



State of California
Department of Fish and Wildlife

M e m o r a n d u m

Date: October 1, 2014

To: Kevin Thomas
Senior Environmental Scientist Supervisor
Department of Fish and Wildlife

From: Ben Ewing
District Fisheries Biologist
Alpine, Amador, Calaveras, and Lake Counties
Department of Fish and Wildlife

Cc: Fish Files

Re: Clear Lake hitch fish rescues from Adobe and Cooper Creeks, Lake County

On May 23, June 2, 3, and 9, 2014, California Department of Fish and Wildlife (Department) personnel, along with volunteers from the local tribes at Clear Lake, conducted multiple fish rescues on Adobe and Cooper Creeks (Lake County). The purpose of the rescues was to capture and relocate Clear Lake hitch (*Lavinia exilicauda chi*) (CLH) that were stranded in isolated pools in the two creeks. Currently, CLH is a threatened species under the California Endangered Species Act (CESA).

On May 23, 2014, members of the Department, Robinson Rancheria, and Big Valley Rancheria participated in a fish rescue on Adobe Creek upstream of the Finley Road Crossing (Figure 1). A small isolated pool that was quickly drying up had been identified by Big Valley Rancheria members as a pool holding CLH. Approximately 150 Sacramento suckers (*Catostomus occidentalis*) (Suckers) and at least one sculpin (*Cottus* spp.) were collected using various sized dip nets and placed into coolers (Figure 2). One dead juvenile CLH was found at the pool with only half the body present. No other CLH were identified in the rescue. These fish were transferred to Konocti Vista Casino's boat launch ramp which sits on Clear Lake. No mortalities were documented.

