

# Memorandum

Date: June 30, 2006

To: Kathy Hill  
Fisheries Management District Supervisor  
Department of Fish and Game  
Region 2  
1701 Nimbus Road, Suite A  
Rancho Cordova, California 95670

From: Department of Water Resources

Subject: 2005 Creel Census at Antelope Lake

In 2005, California Department of Water Resources, Northern District Scientific Aid Jake Nicholas and Retired Annuitant Ralph Hinton conducted an angler survey at Antelope Lake, Plumas County. These surveys were conducted on 21 days from April 30 through October 16, 2005.

During this period, we interviewed 355 anglers who had fished 1,080.5 hours, with an observed catch of 112 rainbow trout and 11 brook trout (0.11 trout per hour), 57 bass (largemouth and smallmouth), 35 black crappie, 10 sunfish (reardear and bluegill), and one brown bullhead. In addition, 65 trout, 279 bass, and 48 other fish (crappie and sunfish) were reported caught, or caught and released.

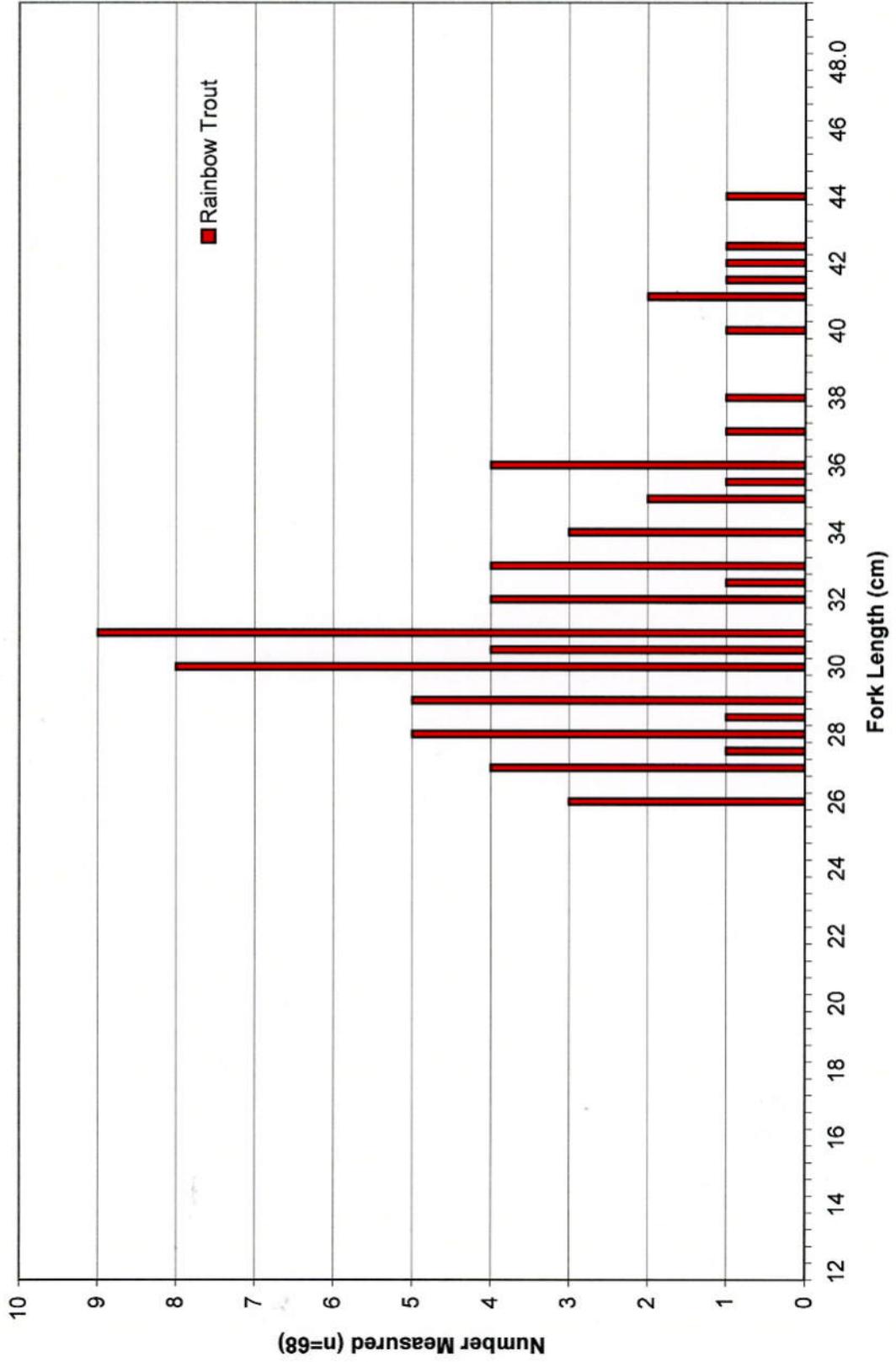
Shore anglers included 217 anglers who fished 424.25 hours and caught 52 rainbow trout, 5 brook trout (0.13 trout per hour), 3 bass, 10 sunfish, and one brown bullhead. They also reported they caught, or caught and released, an additional 20 trout, 49 bass, and 16 sunfish.

