



Memorandum

Date: February 28, 2015

To: Kevin Thomas
Senior Environmental Scientist, Supervisor (California Department of Fish and Wildlife)

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

Subject: Summary of Brush Shelter Habitat Placement in New Hogan Reservoir

The Department of Fish & Wildlife (Department), in cooperation with U.S. Army Corps of Engineers (Army Corps) placed 24 brush shelter habitats into New Hogan Reservoir (Calaveras County) on March 11, 2015. The brush shelter habitats were composed of repurposed Christmas trees and wood pallets received as a donation from a local Christmas tree farm in Citrus Heights, CA. The number of Christmas trees used for each brush shelter ranged from two to nine depending on the size of the trees.

Brush shelter habitats were created by drilling a 1/2 inch hole into the trunk of each tree. Wood pallets required no holes drilled. Depending on the overall size of the brush shelter habitat, up to three concrete or solid round bar anchors were secured to each with 3/8" polypropylene rope in order to sink them (Figure 1). The types of solid round bar weights weighed anywhere from 30 lb. to approximately 100 lbs. each. The brush shelter habitats were then taken to various locations on New Hogan Reservoir using a Department boat (Figure 2).



Figure 1. Christmas trees used for habitat at New Hogan Reservoir (3/11/2015).



Figure 2. North Shore Ramp at New Hogan Reservoir (3/11/2015).

Global Positioning Satellite (GPS) coordinates were recorded at each spot where a brush shelter habitat was placed into New Hogan Reservoir. Additional data on the number of Christmas trees per habitat was also recorded. To the best of the Department and Army Corp's ability, habitats were best placed within a localized area using a set transect line parallel to the shoreline. This was done to create "communities" that increase localized productivity that contribute to maintaining the warmwater fisheries, to place them in a consistent lake level where fish could utilize them, and to make their locations easier to document. All habitats were placed within areas to allow anglers relatively safe access where underwater structure would likely not damage their boats, and minimize potential hazards to boaters and swimmers.

Table 1 identifies the number of brush shelters, number of trees per brush shelter, and locations of the brush shelters that were placed into New Hogan Reservoir.

Table 1. Number of brush shelters, number of trees per brush shelter, and the locations of the brush shelters that were dropped into New Hogan Reservoir on March 11, 2015.

| Brush Shelter | Number of trees | Number of wood pallets | GPS Point | |
|---------------|-----------------|------------------------|--------------|---------------|
| | | | Latitude (N) | Longitude (W) |
| 1 | 5 | | 38.14052621 | -120.802616 |
| 2 | 6 | | 38.140231 | -120.802948 |
| 3 | 4 | | 38.1396705 | -120.802692 |
| 4 | 6 | | 38.13932408 | -120.802497 |
| 5 | 6 | | 38.13875478 | -120.802491 |
| 6 | 8 | | 38.13829537 | -120.802117 |
| 7 | 7 | | 38.13793687 | -120.801734 |
| 8 | 2 | | 38.1378663 | -120.801788 |
| 9 | 3 | | 38.13815497 | -120.801958 |
| 10 | 2 | | 38.13856786 | -120.802416 |
| 11 | 2 | | 38.13904957 | -120.802611 |
| 12 | 3 | | 38.14001374 | -120.802845 |
| 13 | 3 | | 38.14046343 | -120.802853 |
| 14 | 2 | | 38.14039101 | -120.80248 |
| 15 | 2 | | 38.14021541 | -120.802437 |
| 16 | 8 | | 38.17327171 | -120.768417 |
| 17 | 9 | | 38.17362375 | -120.768415 |
| 18 | 6 | | 38.17388568 | -120.768389 |
| 19 | 8 | | 38.17412918 | -120.768466 |
| 20 | 6 | | 38.17437611 | -120.768137 |
| 21 | 7 | | 38.17468246 | -120.768029 |
| 22 | 6 | | 38.17490517 | -120.767916 |
| 23 | 7 | | 38.17518555 | -120.767799 |
| 24 | 2 | 4 | 38.17533717 | -120.767551 |

The habitats were placed in two different areas on the reservoir with safe access for the boats. The Department and Army Corps tried to put the brush shelter habitats along the set transect line in 20-25 feet of water using the onboard depth finder. The habitats were placed at these depth ranges in order to compensate for the predicted decrease in lake level in the coming months, yet still provide habitat for various warmwater fish species. The Department will try to use scuba certified fishery biologists to video and photograph the brush shelter habitats later this year to document fish usage. Information gathered from scuba surveys will be recorded and used in future fishery habitat management decisions.

Cc: Leah Peterson (Army Corps of Engineers)
Jay Rowan (California Department of Fish and Wildlife)
Brad Smith (Abel's Christmas Tree Farm)