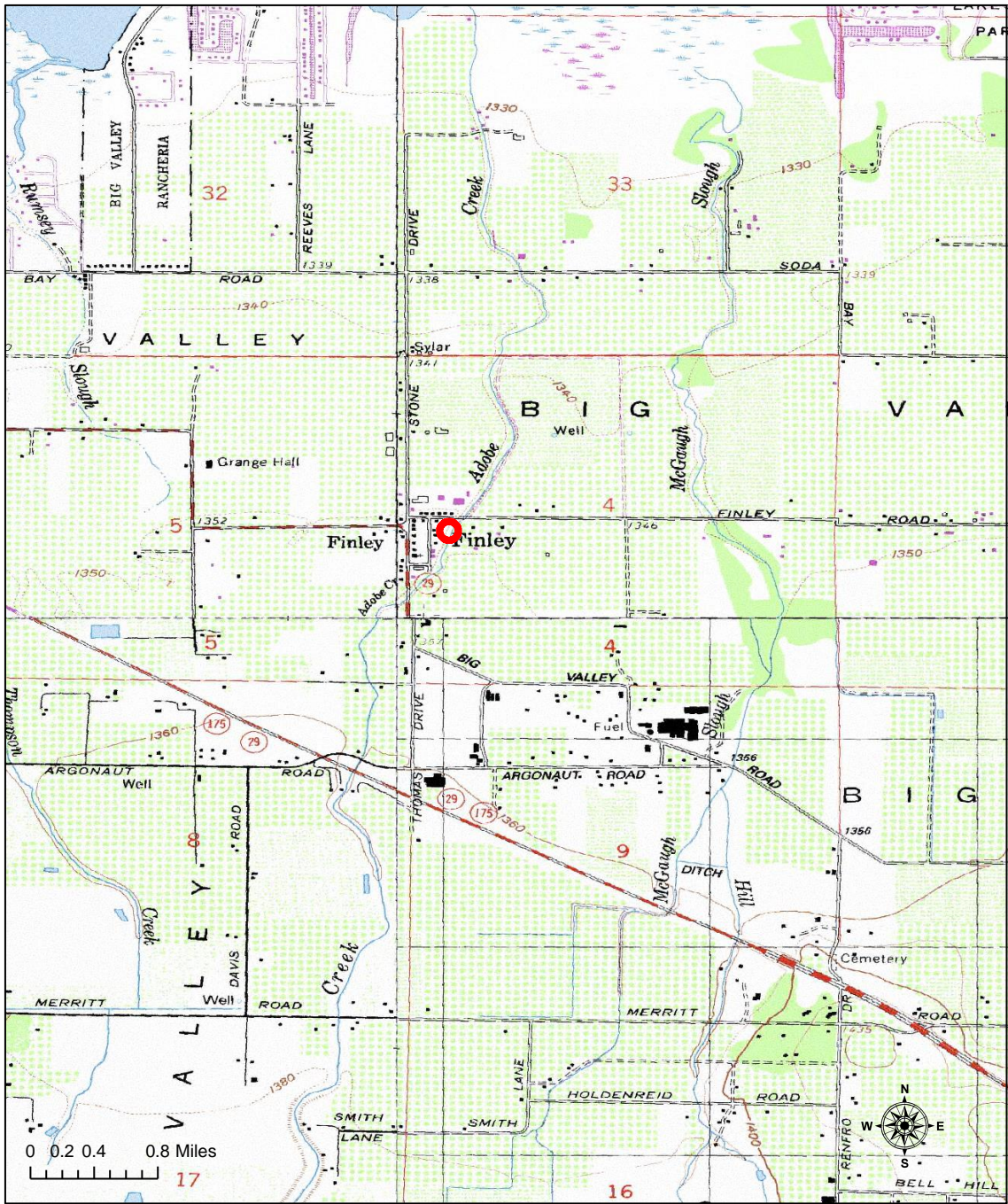


Figure 1. Adobe Creek Fish Rescue at Finley Road Crossing, Finley ,CA.



Figure 2. Adobe Creek approximately 100 yards upstream of the Finley Road Crossing on 5/23/2014. Photo by J. Gichuki.

On June 2 and 3, 2014, members of the Department and Robinson Rancheria, participated in a fish rescue on Cooper Creek upstream and downstream of the Witter Springs Road Crossing (Figure 3). Multiple small, isolated pools that were quickly drying up had been identified by a private homeowner on Cooper Creek as pools that were holding fish (Figure 4). Approximately 675 CLH were rescued on June 2. Of the 675 CLH, 53 of them died. Approximately 811 CLH were rescued on June 3, with no reported mortalities. Between the two days at Cooper Creek, a total of 1,433 CLH were rescued from Cooper Creek and relocated to the Rodman Slough section ($39^{\circ} 07' 06.76$ N $122^{\circ} 53' 12.81$ W) of Clear Lake.

Approximately 1,890 suckers were rescued with 147 estimated mortalities on June 2. On June 3 approximately 2,271 suckers were rescued with no reported mortalities. Between the two days at Cooper Creek, a total of 4,014 suckers were rescued from Cooper Creek and also relocated to the Rodman Slough section of Clear Lake.

Like suckers, approximately 1,890 three spine stickleback (*Gasterosteus aculeatus*) (stickleback) were rescued with 147 estimated mortalities on June 2 (Figure 5). On June 3 approximately 2,271 sticklebacks were rescued with no reported mortalities. Between the two days at Cooper Creek, a total of 4,014 sticklebacks were rescued from Cooper Creek and also relocated to the Rodman Slough section of Clear Lake.

Approximately 45 sculpin were rescued with four estimated mortalities on June 2, 2014. On June 3, approximately 54 sculpin were rescued with no reported mortalities.

Between the two days at Cooper Creek, a total of 95 sculpin were rescued from Cooper Creek and also relocated to the Rodman Slough section of Clear Lake.

All fish collected at Cooper Creek were collected using various sized dip nets with/without the combination with a Smith-Root Model LR 20 B backpack electrofisher. All fish were then placed into coolers and relocated.

