

# Scott River Fall Chinook Spawning Ground Surveys 2022 Season



*Chinook Salmon caught on the Mid-Klamath River.*

Work Completed by the  
Siskiyou Resource Conservation District  
for the  
United States Fish and Wildlife Service  
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## Introduction

The Scott River is an important spawning tributary for natural fall-run Chinook salmon in the Klamath Basin. Since 1992, escapement estimates have been compiled for the Scott River through cooperative spawning ground surveys organized by the California Department of Fish and Wildlife (CDFW) and the United States Forest Service (USFS). The objective of these surveys is to collect information on run parameters including the timing, duration, age composition, hatchery contribution, and redd distribution. The monitoring of this independent Chinook salmon population provides valuable trend data, including escapement estimates which are utilized by the Pacific Fisheries Management Council for the allocation of Klamath Basin fall run fish.

## Fall 2022 Flow Conditions

Following a critically dry 2022 water year in the Scott Valley sub-basin of the Klamath River, streams throughout the watershed were very low and the Scott River in the valley reaches was dry with only isolated pools. In the last week of November, after receiving approximately 1.5 inches of rain, the Scott River mainstem connected through Reach 9 (river mile 26) on 11/26/22 (Map 1, Figure 1). Connection of the Scott River through the entire valley and to most of its western tributaries including Shackleford Creek, Etna Creek, French Creek, Sugar Creek and the East and West forks of the Scott River occurred in early December, but was tenuous.

