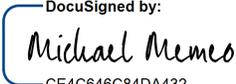


**State of California
Department of Fish and Wildlife**

M e m o r á n d u m

Date: August 8, 2025

To: Matt Johnson
Senior Environmental Scientist (Inland Anadromous Fisheries Supervisor)
Department of Fish and Wildlife

From: Michael Memeo 
Senior Environmental Scientist (Voluntary Agreement Specialist)
Department of Fish and Wildlife

Subject: Documentation of Winter-Run Chinook Salmon Spawning in the Lower McCloud River July 2025

On July 15, 2025, CDFW and Pacific States Marine Fisheries (PSMFC) personnel confirmed anglers' observations of adult Chinook Salmon spawning in the McCloud River (July 16 Memorandum). Following that discovery, the goal of CDFW was to collect as much documentation of spawning activities in the upper section of the McCloud River as possible. Two separate trips were made to survey the section of the river between McCloud Dam and AhDiNa Campground on July 18th and 21st. A map depicting survey areas and data collected is provided in Figure 1. This section of the river is very steep with large gradient rapids and low visibility, which makes it infeasible to monitor the section in its entirety. On July 18, 2025, a team of three staff (two from CDFW and one PSMFC) surveyed (wade/swim) approximately 0.7 miles of the river from the PG&E gauging station, located approximately ¼ mile downstream of the McCloud Dam, to the Ash Camp bridge. Although visibility was only approximately 2-3 feet, four completed Chinook Salmon redds were identified (Figure 1). Only small areas of spawning habitat in the reach surveyed were identified (Figure 2), but given the low visibility and fast deep water, there is a high probability that additional spawning habitat exists and possibly additional undetected redds. Water quality metrics were collected at the Ash Camp Bridge using a YSI Pro DSS water quality meter. Water temperature was 11.6C, Dissolved Oxygen was around 10.08 milligrams per liter, and the pH was 8.19.

On July 21, 2025, CDFW staff completed a second trip to the same river section, this time to access the river via the Pacific Crest Trail which parallels

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the McCloud River for approximately two miles below Ash Camp. Approximately 500 yards of river extending up and downstream from a spur trail off the Pacific Crest Trail (depicted in Figure 1) were surveyed. An additional 500-yard section of river above and below the area where the spawning Chinook were observed on July 15th was surveyed on July 21. One additional redd was identified (Figure 3). Visibility during the July 21 survey had diminished from the time of the survey on the 18th and due to staffing limitations, no additional surveys were conducted below the downstream point depicted in Figure 1. As of July 24th, the window for in-river surveys closed due to high turbidity caused by heavy thunderstorms which impacted the Mud Creek Drainage, the largest contributor of turbidity in the McCloud River. Turbidity (CDEC Station ID MSS) in the McCloud River from July 15 to August 1 is depicted in Figure 4. Despite the limited time, and the poor visibility conditions crews were able to find and document a total of seven Chinook Salmon redds and gain a better understanding of access in this stretch of river.

Documentation of Chinook Salmon spawning habitat in this reach of the upper McCloud River was also completed. It is likely that additional spawning habitat exists in this section, but visibility conditions would have to improve greatly to accurately quantify it. Quantifying spawning habitat in the future would require enhanced planning to coordinate surveys that access locations safely during a timeframe where conditions are conducive for in-stream (wade/swimming) surveys. Expanding upon the Bureau of Reclamation's habitat survey from 2014, focusing more on the reach of the McCloud River between the two reservoirs (Shasta and McCloud) and implementing more ground surveys where possible is recommended.

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McCloud River Winter-Run Spawning Map