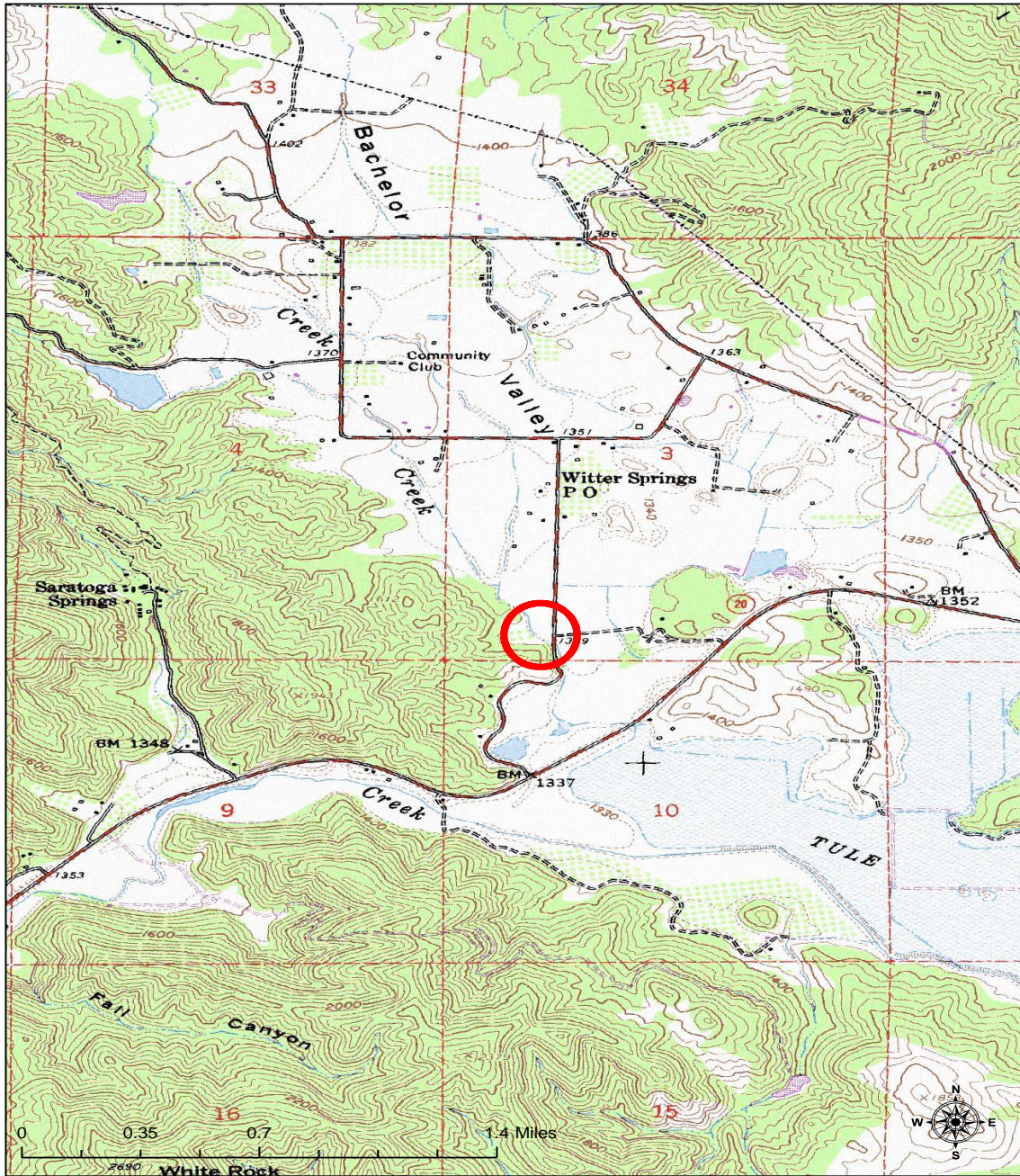


Figure 3. Cooper Creek Fish Rescue at Witter Springs Road Crossing, Upper Lake, CA.



Figure 4. Isolated pool in Cooper Creek (Lake County), in June, 2014. Photo by B.Ewing.



Figure 5. Three spine stickleback collected from Cooper Creek (Lake County) in June, 2014. Photo by B. Ewing.

