

State of California  
California Department of Fish and Wildlife  
North Central Region

Blue Lake (Upper), Alpine County

2005 Creel Census  
And  
Catchable Trout Evaluation Study



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## **Introduction**

Upper Blue Lake (Upper Blue) in Alpine County is located in the El Dorado National Forest just off Blue Lakes Road and approximately 23 miles south of Lake Tahoe (Figures 1 and 2). Upper Blue covers an area of 344 surface acres and is 8,131 feet above mean sea level (California Fish and Game 1937). The storage capacity for Upper Blue is 7,770 acre feet of water that is managed by Pacific Gas and Electric (PG&E) for hydroelectric uses.



Figure 1. Upper Blue Lake, Alpine County.



Figure 2. Upper Blue Lake in relation to Lake Tahoe.

One purpose-built boat launch facility is available for boat access at Upper Blue. Campgrounds are located around the lake, which makes Upper Blue ideal for multi-day usage. In addition to fishing, the area surrounding the reservoir supports recreational activities including hiking, boating, kayaking, canoeing, and swimming. Upper Blue also provides terrain for snowmobiling, cross-country skiing and ice fishing in the winter. This lake is a well-known trout fishery containing Lahontan cutthroat trout (*Oncorhynchus clarkii henshawi*) (LCT) and rainbow trout (*Oncorhynchus mykiss*) (RT). Stocking events by the California Department of Fish and Wildlife (Department) occur regularly in the summer and early fall, with trout ranging in size from fingerling (2.5 to 5 inches) to catchable (> 9 inches).

In previous, years sub-catchable, catchable, and fingerling RT and LCT were stocked into Upper Blue. The results of this creel census helps the Department assess angler satisfaction, catch efficiency, species composition, and general angler statistics at the lake.

## **Methods**

For the 2005 census, 22 days (11 weekdays; 11 weekend days) in total were selected from early July through late October. The number of days surveyed varied from month to month due to scheduling issues with other nearby lakes where surveys were being conducted. Survey start times were randomly stratified into either an AM or PM sampling period. Anglers were interviewed and asked a standard series of survey questions to determine angling effort, catch rate, size of fish, tagged fish returns, and species caught.

For the fish kept, total length was measured in millimeters (mm) and individuals were also checked for Floy® T-Bar Anchor Tags by Department staff. The tags had been inserted into 400 of the 9,000 RT at American River Hatchery prior to being planted into Upper Blue in 2005. For the fish released by anglers, the species and the total number caught were recorded; no size ranges were taken.

Each angler was asked between one and three standard “yes or no” questions to determine angling satisfaction. Every angler interviewed was asked the question: “Were you

satisfied with your angling experience today?” If an angler reported catching one or more fish, they were asked two follow-up questions: “Were you satisfied with the number of fish caught?” and “Were you satisfied with the size of fish caught?”

## Results

In total, 163 anglers were surveyed. Total effort was 460.8 angling hours, averaging 2.8 hours per angler. A total of 312 fish were caught for a catch per unit effort (CPUE) of 0.68 fish per hour (Table 1).

Table 1. Catch Statistics for Upper Blue Lake, 2005.

Number of Anglers	163
Total Fish Caught	312
Number of Fish per Angler	1.9
Total Hours Fished	460.8
Average CPUE	0.68

A total of 139 anglers (85%) reported fishing from shore, which resulted in a catch per angler of 1.4 (Table 2). Boating as an angling method resulted in a catch per angler of 5.1, but was the least popular method of fishing.

Table 2. The number of anglers and catch per angler based on angling method at Upper Blue Lake, 2005.

Method	Number of Anglers	Catch per Angler
Shore	139	1.4
Boat	24	5.1

Anglers used bait, lures, and flies while fishing at Upper Blue (Table 3). In 2005, 133 anglers (82.0%) used bait to catch trout. The least frequent method used was fly fishing (<0.01%). Lure anglers had the highest catch per angler (3.3 fish per angler). Bait method anglers had the second highest catch per angler (1.6 fish per angler). Fly anglers caught the least fish at 0.00 fish per angler. Of the 312 fish reported caught, 188 were kept (60%) and 124 were released (40%).

Table 3. The frequency of anglers that used each angling method and their corresponding catch per angler at Upper Blue, 2005.

Angling method	Number of Anglers	Catch per Angler
Bait	133	1.6
Lure	29	3.3
Fly	1	0.0

The total length of the fish measured ranged from the 10.0 – 10.9 inch to 18.0 – 18.9 inch total length classes. Of the 165 fish measured, 67 were in the size range of 12.0 – 12.9 inches (Figure 2).

