



State of California
Department of Fish and Wildlife

Memorandum

Date: February 28, 2014

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 Camanche Reservoir

The Department of Fish & Wildlife (Department), in cooperation with East Bay Municipal Water District (EBMUD) placed 66 brush shelter habitats into Camanche Reservoir (Calaveras and Amador County) on February 27, 2014. The brush shelter habitats were composed of repurposed Christmas trees 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 one to four depending on the size of the trees.

Brush shelter habitats were created by drilling a 9/16 inch hole into the trunk of each tree. Depending on the overall size of the brush shelter habitat, up to four concrete or solid round bar anchors were secured to each with ¼" polypropylene rope in order to sink them (Figure 1). The two types of solid round bar weights weighed 30 lb. or 50 lbs. each. The brush shelter habitats were then taken to various locations on Camanche Reservoir using two EBMUD pontoon boats (Figure 2).



Figure 1. Christmas trees used for habitat at Camanche Reservoir (2/27/2014).



Figure 2. South Shore Ramp at Camanche Reservoir (2/27/2014).

Global Positioning Satellite (GPS) coordinates were recorded at each spot where a brush shelter habitat was placed into Camanche Reservoir. Additional data on the number of Christmas trees per habitat was also recorded. To the best of the Department and EBMUD’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 Camanche Reservoir.

Table 1. Number of brush shelters, number of trees per brush shelter, and the locations of the brush shelters that were dropped into Camanche Reservoir on February 27, 2014.

Brush Shelter	Number of trees	GPS Point	
1	2	-121.004077	38.2338
2	2	-121.004094	38.23376
3	2	-121.003954	38.233383
4	3	-121.003301	38.233392
5	2	-121.001839	38.233728
6	2	-121.001258	38.233823
7	2	-121.00133	38.234109
8	2	-121.000017	38.233774
9	3	-120.998894	38.23351
10	3	-120.998173	38.233663
11	3	-120.997142	38.233431
12	3	-120.996765	38.233668
13	3	-120.996492	38.234029
14	2	-120.996312	38.234516
15	2	-120.99605	38.234847
16	3	-120.996135	38.235001
17	3	-120.996279	38.235276
18	2	-120.996357	38.23535
19	1	-120.936604	38.213727
20	2	-120.936737	38.213904
21	3	-120.937191	38.213738
22	3	-120.937795	38.213681
23	2	-120.938194	38.213743
24	3	-120.938256	38.21379
25	1	-120.938711	38.213812
26	3	-120.938778	38.213873
27	2	-120.939104	38.213678
28	2	-120.939942	38.21333

Table 1 cont.

29	3	-120.940546	38.213206
30	2	-120.94101	38.2132
31	2	-120.941483	38.213501
32	3	-120.941681	38.213829
33	3	-120.941957	38.21399
34	4	-120.942488	38.214537
35	2	-120.944712	38.214634
36	2	-120.94558	38.214653
37	2	-120.94718	38.214509
38	2	-120.947291	38.214223
39	3	-120.947164	38.213896
40	3	-120.947109	38.213846
41	2	-120.947153	38.213487
42	1	-120.947271	38.213347
43	2	-120.94771	38.213371
44	3	-120.942693	38.21925
45	2	-120.942297	38.2198
46	4	-120.942677	38.219645
47	3	-120.943621	38.220025
48	3	-120.942723	38.219364
49	1	-120.942872	38.219476
50	3	-120.943073	38.220046
51	2	-120.943074	38.220611
52	1	-120.943289	38.221378
53	3	-120.943308	38.22148
54	3	-120.942349	38.21928
55	1	-120.942486	38.219358
56	2	-120.94275	38.219681
57	2	-120.942924	38.21981
58	2	-120.942862	38.220153
59	2	-120.942844	38.21986
60	2	-120.943064	38.219974
61	1	-120.942774	38.219884
62	2	-120.942742	38.219976
63	3	-120.943097	38.220172
64	1	-120.943176	38.219989
65	2	-120.9432	38.22011
66	1	-120.942658	38.219579

Due to poor weather, including rain and heavy wind, the habitats were placed in three different areas on the reservoir with safe access for the boats. The Department and EBMUD tried to put the brush shelter habitats along the set transect line in 20-25 feet of water, but this was difficult to accomplish due to the high winds. The inconsistency and/or lack of a depth finder on the two boats used in the project made identifying the exact depth of the placed habitat difficult. 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: Mark Bolton (East Bay Municipal Water District)
Steve Boyd (East Bay Municipal Water District)
Greg Whitaker (California Department of Fish and Wildlife)
Jay Rowan (California Department of Fish and Wildlife)
Brad Smith (Abel's Christmas Tree Farm)