Boat anglers included 138 anglers who fished 656.25 hours and caught 60 rainbow trout and 6 brook trout (0.10 trout per hour), 54 bass, and 35 black crappie. They reported they caught (or caught and released) an additional 46 trout and 230 bass, 8 crappie, and 24 sunfish.

Mean fork length of 68 measured rainbow trout (Figure 1) was 32.0 cm (12.6 in). Mean fork length of 5 brook trout (Figure 2) was 28.9 cm (11.4 in). Mean fork length of 23 bass (Figure 3) was 36.3 cm (14.3 in). The largest fish observed was a largemouth bass that measured 46 cm fork length (18.1 in). The largest trout was a rainbow that measured 44 cm (17.3 in).

Nearly 50 percent of the anglers fished exclusively with bait, 40 percent with only lures, 9 percent with some combination of bait, flies, and/or lures, and less than 1 percent who used flies only.

**Figure 1**  
**Length-Frequency of Rainbow Trout Measured at**  
**Antelope Lake, 2005**



**Figure 2**  
**Length-Frequency of Eastern Brook Trout Measured at**  
**Antelope Lake, 2005**

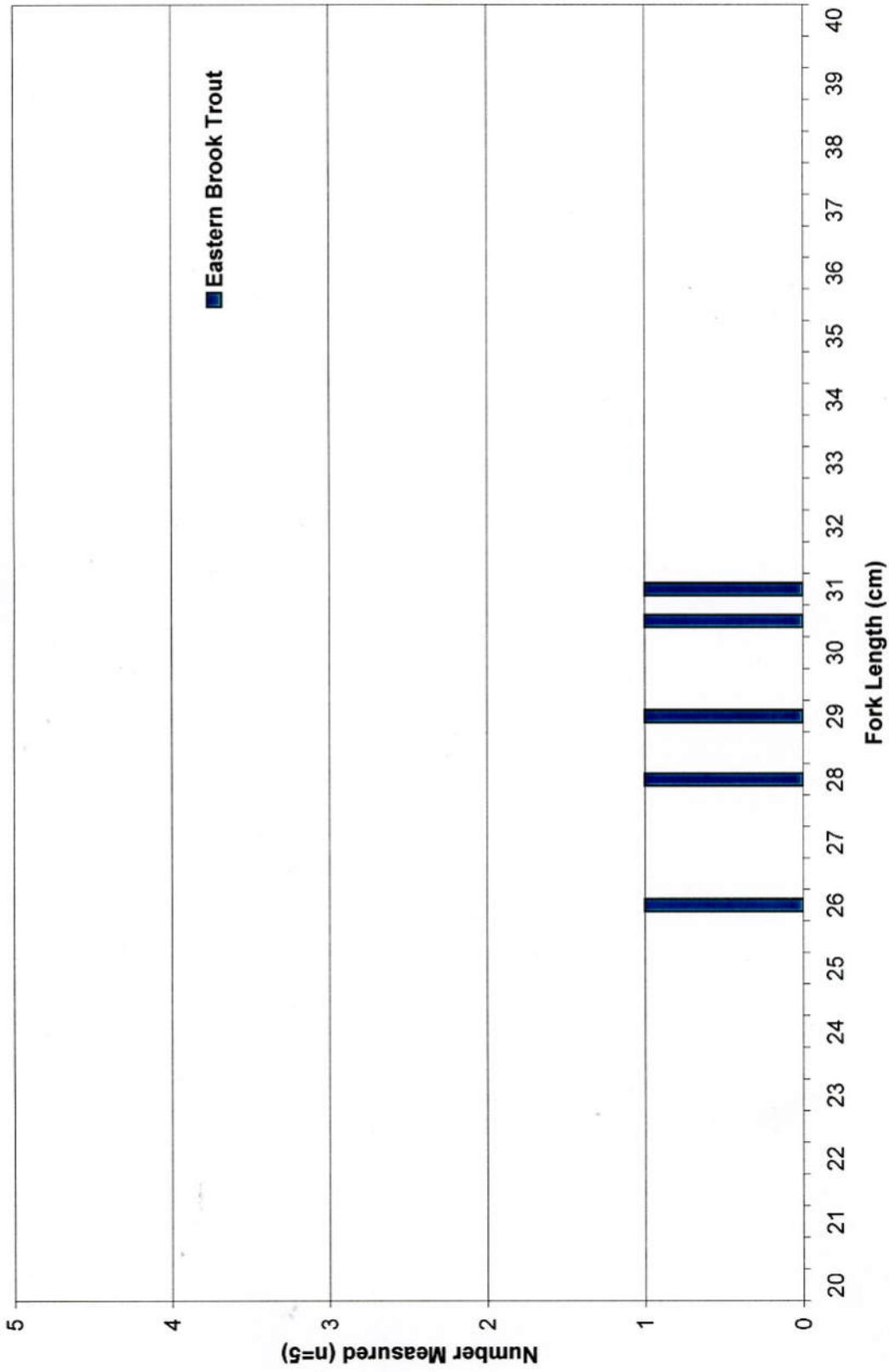
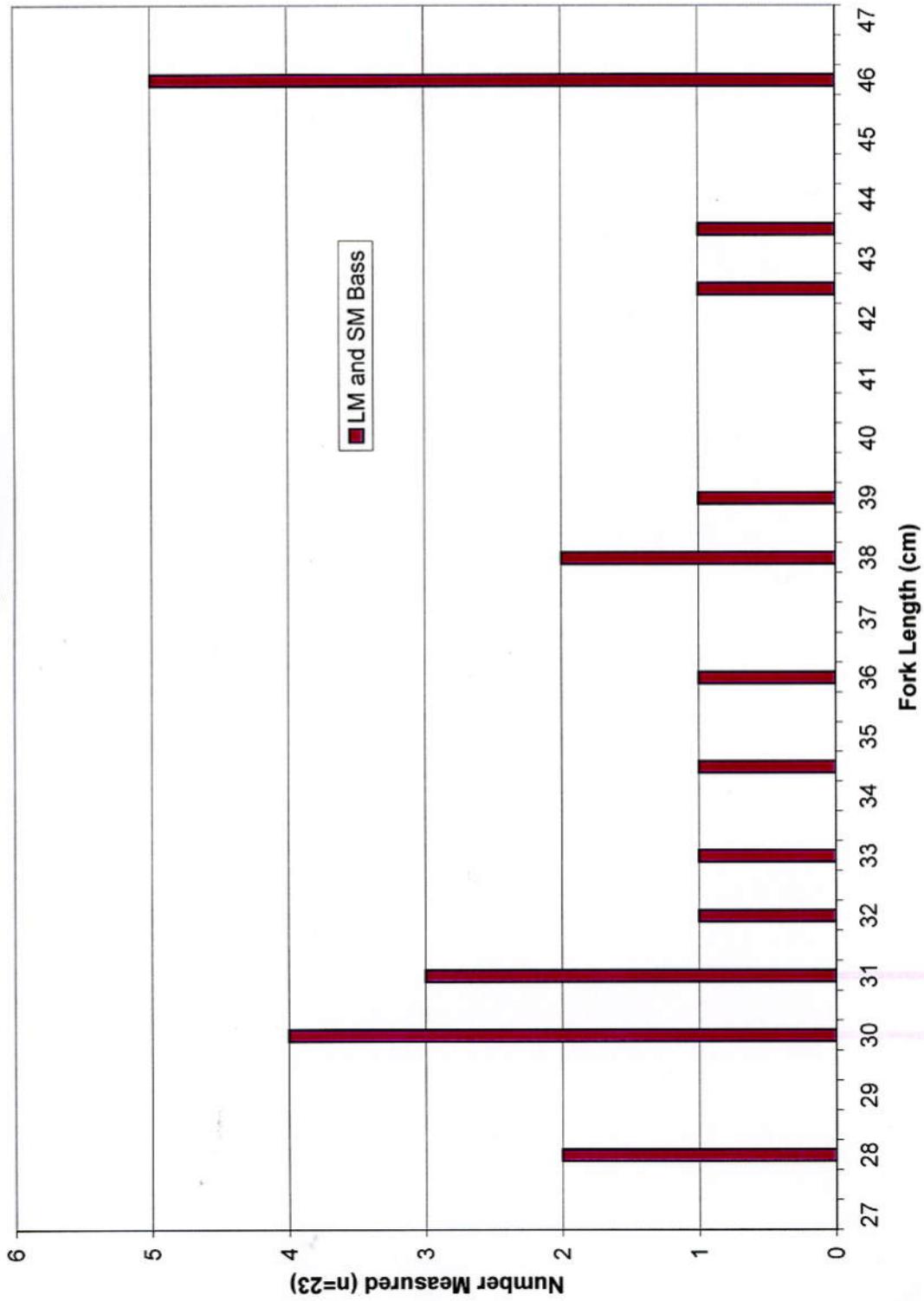