On June 9, 2014, members of the Department, Robinson Rancheria, and Big Valley Rancheria participated in a fish rescue on Adobe Creek upstream of the Merritt Road Crossing (Figures 6 and 7). A small isolated pool that was quickly drying up had been identified by Big Valley Rancheria members as a pool holding CLH. Approximately 389 hitch and 31 suckers were collected during the rescue. Approximately 50 CLH and 4 suckers died during the rescue.

All fish collected at Adobe Creek were collected using various sized dip nets with/without the combination with a Smith-Root Model LR 20 B backpack electrofisher. All fish were then placed into coolers and relocated to the Konocti Vista Casino boat ramp on Clear Lake.

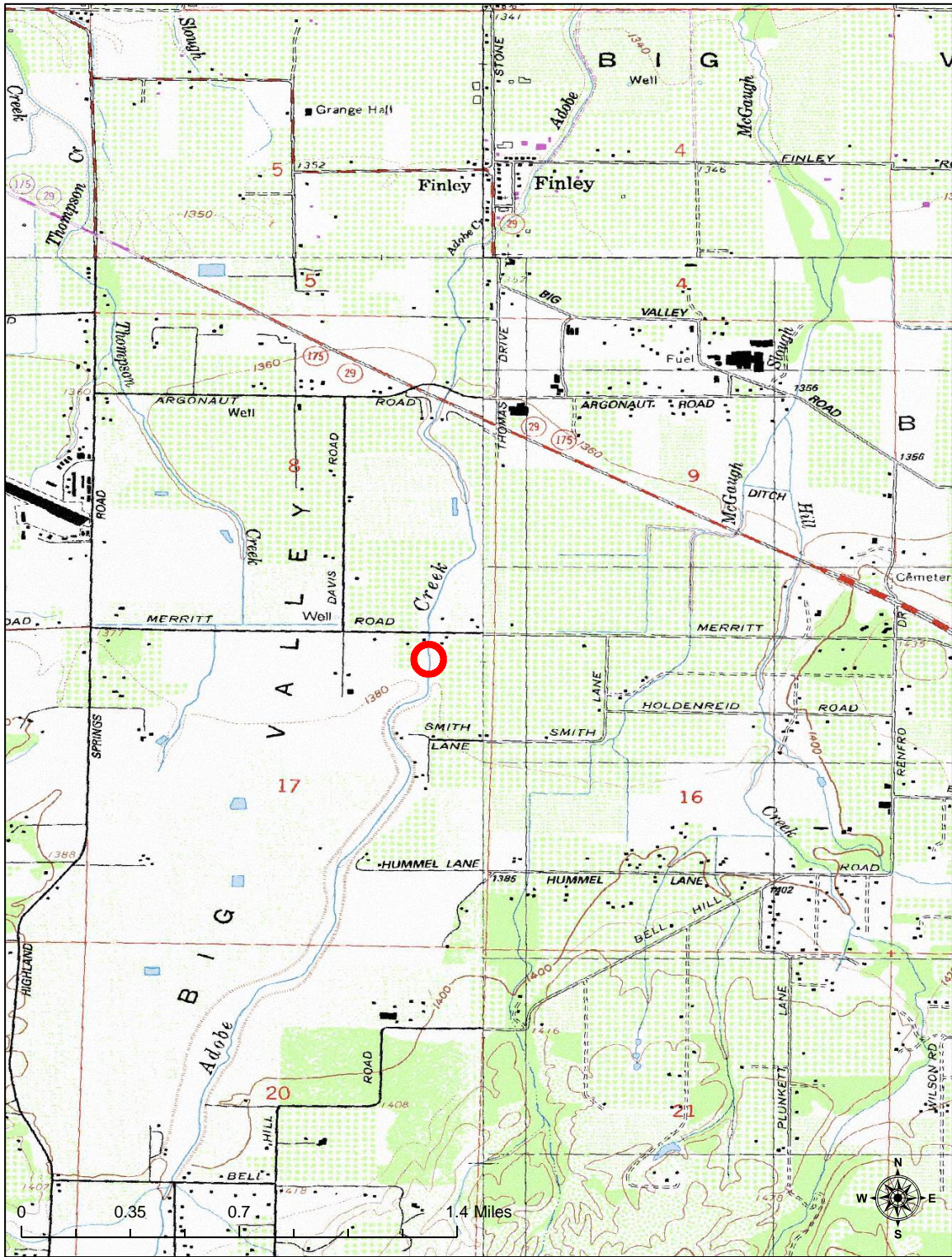


Figure 6. Adobe Creek fish rescue upstream of Merritt Road Crossing (Lake County)(6/9/2014).



