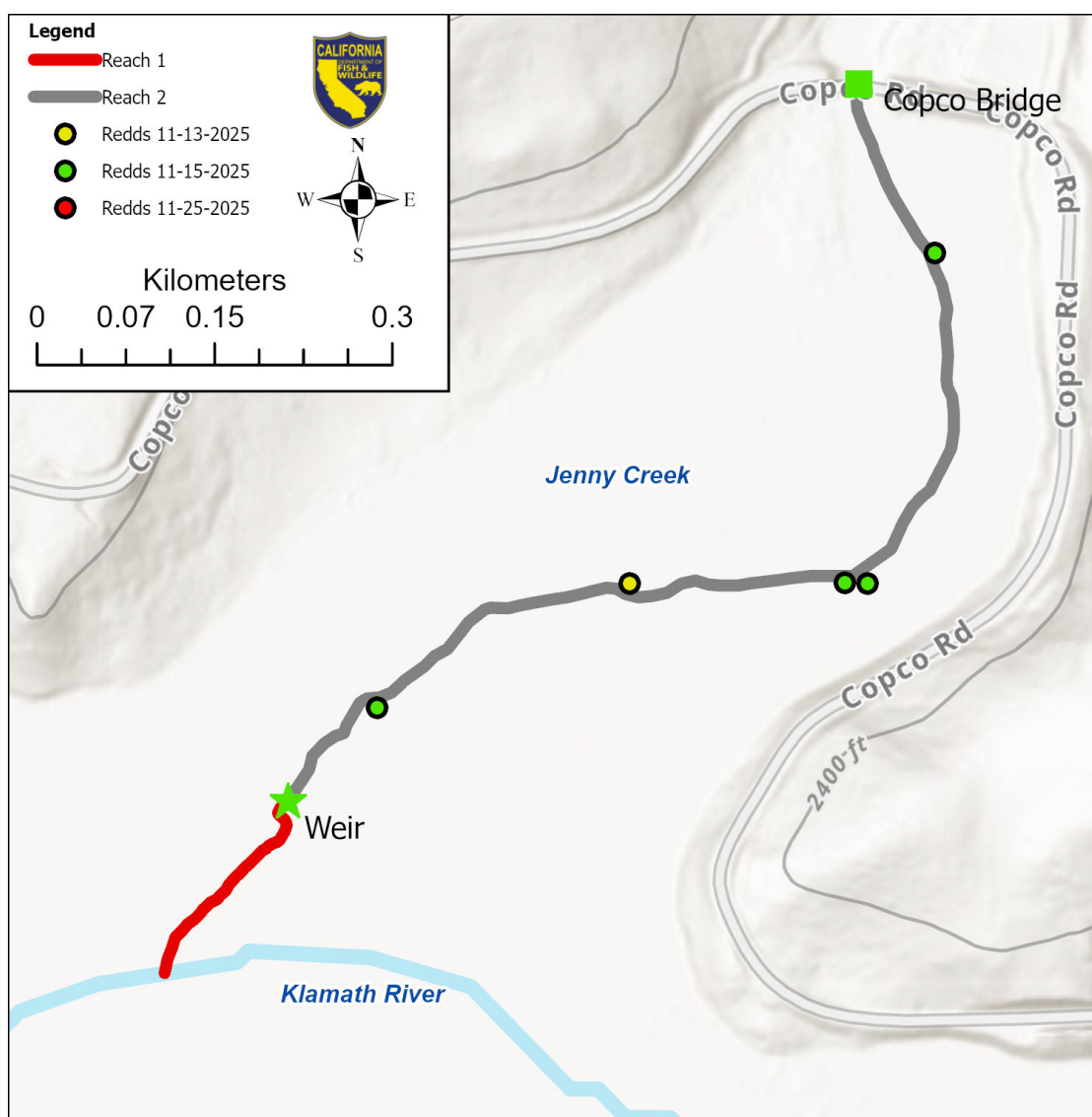


Figure 6: Jenny Creek redd map for reaches 1 and 2

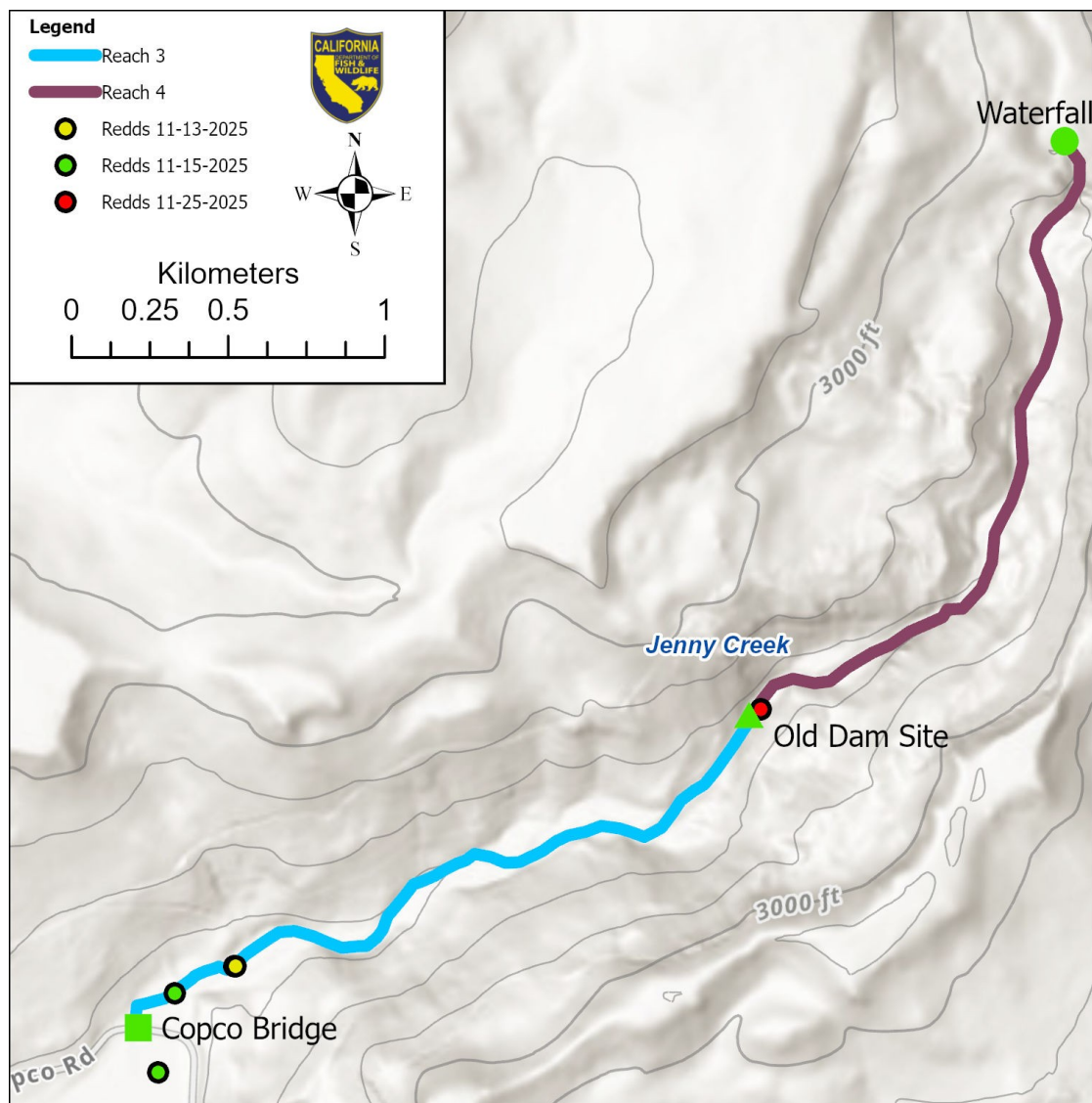


Figure 7: Jenny Creek redd map for reaches 3 and 4

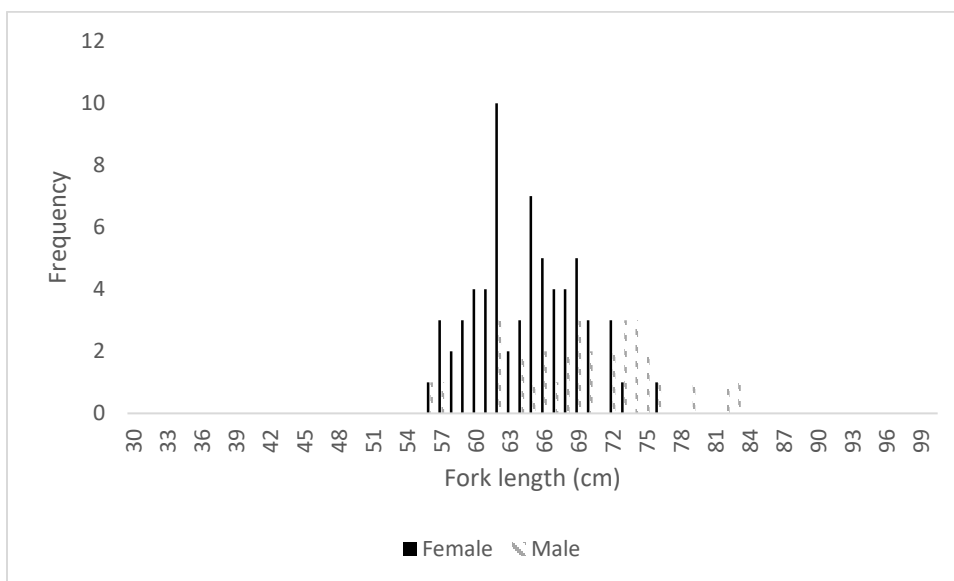


Figure 8: Chinook Salmon fork length frequency from SGS

CHINOOK SALMON AGE COMPOSITION

A preliminary length cutoff separating grilse from adults was estimated to be 57 cm FL; all Chinook Salmon less than 57 cm FL were considered grilse and yielded a preliminary estimate of 4 (1.9%) grilse and 207 (98.1%) adults. These estimates were made based on length frequency analysis of washback and SGS carcasses. Final estimates of the age composition of the 2025 run in Jenny Creek were finalized by the Klamath River Technical Team (KRTT, 2026) using scale age analysis conducted by the Yurok Tribe and U.S. Fish and Wildlife Service (Table 4). The final age estimate was 2 (0.9%) grilse and 209 (99.1%) adults.

Table 4: Age composition of Chinook Salmon in Jenny Creek from scale age analysis

Year	Age 2	Age 3	Age 4	Age 5	Total Adults	Total Run
2024	43	239	59	7	305	348
2025	2	194	13	2	209	211

CHINOOK SALMON HATCHERY INFLUENCE

In 2025, a net total of 12 ad-clipped Chinook Salmon were observed passing through the JCFCF and were assumed to be of hatchery origin. Due to factors such as turbulence, position of the fish in the flume, and poor visibility because of water quality, the adipose fin is not always visible during video review. As a result, the observed number is likely less than the number of ad-clipped Chinook Salmon that passed through the weir. In the 2025 season, 