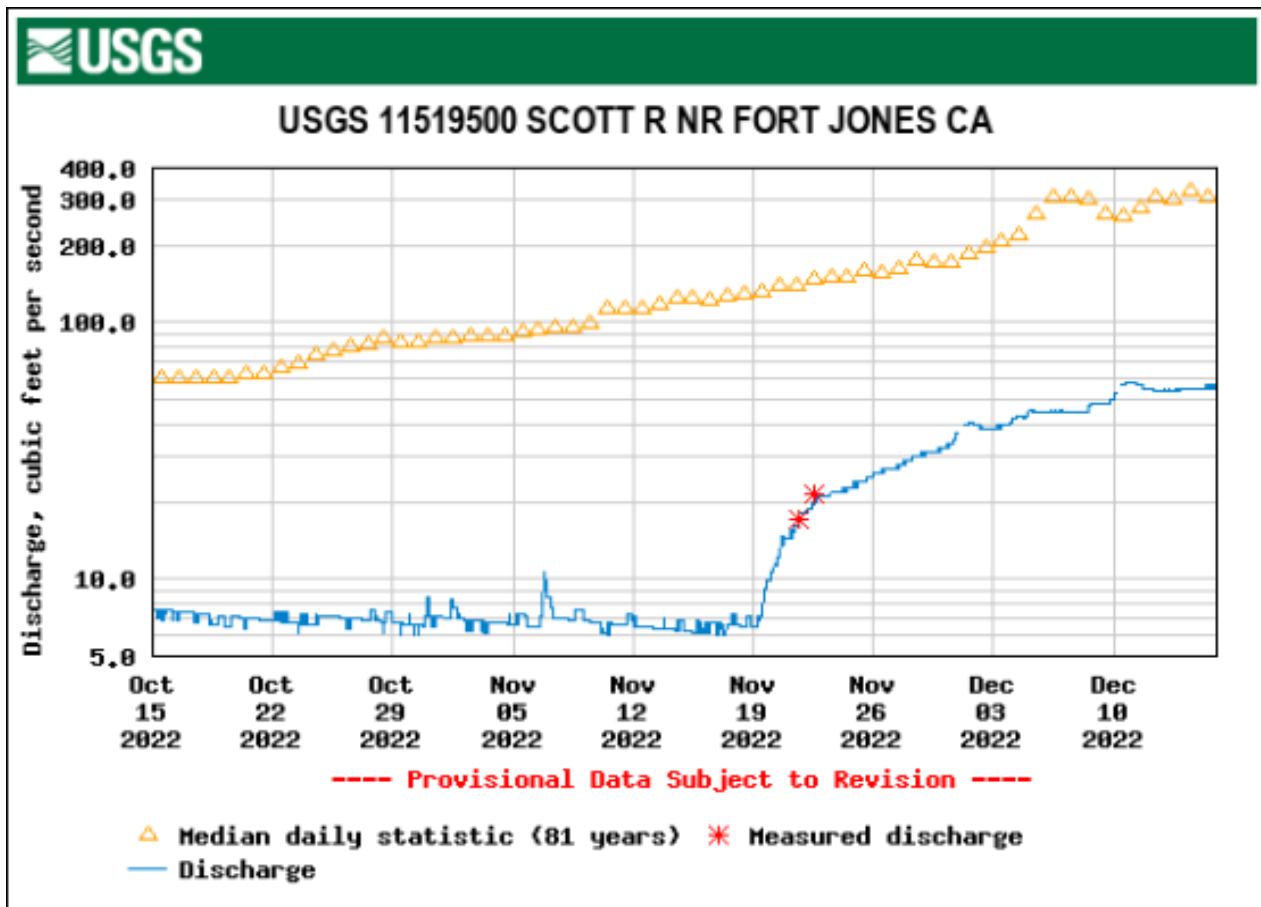


Figure 1: Scott River discharge at the USGS gage at river mile 21. (USGS, 2022) Connection above Reach 9 occurred on 11/26/22.

## Surveys

The Annual Scott River Spawning Ground Survey Training was held in person at the Indian Scotty Campground in the beginning of October 2022. All individuals who led field crews attended the 2022 training or a previous year's training. RCD crew leaders were Chris Voigt and Jim Morris. Jim Morris, a former high school teacher, involved Etna High School students in the surveys. The Siskiyou RCD follows the protocol employed since 1992 to assess Chinook populations in the Klamath River Basin. This protocol has been used in the Scott River watershed for adult Chinook spawning ground surveys since they were initiated in 2002 (Maurer, 2002). All surveys were carried out following protocols and procedures detailed in the Klamath Basin Cooperative Spawning Ground Survey 2022 Training Manual (CDFW, 2022). Weather conditions over the fall of 2022 were fair to good for the observation of spawning - once water levels allowed around the end of November.