Figure 7. Adobe Creek approximately 100 yards upstream of the Merritt Road Crossing in 2014. Photo by J. Gichuki.



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Department of Fish and Wildlife

M e m o r a n d u m

Date: July 27, 2016

To: Kevin Thomas
Environmental Program Manager- Region 2 Fisheries
California Department of Fish and Wildlife

From: Ben Ewing
District Fisheries Biologist
Alpine, Amador, Calaveras, and Lake Counties
Department of Fish and Wildlife

Cc: Fish Files

Re: Clear Lake hitch fish rescue from Cole Creek tributary, Lake County

On March 21, 25, 28, and 31, 2016, California Department of Fish and Wildlife (Department) personnel, along with a member from the Robinson Rancheria at Clear Lake, conducted a multi-day fish rescue on an unnamed tributary to Cole Creek (Lake County). The purpose of the rescues was to capture and relocate Clear Lake hitch (*Lavinia exilicauda chi*) (HCH-C), a threatened species under the California Endangered Species Act (CESA). All HCH-C that were rescued were released at Clear Lake State Park where Cole Creek enters Clear Lake.

On March 18, 2016, a flooded field with a reported 1000 HCH-C had been identified by a property owner of the Green Acres community to a member of the Chi Council for the Clear Lake hitch (Figures 1 and 2). On March 21, 2016, a member of the Department and a member of the Robinson Rancheria, assessed and conducted a fish rescue on the unnamed tributary/agricultural field to Cole Creek upstream of the Clark Road Crossing (Figure 3). Eleven HCH-C were collected using various sized dip nets and placed into a cooler with an operating aerator. No mortalities were documented at the release (Figure 4). Fifty-six HCH-C were found dead in the field. The dead HCH-C were measured for standard and total length in millimeters (mm), checked for passive integrated transponder (P.I.T.) tags, and disposed of off-site. Average total length for the dead HCH-C was 306 mm (12 in.).

On March 25, 2016, members of the Department and a member of the Robinson Rancheria conducted a second fish rescue on the unnamed tributary/agricultural field to Cole Creek upstream of the Clark Road Crossing. A total of 206 HCH-C were collected using a backpack electrofisher and various sized dip nets and placed into a cooler with an operating aerator. Three mortalities were documented at the release.

On March 28, 2016, members of the Department conducted a third fish rescue on the unnamed tributary/agricultural field to Cole Creek upstream of the Clark Road Crossing. A total of 339 HCH-C were collected using a backpack electrofisher and various sized dip nets and placed into a cooler with an operating aerator. Three mortalities were documented at the release.

On March 31, 2016, members of the Department conducted a fourth and final fish rescue on the unnamed tributary/agricultural field to Cole Creek upstream of the Clark Road Crossing. A total of 108 HCH-C were collected using a backpack shocker and various sized dip nets and placed into a cooler with an operating aerator. Three mortalities were documented at the release.



Figure 1. Agricultural field off Glebe Road, Kelseyville, Lake County (3/21/2016).