3 ad-clipped fish were recovered as wash-backs and 18 ad-clipped fish were recovered during SGS. CWTs were recovered from 11 heads collected; the other 10 were found to not have wire in the head and were likely misidentified as ad-clipped due to decomposition. All 11 of the recovered tags were Iron Gate Hatchery (IGH) origin fish, four from brood year 2021, and seven from brood year 2022.

Hatchery composition was calculated by multiplying the number of tags recovered by the production multiplier (from RMIS, equals the number of fish released divided by the number marked for each tag code). This product was then multiplied by the sample expansion (the number of Chinook Salmon estimated to have returned to Jenny Creek divided by the number of carcasses inspected for ad-clips). Resulting in an estimate of 64 Chinook Salmon (30.49%) of hatchery origin that returned to Jenny Creek in 2025 (Table 4).

Table 5: Estimated hatchery proportion of Chinook Salmon in Jenny Creek in 2025

2025 Jenny Creek Reach 1 CWT Estimates											
CWT	Release Location	Brood Year	Age	Release Type*	Number Recovered	Production Multiplier**	Production Estimate	Sample Expansion***	Expanded estimate	Estimate by age	Percent by age
No AD Carcasses Recovered in Reach 1							0.00	1	0.00	0.00	#DIV/0!
Total Run	211			Number Recovered Subtotal	0				Expanded Estimate Subtotal	0.00	
Estimated Contribution of Unknown CWTs											
200000	CWT Lost				0						
300000	Head Lost				0						
400000	CWT Unreadable				0						
Subtotal					0	Unknown Estimate:	0.00				
R1 Total Estimated Hatchery Contribution							0.00			R1 Hatchery Proportion:	0.0000