Figure 3  
Length-Frequency of Largemouth and Smallmouth Bass Measured at  
Antelope Lake, 2005



About 46 percent of the anglers originated from "local" Northeast Counties (Lassen and Plumas Counties). Nearly 37 percent were from out-of-State (mostly Reno and Sparks, Nevada). About 10 percent were from the Sacramento Valley Counties (mostly Butte and Glenn Counties), nearly 3 percent were from San Francisco Bay Area Counties, and 1 percent each from the Mountain Counties and San Joaquin Valley Counties. About 2 percent were from Southern California (Figure 4).

These summary data are misleading in some respects because the Antelope Lake fishery has become strongly segmented since a good bass fishery has developed. In recent years, there has been an increase in the percentage of anglers from out-of-State, primarily Nevada (the percentage has doubled since 2002). There are now two primary fisheries, trout and bass, and there are major differences in the characteristics of the anglers in terms of angler effort and origin, shore versus boat angling, terminal gear, and angler success (Table 1).

Smallmouth and largemouth bass were first planted in Antelope Lake in June and July 1981 (912 smallmouth bass, 99 largemouth bass). In 1983, a 29.2 cm (11.5 in) smallmouth bass was observed in a DFG creel census (Flint 1984). Flint thought this fish was an offspring of the 1981 introduction.

Electrofishing in June 1983 revealed only one smallmouth bass from the 1982 year class. A 1984 DFG census reported one smallmouth and three largemouth bass, but again, electrofishing suggested there were not many bass in the lake (Flint 1985). No bass were observed during an extensive DWR creel census in 1986 (31 days and 460 anglers) although anglers reported catching and releasing four largemouth bass (Hinton 1987a). Ninety-four anglers were contacted during a one-day census in April 1987 (Hinton 1987b). One smallmouth bass was observed in the catch and one smallmouth and three largemouth bass were reported caught and released.

Eight years later, the bass population apparently had increased dramatically. Rischbieter (1996) reported about seven times more largemouth bass than trout emigrated from Antelope Lake during periods of spill in Spring 1995. He did not observe any smallmouth bass in the spillway catch.

However, a DWR creel census later in 1995 showed that anglers caught relatively few largemouth bass, and no smallmouth bass were recorded. Review of the 1995 census data suggests that very few anglers were fishing exclusively for bass and only a few for both trout and bass. The fishery still appeared to be predominantly a trout fishery with the bass catch almost incidental (Table 2).