Figure 2. Unnamed tributary to Cole Creek off Glebe Road, Kelseyville, Lake County (3/21/2016)

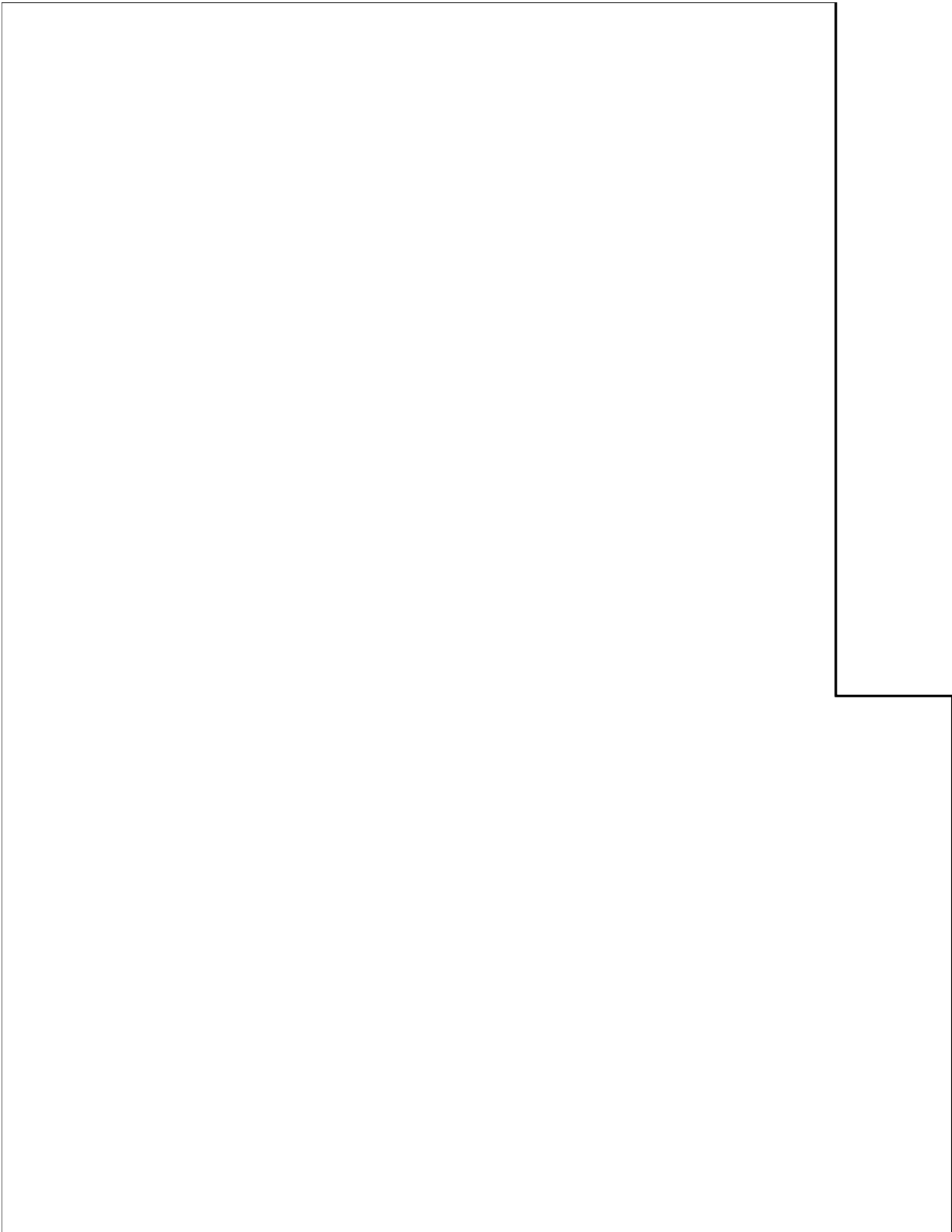




Figure 4. One of 11 HCH-C being released at the Cole Creek mouth on 3/21/2016.

Due to the added stress of measuring and tagging the rescued HCH-C, the Department chose to exclude that from the rescue. Although rescued fish were not measured or tagged, they were scanned for P.I.T. tags that had previously been injected into the HCH-C. One HCH-C rescued was a recapture that was tagged earlier in 2016 from Kelsey Creek.