2025 Jenny Creek Reach 2-3 CWT Estimates											
CWT	Release Location	Brood Year	Age	Release Type*	Number Recovered	Production Multiplier**	Production Estimate	Sample Expansion***	Expanded estimate	Estimate by age	Percent by age
062269	IGH	2021	4	F	1	1.005628984	1.01	1.981132075	1.99		
061546	IGH	2021	4	F	1	1.014608829	1.01	1.981132075	2.01		
061545	IGH	2021	4	F	1	1.000199409	1.00	1.981132075	1.98		
060788	IGH	2021	4	AF	1	1.015745841	1.02	1.981132075	2.01	8.00	12.4297
060033	IGH	2022	3	F	2	4.115682573	8.23	1.981132075	16.31		
062875	IGH	2022	3	AF	1	4.059085079	4.06	1.981132075	8.04		
060032	IGH	2022	3	AF	4	4.036336788	16.15	1.981132075	31.99	56.34	87.57025901
Total Run	211			Number Recovered Subtotal	11				Expanded Estimate Subtotal	64.33	
Estimated Contribution of Unknown CWTs											
200000	CWT Lost				0						
300000	Head Lost				0						
400000	CWT Unreadable				0						
Subtotal					0	Unknown Estimate:	0.00				
R2-3 Total Estimated Hatchery Contribution							64.33			R2-3 Hatchery Proportion:	0.3049
Total Estimated Hatchery Contribution							64.33			Total Hatchery Proportion	0.3049
Release type is based on weight at release. Fingerlings (F) are <7.55 grams per fish, Advanced fingerlings (AF) are between 7.55 grams per fish and 22.62 grams per fish, Yearlings (Y) are >22.62 grams per fish.											
** Production Multiplier value is the proportion of #of IGH/FCH total release for the code to the # of fish effectively tagged											
*** Sample expansion is video total (210) divided by the number of spawning ground and washback samples (107)											