By 1999, a DWR census suggested that the fishery was beginning to change. More bass were observed in the census and it was clear that more anglers were fishing specifically for bass.

This trend continued and intensified by 2002. DWR census data that year showed there were two specific fisheries, trout and bass, with a few anglers fishing for both species. To confirm this trend, we decided to ask anglers what they were fishing for in 2005.

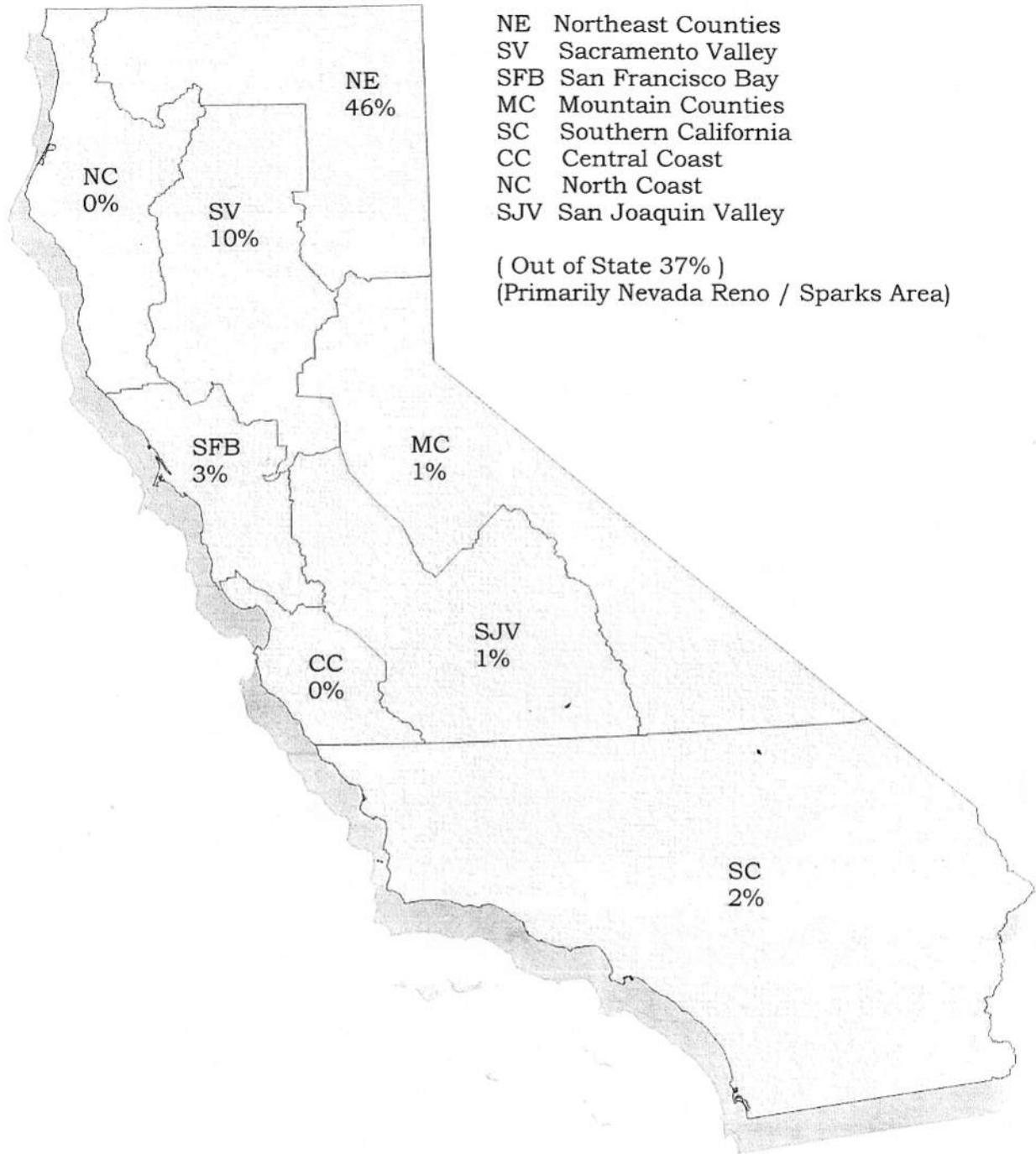


Figure 4 - Antelope Lake Angler Origin by County Groups 2005

TABLE 1

## COMPARISON OF TROUT/BASS AND SHORE/BOAT FISHERIES AT ANTELOPE LAKE - 2005

CHARACTERISTICS	ALL ANGLERS	TROUT ANGLERS	BASS ANGLERS	SHORE ANGLERS	BOAT ANGLERS
<b>General</b>					
Number Anglers	355	191	164	217	138
Number Angler-Hours	1080.5	480.75	599.75	424.25	656.25
Average Hours/Completed Effort	4.47	3.51	5.19	2.75	4.76
<b>Angler Success</b>					
Number Trout Caught	123	122	1	57	66
Trout Caught/Angler Hour	0.114	0.254	0.002	0.134	0.156