State of California
Department of Fish and Wildlife

M e m o r a n d u m

Date: July 9, 2018

To: Sarah Mussulman
Senior Environmental Scientist, Supervisor
California Department of Fish and Wildlife

From: Ben Ewing
District Fisheries Biologist
Alpine, Amador, Calaveras, and Lake Counties
Department of Fish and Wildlife

Cc: Region 2 Fish Files

Re: Clear Lake hitch fish rescue from Cole Creek, Lake County

On May 9, 2018, California Department of Fish and Wildlife (Department) personnel, along with members from the Robinson Rancheria at Clear Lake, conducted a fish rescue on Cole Creek (Lake County). The purpose of the rescue was to capture and relocate Clear Lake hitch (*Lavinia exilicauda chi*) (HCH-C), a threatened species under the California Endangered Species Act (CESA). All HCH-C that were rescued were released at Clear Lake State Park where Cole Creek enters Clear Lake.

Prior to May 9, 2018, a section of Cole Creek occupied by numerous young of the year HCH-C was identified by a member of the Robinson Rancheria at Clear Lake who continued to closely monitor the area. By early May, the creek level was dropping daily, and it appeared that the area containing the HCH-C was likely to dry completely in the near future. Additionally, Cole Creek was no longer had a continuous flow, but rather was broken up into isolated pools (Figure 2). On May 9, 2018, a member of the Department and three members of the Robinson Rancheria, assessed and conducted a fish rescue on a small pool that was drying up in Cole Creek, downstream of the Clark Road Crossing (Figure 1). Approximately 3,114 HCH-C were collected using various sized dip nets and placed into a cooler with an operating aerator (Figures 2 and 3). The fish were then transported downstream to better habitat near the confluence with Clear Lake.

Due to the large number of HCH-C collected and the added stress of measuring HCH-C, the Department chose to exclude that from the rescue. Approximately 500 mortalities were documented at the release site. It is likely the high air and water temperature (no official temperatures were taken), combined with the fragile nature of HCH-C at this early life stage contributed to the high mortality rate. Although there were more mortalities than the Department and the tribe would have preferred, there would have been 100% mortality if the Department and tribe had not worked together on this rescue.



Figure 1. Cole Creek rescue site and release site at Clear Lake State Park, Lake County on May 9, 2018.



Figure 2. Fish rescue site on Cole Creek, Kelseyville, Lake County (5/9/2018).



Figure 3. Robinson Rancheria tribal member moving hitch from Cole Creek pool to aerated cooler, Kelseyville, Lake County (5/9/2018).



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From: Ben Ewing
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Cc: Region 2 Fish Files

Re: Clear Lake hitch fish rescue from Thompson Creek, Lake County

On May 2, 2019, California Department of Fish and Wildlife (Department) personnel, along with members from the Robinson Rancheria at Clear Lake, conducted a fish rescue on Thompson Creek (Lake County). The purpose of the rescue was to capture and relocate Clear Lake hitch (*Lavinia exilicauda chi*) (HCH-C), a threatened species under the California Endangered Species Act (CESA). All HCH-C that were rescued were released at Rodman Slough as it enters Clear Lake.

Prior to May 2, 2019, a section of Thompson Creek occupied by 16 adult HCH-C were identified by a member of the Robinson Rancheria at Clear Lake. The Robinson Rancheria member continued to closely monitor the area. By early May, the creek level was dropping daily, and it appeared that the area containing the HCH-C was likely to dry completely (Figure 1). Additionally, Thompson Creek no longer had continuous flow, but was broken up into isolated pools. On May 2, 2019, a member of the Department and two members of the Robinson Rancheria, assessed and conducted a fish rescue on a small pool that was drying up in Thompson Creek, upstream of the Highland Springs Road Crossing (Figure 2). Thirteen of the 16 trapped HCH-C were collected using various sized dip nets and placed into a cooler with an operating aerator (Figure 3). The fish were then transported to better habitat near the Rodman Slough confluence with Clear Lake (Figure 2).

The HCH-C were scanned for Passive Integrated Transponder (P.I.T) tags, but no HCH-C had a prior tag. There were no reported mortalities for the HCH-C rescued.



Figure 1. Location of HCH-C rescue site on Thompson Creek, Lake Co. on May 2, 2019.

