



Memorandum

Date: July 8, 2016

To: Kevin Thomas
Environmental Program Manager, Region 2 Fisheries (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 26 brush shelter habitats into New Hogan Reservoir (Calaveras County) on July 6, 2016. The brush shelter habitats are composed of manzanita wood as donations from a local member of the Calaveras Fish and Game Commission (Figure 1). The number of branches of manzanita used for each brush shelter ranged from four to twelve depending on the size of the branches. This was the second consecutive year of the brush shelter habitat placement project.

Brush shelter habitats were created by drilling a 1/2 inch hole into the base of each branch. One concrete cinder block was secured to each shelter with 3/8" polypropylene rope in order to sink them. The brush shelter habitats were then taken to various locations on New Hogan Reservoir using a Department boat (Figure 2).



Figure 1. Manzanita used for fish habitat enhancement at New Hogan Reservoir on July 6, 2016.



Figure 2. Manzanita wood used for habitat at New Hogan Reservoir (7/6/2016).

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 branches per habitat was also recorded. To the best of the Department and Army Corp's ability, habitats were placed within a localized area using a set transect line consistent with the lake bottom contour. 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 branches 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 July 6, 2016.

GPS Point	Coordinates	Number of limbs
79	38.15637 N, 120.81225 W	6
80	38.15626 N, 120.81260 W	8
81	38.15612 N, 120.81252 W	8
82	38.15563 N, 120.81223 W	8
83	38.15588 N, 120.81088 W	5
84	38.15611 N, 120.81077 W	7
85	38.15611 N, 120.81053 W	7
86	38.15612 N, 120.81019 W	8
87	38.15546 N, 120.81212 W	6
88	38.15561 N, 120.81223 W	4
89	38.15586 N, 120.81238 W	8
90	38.15594 N, 120.81223 W	6
91	38.15045 N, 120.81037 W	8
92	38.15042 N, 120.81031 W	9
93	38.15039 N, 120.81019 W	6
94	38.15038 N, 120.81017 W	6
95	38.14906 N, 120.80952 W	7
96	38.14905 N, 120.80953 W	8
97	38.14845 N, 120.80943 W	5
98	38.14848 N, 120.80944 W	11
99	38.14850 N, 120.80946 W	5
100	38.14849 N, 120.80938 W	6
101	38.14826 N, 120.80924 W	12
102	38.14830 N, 120.80924 W	8
103	38.14835 N, 120.80925 W	7
104	38.14838 N, 120.80929 W	8

The habitats were placed in different areas on the reservoir with safe access for boats. The Department tried to put the brush shelter habitats along the set transect line in 25 - 30 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 deploy the Diving Safety Program's inland Dive Team of 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)
Karen Waldear (Calaveras Fish and Game Commission)