Number Bass Caught	57	1	56	3	54
Bass Caught/Angler-Hour	0.053	0.002	0.093	0.007	0.127
Number Crappie/Sunfish Caught	45	0	45	10	35
Crappie-Sunfish Caught/Angler Hour	0.042	0.000	0.075	0.024	0.082
Trout Caught & Released	66	64	2	20	46
Trout C&R/Angler-Hour	0.061	0.133	0.003	0.047	0.108
Bass Caught & Released	279	7	272	49	230
Bass C&R/Angler-Hour	0.258	0.015	0.454	0.115	0.542
Crappie-Sunfish Caught & Released	48	10	38	16	32
Crappie-Sunfish C&R/Angler-Hour	0.044	0.021	0.063	0.038	0.075
<b>Type of Anglers</b>					
Percent Shore Anglers	61%	70%	49%	100%	0%
Percent Boat Anglers	39%	30%	51%	0%	100%
Percent Trout Anglers	54%	100%	0%	62%	41%
Percent Bass Anglers	46%	0%	100%	38%	59%
<b>Terminal Gear</b>					
Bait	50%	71%	26%	72%	15%
Lures	40%	20%	63%	20%	72%
Flies	1%	1%	0%	0%	2%
Combinations	9%	8%	11%	8%	11%
Total	100%	100%	100%	100%	100%
<b>Angler Origin</b>					
NE Counties	46%	41%	51%	46%	46%
Other California	16%	23%	8%	20%	10%
Nevada and Other States	38%	36%	41%	34%	44%
Total	100%	100%	100%	100%	100%