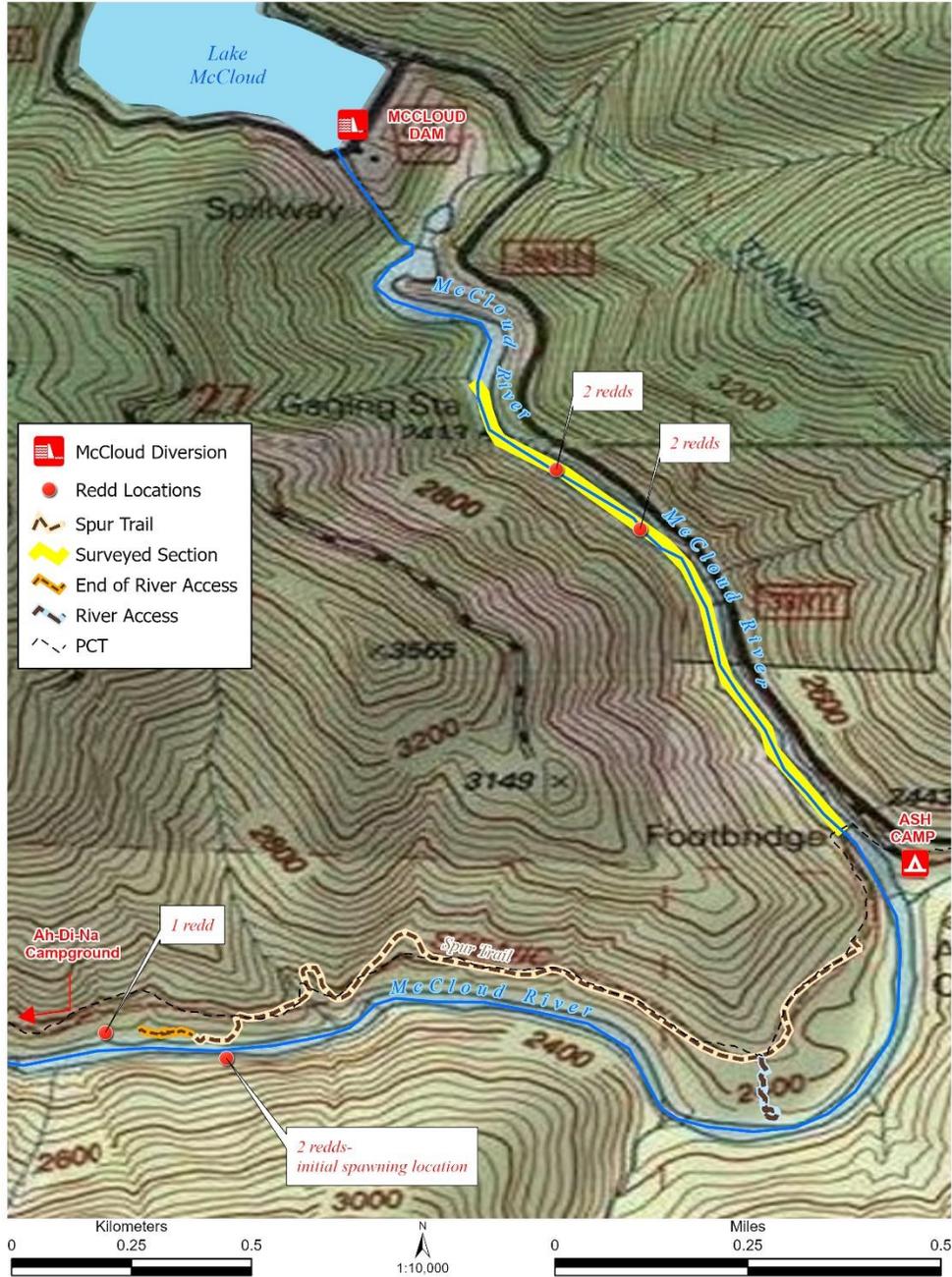


Figure 1. Map depicting survey reaches and observations made between July 15 and July 21st.

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Figure 2. An example of spawning habitat above Ash Camp Bridge. Two redds were documented at this location.

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Figure 3. An example of the water clarity and existing spawning habitat. Note the redd in the upstream portion of the gravel pad.

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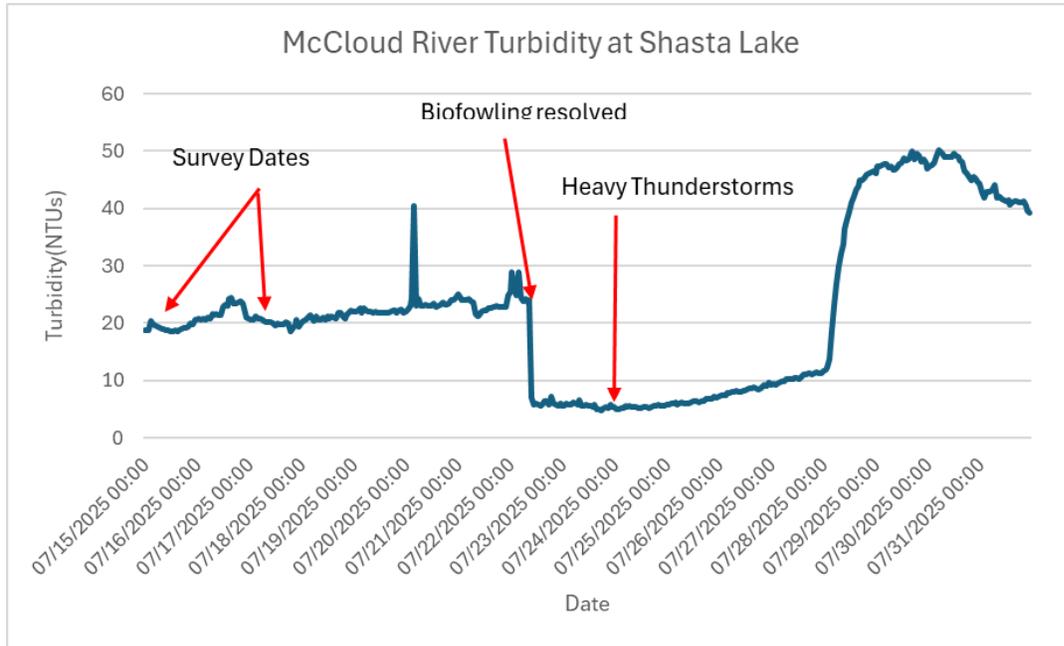


Figure 4. Turbidity at CDEC station MSS (McCloud River Above Shasta Lake) from July 15, 2025, to August 1, 2025.

References:

Bureau of Reclamation. (2014). *Habitat Assessment Final Report Shasta Dam Fish Passage Evaluation United States Department of the Interior Mid-Pacific Region Bureau of Reclamation.*

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