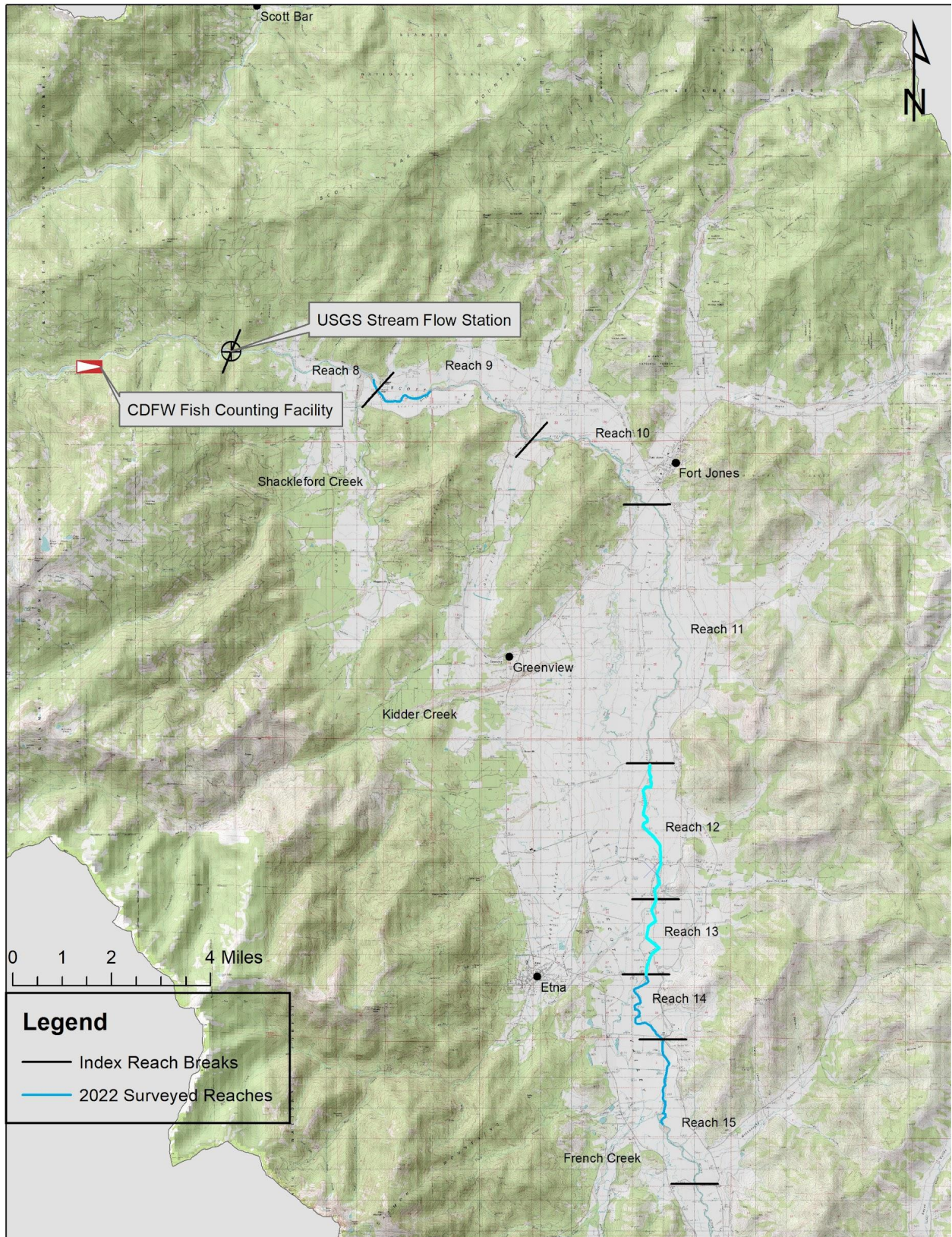
The RCD initiated spawning ground surveys through the Index Reaches of the Scott River Valley on November 22nd, 2022 (Table 1, Map 1). Scheduling involved a minimum of weekly surveys of Index Reaches 12 through 15 and weekly surveys of reach 9 as stream conditions permitted. The first 0.2 miles of reach 8 was surveyed as landowner access was granted. Based on observations and absence of live fish and redd construction, crews determined Chinook spawning had subsided and ended surveys on December 8th, 2022. Map 1 indicates the index reach breaks and the tributary reaches surveyed.

Surveys were conducted on 13.4 miles of the Scott River mainstem covering the Index Reaches 8-9 and 12-15. Surveys were not conducted through or above the historic mining tailings due to streamflow conditions. There were no Chinook Salmon observed.

**Table 1. Scott River Mainstem Index Reaches**

<b>Index Reach</b>	<b>Reach Description</b>	<b>Upstream River Mile</b>	<b>Downstream River Mile</b>	<b>Total Length</b>	<b>Length Surveyed</b>
8	Meamber Bridge to USGS Stream Gauge	24.4	21	3.4	0.2
9	Oro Fino to Quartz Valley Bridge	28.6	24.4	4.2	2.2
10	Highway 3 to Oro Fino	35.6	28.6	7	0
11	Eller Lane to Highway 3	41.1	35.6	5.5	0
12	Etna Creek to Eller Lane	44.7	41.1	3.6	3.6
13	Horn Lane to Etna Creek	46.5	44.7	1.8	1.8
14	Young's Dam to Horn Lane	48.6	46.5	2.1	2.1
15	Fay Lane to Young's Dam	52.2	48.6	3.6	3.5
16	Callahan to Fay Lane	59.1	52.2	6.9	0
<b>Total</b>				<b>38.1</b>	<b>13.4</b>





Map 1: 2022 reaches surveyed (blue).

