State of California
Department of Fish and Wildlife

M e m o r a n d u m

Date: December 22, 2025

To: Leslie Call
Sierra District (Fisheries) Supervisor
Department of Fish and Wildlife

From: Ben Ewing
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Department of Fish and Wildlife

Cc: Region 2 Fish Files

Re: 2024 Tule Lake Electrofishing Survey

On June 12, 2024, California Department of Fish and Wildlife (Department), Lake County, Robinson Rancheria, and Big Valley Rancheria collectively, "staff" conducted a general fish survey on Tule Lake (Lake County). The majority of accessible shoreline was sampled at Tule Lake using an electrofishing boat. Due to private property and how shallow much of the lake's shoreline is, not all of the shoreline was sampled. The purpose of the survey was to gather baseline information on Tule Lake's fishery during the spring season since Tule Lake plays a large role in the lifecycle of Clear Lake Hitch (*Lavinia exilicauda chi*) (CLH).

Tule Lake is located at 39.157758 N, 122.931792 W and 1,318 feet above mean sea level (**Figure 1**). The shoreline is a mix of tules, rocks, grasses, and oak woodland. Tule Lake receives water from Scotts Creek. In 1986, a commercial fisherman requested to harvest Sacramento Blackfish (*Orthodon microlepidotus*) (SBF), Common Carp (*Cyprinus carpio*) (CC), and CLH (Hunter 1986). Additionally, this same applicant proposed to relocate any trout (*Salmonidae* family), bass (*Micropterus* genus), Catfish (*Ictaluridae* family), and Crappie (*Pomoxis* genus) caught downstream of Tule Lake.

The species, number collected, and catch per unit effort, were recorded for all species while mean length and length ranges for CLH were recorded and presented in **Table 1**. Due to the focus of the study on CLH as well as limiting the stress on CLH and other species, no weights were collected for any species and no lengths were collected for species other than CLH.

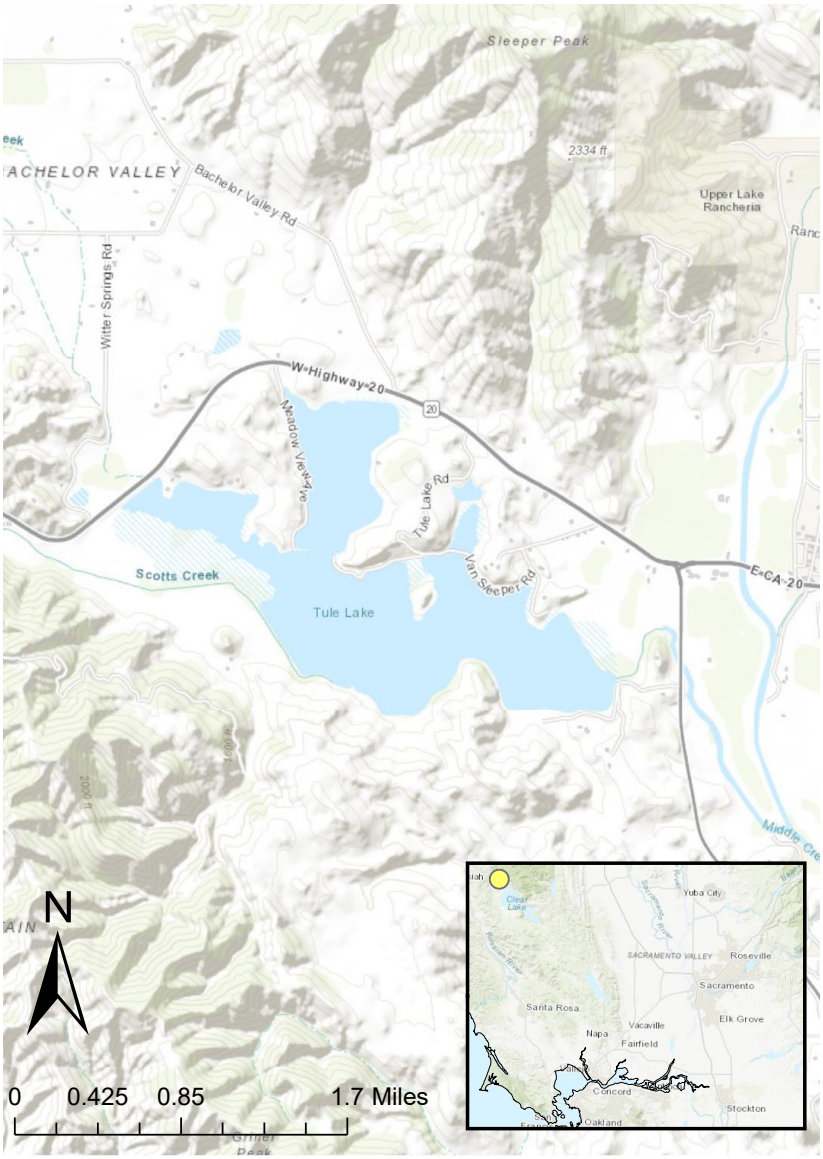

Figure 1. Tule Lake (Lake County). Tule Lake is also indicated by yellow dot in the inset frame in relation to Santa Rosa and San Francisco Bay area.

Table 1. Species composition from Tule Lake, June 12, 2024. Catch Per Unit Effort (CPUE) was measured in fish-per-minute. Mean Total Length (TL) for Clear Lake Hitch was measured in inches (in.).