Table 6: Hatchery contribution to Jenny Creek in 2024 and 2025

Year	Total Chinook Salmon	Hatchery Stray Estimate	Percent Hatchery
2024	348	90	25.90%
2025	211	64	30.50%

COHO SALMON

From September 19, 2025, to December 15, 2025, zero Coho Salmon were observed passing upstream and zero observed passing downstream through the JCFCF.

STEELHEAD TROUT

In 2025, a net total of 1 adult steelhead was estimated to have entered and remained in Jenny Creek during the video recording season from September 19, 2025, to December 15, 2025. The steelhead was observed on October 15, 2025. No ad-clip observations were made, indicating zero hatchery origin steelhead. The Alaskan weir is not impermeable to juvenile fish, including “half pounders”; therefore, sub-adult or juvenile steelhead were recorded, but excluded from this analysis. All *Oncorhynchus mykiss* included in this analysis were greater than or equal to 40.64 cm (16 inches).

DISCUSSION

CHINOOK SALMON

The 2025 run of Chinook Salmon of 211 was 69 fish below the 2-year average of 280 (Figure 11). The number of two-year-olds that returned in 2025 (2) was much lower than 2024 (43). Two-year-olds returning in 2025 were from brood year 2023 and likely out-migrated in the spring of 2024, which is when reservoir drawdown for the dam removal project had begun.

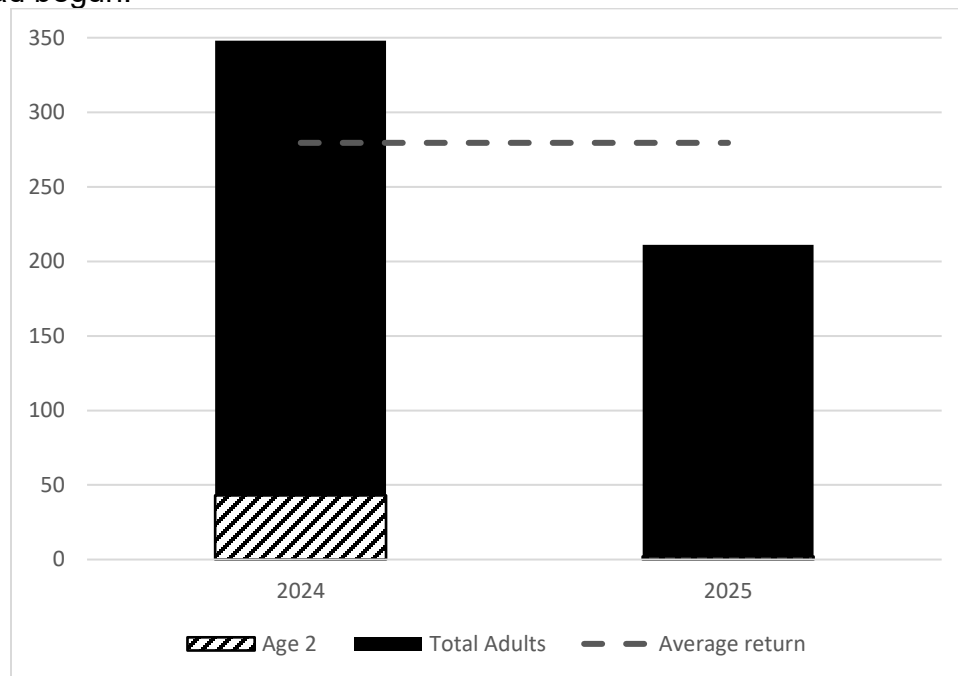


Figure 9: Jenny Creek Chinook Salmon annual estimates

In 2025 a Chinook Salmon was observed entering Jenny Creek on September 19, 2025, which was the day the weir was installed. Migration began to increase on October 7, 2025, and was completed by November 3, 2025 (Figure 10). In 2024 migration didn't begin to increase until October 17, 2024. The Chinook Salmon migration in Jenny Creek in 2025 was about 14 days earlier than in 2024. This trend was observed in other tributaries in 2025 as well.