TABLE 2

CHARACTERISTICS	COMPARISON OF TROUT/BASS FISHERIES AT ANTELOPE LAKE - 1995 - 2005											
	2005			2002			1999			1995		
	ALL ANGLERS	TROUT ANGLERS	BASS ANGLERS	ALL ANGLERS	TROUT ANGLERS	BASS ANGLERS	ALL ANGLERS	TROUT ANGLERS	BASS ANGLERS	ALL ANGLERS	TROUT ANGLERS	BASS ANGLERS
<b>General</b>												
Number Anglers	355	191	164	260	184	76	100	73	27	248	236	12
Number Angler-Hours	1080.5	480.75	599.75	872.25	577.75	294.5	362.75	213.75	149.0	481.5	451.5	30
Average Hours/Completed Effort	4.47	3.51	5.19	5.23	5.15	5.43	3.93	2.64	5.48	2.29	2.29	2.33
<b>Angler Success</b>												
Number Trout Caught	123	122	1	106	104	2	83	83	0	83	79	4
Trout Caught/Angler-Hour	0.114	0.254	0.002	0.122	0.180	0.007	0.229	0.388	0.000	0.172	0.175	0.133
Number Bass Caught	57	1	56	20	2	34	24	1	23	11	3	8
Bass Caught/Angler-Hour	0.053	0.002	0.093	0.023	0.003	0.115	0.066	0.005	0.154	0.023	0.007	0.267
Number Crappie/Sunfish Caught	46	0	45	0	18	2	0	0	0	3	3	0
Crappie-Sunfish Caught/Angler-Hour	0.043	0.000	0.075	0.000	0.031	0.007	0.000	0.000	0.000	0.006	0.007	0.000
Trout Caught & Released	66	64	2	33	33	0	6	6	0	2	2	0
Trout C&R/Angler-Hour	0.061	0.133	0.003	0.038	0.057	0.000	0.017	0.028	0.000	0.004	0.004	0.000
Bass Caught & Released	279	7	272	182	20	162	18	0	18	7	7	0
Bass C&R/Angler-Hour	0.258	0.015	0.454	0.209	0.035	0.550	0.050	0.000	0.121	0.015	0.016	0.000
Crappie-Sunfish Caught & Released	48	10	38	157	24	133	4	0	4	9	9	0
Crappie-Sunfish C&R/Angler-Hour	0.044	0.021	0.063	0.180	0.042	0.452	0.011	0.000	0.027	0.019	0.020	0.000
<b>Type of Anglers</b>												
Percent Shore Anglers	61%	70%	49%	70%	70%	71%	47%	67%	15%	56%	58%	25%
Percent Boat Anglers	39%	30%	51%	30%	30%	29%	53%	33%	85%	44%	42%	75%
Percent Trout Anglers	54%	100%	0%	71%	100%	0%	73%	100%	0%	97%	100%	75%*
Percent Bass Anglers	45%	0%	100%	29%	0%	100%	27%	0%	100%	3%	0%	25%*
<b>Terminal Gear</b>												
Bait	50%	71%	26%	56%	60%	49%	43%	55%	11%	55%	58%	0%
Lures	40%	20%	63%	23%	18%	36%	32%	20%	63%	15%	16%	0%
Flys	1%	1%	0%	1%	1%	0%	0%	0%	0%	1%	1%	0%
Combinations	9%	8%	11%	20%	21%	16%	25%	25%	28%	29%	25%	100%
Total	100%	100%	100%	100%	100%	101%	100%	100%	100%	100%	101%	100%
<b>Angler Origin</b>												
NE Counties	46%	41%	51%	62%	60%	68%	40%	36%	52%	42%	41%	50%
Other California	16%	23%	8%	20%	24%	11%	35%	48%	0%	48%	49%	50%
Nevada and Other States	38%	36%	41%	18%	16%	21%	25%	16%	48%	10%	10%	0%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

\*Fishing for both Trout and Bass

Most of the anglers censused at Antelope Lake in 2005 said they were fishing for a specific species, typically either trout or bass. A few fished for crappie or sunfish. Only about 20 anglers (6 percent) said they were fishing for "anything." These tended to be bait fishermen (worms or "Power Bait") and less effective anglers who caught relatively few fish, mostly trout.

Anglers who said they were fishing for trout were much more likely to catch trout and very unlikely to catch bass (see highlights in Table 1). The reverse was true for anglers who said they were fishing for bass. The bass anglers also caught most of the crappie and sunfish, including those caught and released.

Boat anglers were only marginally more effective in catching trout than shore anglers in 2005, but much more effective in catching bass, crappie, and sunfish. It is obvious that anglers seeking trout use very different terminal gear than those seeking bass. Trout anglers fish primarily with bait (usually worms or "Power Bait") while bass anglers fish primarily with lures.

More bass anglers also seem to originate from the local Northeast counties and Nevada, while more trout anglers seem to come from other areas of California. Apparently, the Antelope Lake bass fishery has not yet been "discovered" by the rest of the State.

On July 23, 2005, a bass fishing tournament was held at Antelope Lake that attracted about 20 anglers (10 boats) from Reno. They fished for six hours, then gathered and weighed their catch (usually the five largest bass they caught). The total weight of the top four catches ranged from 14 to 16 pounds. Although this is very limited data, these catches are roughly comparable to the results of tournaments at more renowned bass fisheries, such as Shasta Lake, Clear Lake, Lake Berryessa, or even Lake Oroville.