	Species	Number	Percent	CPUE	(TL)	Total Length Range
1	Common Carp	52	26.5%	0.38	NA	NA
2	Clear Lake Hitch	41	20.9%	0.30	5.71	4.0 - 13.25
3	Threadfin Shad	41	20.9%	0.30	NA	NA
4	Goldfish	32	16.3%	0.23	NA	NA
5	Black Crappie	12	6.1%	0.09	NA	NA
6	Largemouth Bass	7	3.6%	0.05	NA	NA
7	Brown Bullhead	6	3.1%	0.04	NA	NA
8	Sacramento Blackfish	3	1.5%	0.02	NA	NA
9	Sacramento Sucker	2	1.0%	0.01	NA	NA
	Total	196				
	Generator minutes:	137				
	CPUE (Fish/ gen. min)	1.43				

* Inlands Silverside were present but not recorded.

Staff surveyed much of the shoreline at Tule Lake (**Figure 2**). CC, Largemouth Bass (*Micropterus salmoides*) (LMB), Black Crappie (Pomoxis *nigromaculatus*) (BCR), Brown Bullhead (*Ameiurus nebulosus*) (BBH), SBF, CLH, Goldfish (*Carassius auratus*) (GF), Threadfin Shad (*Dorosoma* petenense) (TSH), and Sacramento Sucker (*Catostomus occidentalis*) (SS) were collected during the survey.

Figure 2. Crew electrofishing Tule Lake in June, 2024. (Photo Credit A. Balletto)

Forty-one CLH were collected with an average total length of 5.7 in. while total length ranged from 4.0 − 13.25 in. (**Figure 3**). CPUE was 0.30 fish/minute.

Figure 3. One of the 41 Clear Lake Hitch collected at Tule Lake in June, 2024. (Photo Credit A. Balletto)

Fifty-two CC were collected and removed from the system, with a CPUE of 0.38 fish/minute (**Figure 4**).

Figure 4. Common Carp collected and removed at Tule Lake in June, 2024. (Photo Credit T. Woodruff)

Six BBH were collected and released, with a CPUE of 0.04 fish/minute (**Figure 5**).

Figure 5. One of six Brown Bullhead collected at Tule Lake in June, 2024 (Photo Credit A. Balletto)

Thirty-two GF were collected and removed from the system with a CPUE of 0.23 fish/minute. **Figure 6** (below) shows some of the GF collected on top of the larger CC.

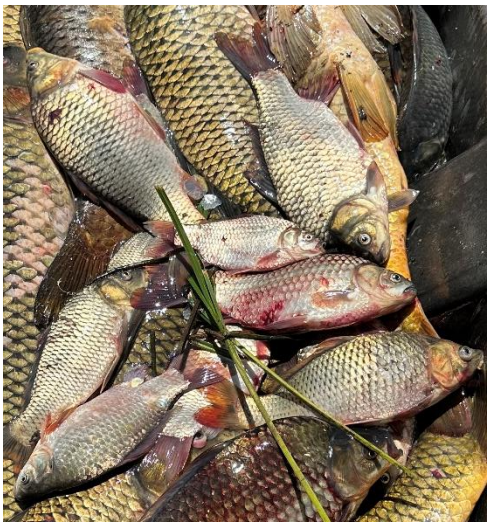

Figure 6. GF collected at Tule Lake in June, 2024 (Photo Credit T. Woodruff)

Twelve BCR were collected and released, with a CPUE of 0.09 fish/minute (**Figure 7**).

Figure 7. One of 12 Black Crappie collected at Tule Lake in June, 2024. (Photo Credit A. Balletto)

Two SS were collected and released, with a CPUE of 0.01 fish/minute (**Figure 8**).

Figure 8. One of two Sacramento Sucker collected at Tule Lake in June, 2024. (Photo credit T. Woodruff)

Three SBF were collected and released, with a CPUE of 0.02 fish/minute (**Figure 9**).

Figure 9. One of three Sacramento Blackfish collected at Tule Lake in June, 2024. (Photo credit T.Woodruff)

Forty-one TSH were collected with a CPUE of 0.30 fish/minute and seven LMB were collected with a CPUE of 0.05 fish/minute. Additionally, Inland Silverside (*Menidia beryllina*)

were present, but not collected due to large numbers present.

Catch per unit effort for all species during the survey was 1.43 fish/minute of shock time. Based on the results of the survey, Tule Lake is home, for at least part of the year, to a diverse assortment of non-native warmwater fish, plus a small, native fish population. During poor water years and low lake levels, Tule Lake's summer water temperature becomes inhospitable and the decreased volume of water makes it difficult for any remaining fish to thrive. With the large proportion of CC and GF collected relative to CLH, it is likely that the non-native Cyprinids are negatively impacting the CLH population. To assist in CLH egg, larvae and juvenile survival, all CC and GF collected in the 2024 survey were removed from Tule Lake. The Department hopes that Tule Lake will become a more significant nursery for CLH with increased spawning and survival. Future monitoring and CC/GF removal efforts will be needed to assist in tracking and improving the CLH population.

Literature Cited

Hunter, B. 1986. Request comments and recommendations on commercial harvest of non-game fish proposal. California Department of Fish and Wildlife Region 2 Fish Files. https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=67241