## Lives

CDFW operates the Scott River Fish Counting Facility (SRFCF) on the Scott River, which is located at river mile 18.2 near the transition between the canyon and the low-gradient valley. Less than 100 Chinook were recorded passing upstream through the video weir from September 26 through November, 2022. 0 Chinook Salmon were observed in the valley by RCD field crews. The Scott River was disconnected through the valley over the summer of 2022. Small to medium rain events in the Scott Valley resulted in below-average stream flows during the typical Chinook Salmon migration period of 2022. The USGS streamflow gage at river mile 21 remained around 20-60 CFS through most of the remaining migration period (USGS 2022, preliminary data). As such, there was minor to significant concern over fish passage through problem areas such as Oro Fino, Young's Dam and the tailings. Crews periodically checked these sites and it was determined that the shallow riffles through Oro Fino and or the channels through Young's Dam presented an actual or likely fish passage barrier during the migration period. No Chinook Salmon were encountered by RCD crews through the valley reaches of the main stem surveys from November 22nd, 2022 through December 8th ,2022 (Appendix A).

## Biological Samples

No carcasses were observed or sampled by the field crews.

## Redds

No redds were observed or surveyed by the field crews.

## Conclusions

Since 1978, the natural Chinook escapement into the Scott River has ranged from 14,477 fish (1995) to 467 fish (2004) (Knechtle and Giudice, 2021). The total escapement in 2022 for the Scott River was estimated at 927 fish (Pacific Fishery Management Council), which is significantly lower than the average of 4,664 fish.

The fall of 2022 was characterized by a small to medium pulse precipitation event and then little precipitation thereafter. Although Chinook migration typically coincides with pulse flow events, the river connected above reaches 9 relatively late (November 26th) and there was below-average flow through the duration of the spawning season. Additionally, the number of fish passing through the weir was well below historical averages, thus it was a well below average year for returning spawning Chinook. The lack of spawning distribution and habitat utilization of the mainstem Scott River in 2022 can be considered non-typical of the species and the region, where the vast majority of spawning occurs on the mainstem Scott River mostly on Reach 9 and between Reaches 12-16, with reaches 15 and 16 above Young's Dam having the highest density of redds.

# References Cited

- California Department of Fish and Wildlife (CDFW) et al. 2021. Klamath Basin Cooperative Spawning Ground Survey Training Manual.
- Knechtle, M. and Guidice, D. 2021. 2020 Scott River Salmon Studies. Final Report, Klamath River Project. CDFW Yreka Fisheries Office. Yreka, CA.
- Maurer, S. 2002. Scott River Watershed Adult Coho Salmon Spawning Survey: December 2001 - January 2002. Prepared for the Klamath National Forest, Fort Jones, CA.
- Pacific Fishery Management Council. 2023. Review of 2022 Ocean Salmon Fisheries: Stock Assessment and Fishery Evaluation Document for the Pacific Coast Salmon Fishery Management Plan. (Document prepared for the Council and its advisory entities.)

U.S. Geological Survey (USGS). 2022. Discharge records for Scott River Gage 11519500 near Fort Jones (data was identified as provisional at time of retrieval).

<https://waterdata.usgs.gov/monitoring-location/11519500/#parameterCode=00060&showMedia=n=true&startDT=2022-10-15&endDT=2022-12-15>



# Appendix A.

*Summary of Chinook Spawning Ground Surveys Completed by the Siskiyou Resource Conservation District, 2022 Fall Run*

<b>Date</b>	<b>Stream</b>	<b>Reach</b>	<b>Lives</b>	<b>Redds</b>	<b>Carcasses Inventoried</b>	<b>Carcasses Sampled</b>
11/22/2022	SR	Lower 9 / 8 (upper 1000')	0	0	0	0
11/29/2022	SR	12, 13, 14	0	0	0	0
11/30/2022	SR	Lower 9 / 8 (upper 1000')	0	0	0	0
12/2/2022	SR	12, 13	0	0	0	0
12/6/2022	SR	Lower 9 / 8 (upper 1000')	0	0	0	0
12/8/2022	SR	12, 13, 15	0	0	0	0