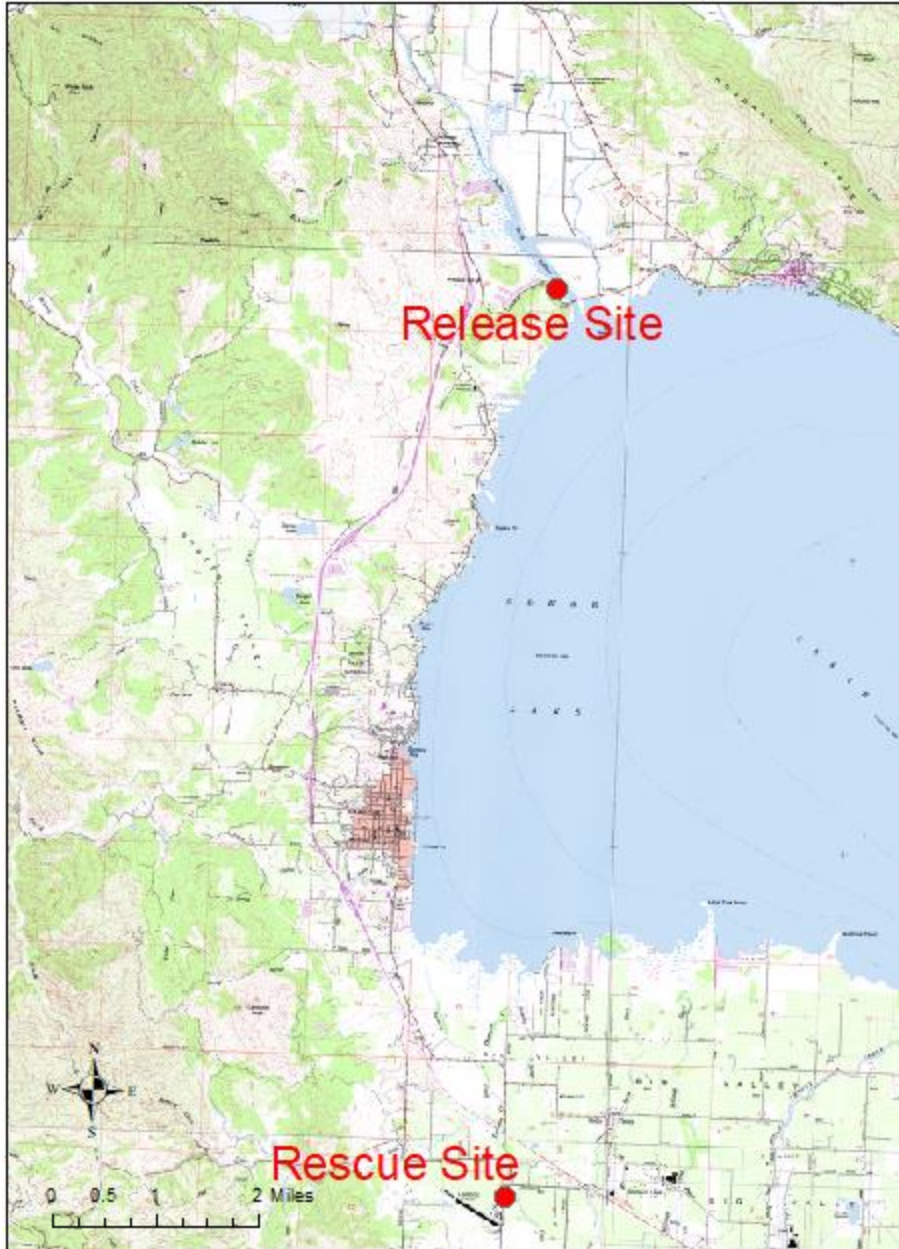


Figure 2. Clear Lake hitch rescue (Thompson Creek) and release (Rodman Slough) sites (5/2/2019).



Figure 3. Fish rescue site on Thompson Creek, Lakeport, Lake County (5/2/2019).