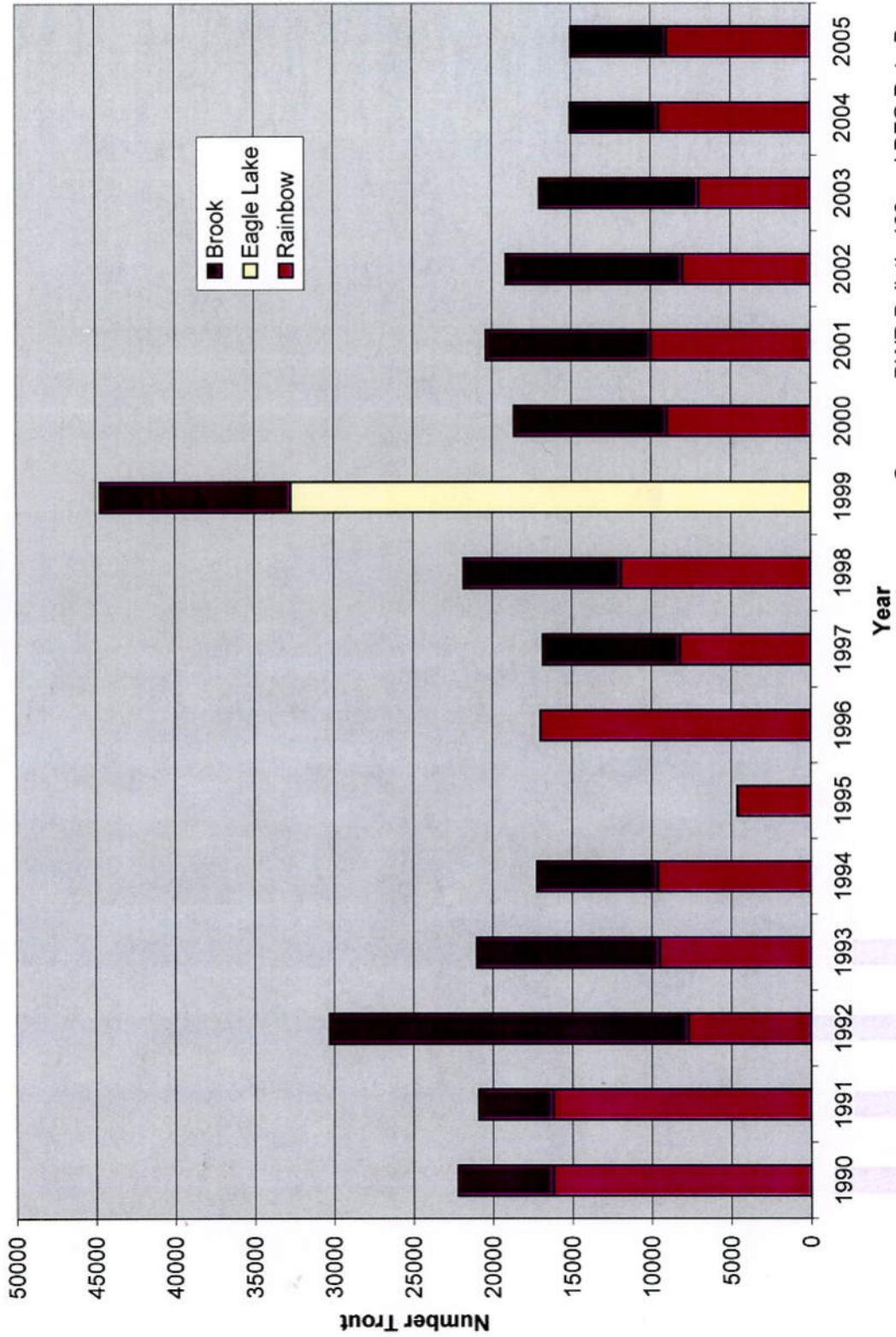
The numbers of catchable-sized trout planted at Antelope Lake during the past 16 years have ranged from 4,600 (1995) to 44,700 (1999) with an average of about 20,000 trout (Figure 5). In addition, fingerling and subcatchable-sized trout were planted in several years.

If you have any questions or require additional information regarding this survey, please contact me at (530) 529-7393 or [hintonr@water.ca.gov](mailto:hintonr@water.ca.gov).



Ralph N. Hinton  
Retired Annuitant

**Figure 5**  
**Catchable-sized Trout Planted at Antelope Lake, 1990-2005**



Sources: DWR Bulletin 132 and DFG Data Base

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