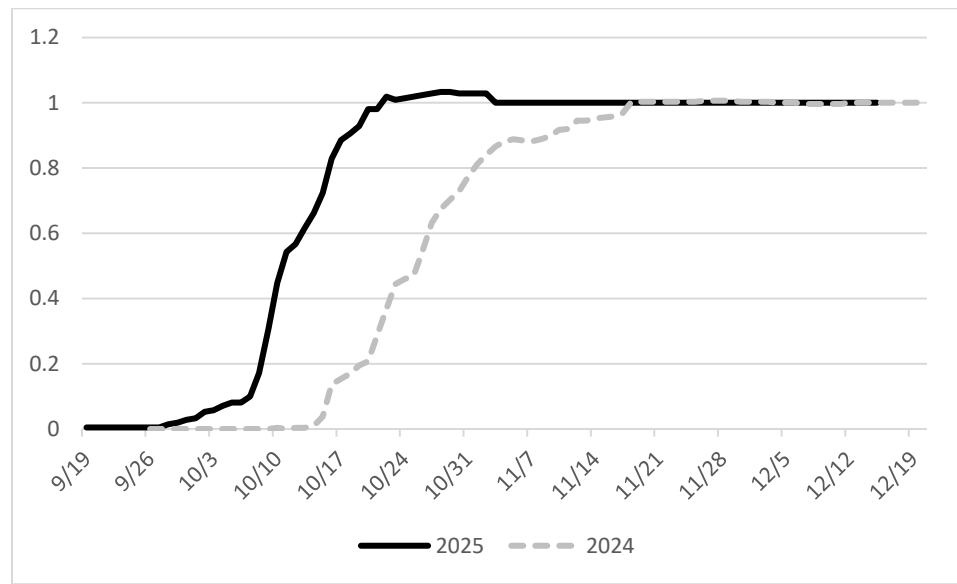


Figure 10: Jenny Creek Chinook Salmon passage proportions by date

During the 2025-2026 spawning and egg incubation period (October through February), Jenny Creek experienced higher unstable flows in October and November, however by December rains had decreased, and flows had begun to drop and remained relatively low for most of the spring outmigration period. The higher flows in October and November may have impacted redds, but no scour was physically observed.

No juvenile estimates were made for Jenny Creek for brood year 2024. Brood year 2025 juvenile estimates are still being calculated and will be included in future reports.

COHO SALMON

No Coho Salmon were observed at the JCFCF or during SGS in Jenny Creek in 2025. The JCFCF was removed on December 15, 2025, so it is possible that some Coho Salmon may have entered Jenny Creek after removal of the station. Very few Coho Salmon were observed in most of the basin and only 26 Coho Salmon returned to FCH in 2025.

No juvenile estimates were made for Jenny Creek for brood year 2024. Brood year 2025 juvenile estimates are still being calculated and will be included in future reports.

STEELHEAD TROUT

The objectives of KRP have traditionally focused on monitoring the escapement of Chinook Salmon, and more recently Coho Salmon. In 2025 the video monitoring station was run until December 15, 2025. Steelhead escapement has proven challenging due to run timing (steelhead migration is usually underway when flow conditions make weir removal necessary) and life history, as individual steelhead are often observed to move repeatedly through the video flume in upstream and downstream directions. A net total of 1 steelhead swam upstream past the JCFCF. In 2024 zero steelhead were observed passing the JCFCF.

ACKNOWLEDGEMENTS

The California Department of Fish and Wildlife would like to thank all field staff who helped contribute to the collection of the annual field data during the 2025 season. KRP would like to extend their gratitude to the Klamath Watershed Project for sharing their juvenile monitoring data.

LITERATURE CITED

KRTAT (Klamath River Technical Advisory Team). 2026. Klamath River Fall Chinook Age-Specific Escapement, 2023 Run. Available from U.S. Fish and Wildlife Service, 1829 South Oregon Street, Yreka, CA, 96097.

King, B. and R. Romero. 2026. 2025 California Upper Klamath River Tributaries Juvenile Salmonid Outmigrant Study. California Department of Fish and Wildlife, Klamath Watershed Program.