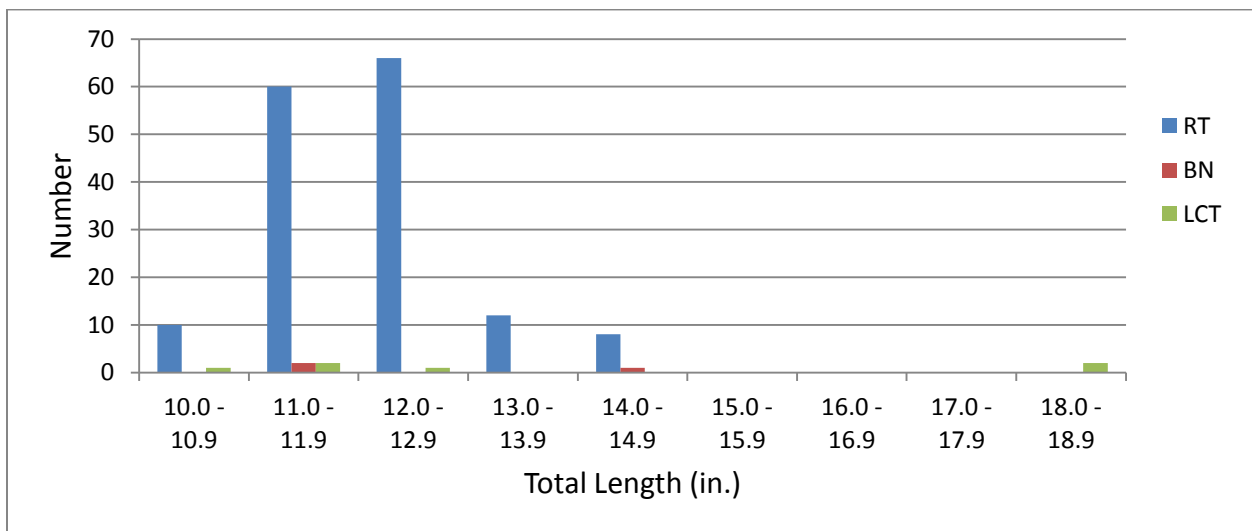


Figure 2. Length-frequency distribution for fish caught and measured at Upper Blue Lake, Alpine County, 2005.

Of the anglers who were asked the survey questions; 96.3% of anglers were satisfied with their overall fishing experience, 80.5% were satisfied with the number of fish, and 89.7% were satisfied with the size of the fish they caught (Table 4).

Table 4. Angler Satisfaction Response Averages for Upper Blue Lake, 2005.

	Yes	No	Percent Satisfied
Overall Fishing Experience	155	6	96.3%
Number of Fish Caught	70	17	80.5%
Size of Fish	78	9	89.7%

There were a total of 9,000 RT that were released into Upper Blue in 2005. Of the 9,000 RT released, 400 were tagged. Of the 400 RT tagged, 132 were returned, yielding a return rate of 33% (Table 5) (CDFG 2005).

Table 5. Tag return results for rainbow trout stocked in select lakes and reservoirs in the Sacramento Valley and Central Region from 2000 - 2005.

Water	Number of Fish Released	Number of Tagged Fish Released	Number of Tags Returned	Return Rate
Fuller Lake	14,250	800	332	42%
Blue Lake, Lower	5,400	300	112	37%
Sugar Pine Reservoir	20,140	1,194	405	34%
Silver Lake	18,100	398	132	33%
Blue Lake, Upper	9,000	400	132	33%
Icehouse Reservoir	10,000	399	128	32%
Scotts Flat Reservoir, Upper	18,900	1,099	256	23%
Loon Lake	13,450	400	93	23%
Rollins Reservoir	12,700	798	185	23%
Jenkinson Lake	22,100	1,194	273	23%
Thermalito Forebay	8,800	797	175	22%
Jackson Meadows Reservoir	12,700	299	62	21%
Caples Lake	13,450	400	78	20%
Union Valley Reservoir	7,300	400	77	19%
Folsom Lake	22,575	1,295	246	19%
Boca Reservoir	23,500	1,200	220	18%
Donner Lake	110,600	1,999	280	14%
Stampede Reservoir	37,000	1,791	110	6%

## Discussion

During the 2005 creel census, Upper Blue had an average CPUE of 0.68 fish per hour. A CPUE of 0.50 fish per hour or greater is considered an acceptable number if fish size is considered satisfactory (Hickey 2013). In 2005, Upper Blue experienced a large drawdown due to work being done on the dam. A combination of the fish allotment and the smaller body of water may have increased the probability of anglers landing fish due to better angler access. The majority of fish caught were from the shore in 2005, but fishing from a boat had a higher



catch rate. This may have been because of boat anglers being able to cover a greater amount of area using techniques such as trolling and downriggers.

In total, 82% of anglers only used bait when targeting trout, resulting in 69% of all fish caught. Of the 312 fish caught, 188 (60%) were kept. Like Lower Blue Lake, which is adjacent to Upper Blue, from the angling method and number of fish kept, it is clear that Upper Blue is a fishery where the majority of anglers are looking for a relaxing, easy place to catch and harvest fish.

The majority of fish harvested were between 11.0 and 13.0 inches. A 2005 creel survey at Lower Blue found that these size classes also represented the majority of fish harvested (Ewing 2017). This suggests that the majority of fish caught are from recent stockings, with few juvenile or holdover fish.

Of the 161 anglers, 96.3% responded that they were satisfied with their overall fishing experience, 83.3% were satisfied with the numbers of fish they were catching, and 89.7% were satisfied with the sizes of fish caught. The nice sizes of fish caught as well as the high catch per angler supports this feedback. Upper Blue is a gorgeous, high elevation reservoir with beautiful scenery which may contribute to the overall satisfaction anglers had while fishing.

Of the 18 waters that had a trout tagging program, Upper Blue was tied for the fourth highest return rate. The high return rate might suggest an efficient utilization of the fish planted by the Department. This may have been the result of the allotment and smaller body of water due to the drawdown, which was also seen at Lower Blue Lake. Upper Blue also experiences high angler pressure in the summer due to many factors such as clean campgrounds, recreation vehicle parking, lakeside camping, smooth road access, and relative close proximity to metropolitan areas. With more pressure, there may be a higher chance of catching a tagged fish.

### **Recommendations**

- When available, CDFW should continue to stock Upper Blue with the same allotment as 2003 – 2005, when approximately 5,800 lbs. of catchable-size RT and 10,000 fingerling LCT were allotted each year.
- Install angler survey boxes (ASB) or conduct another creel survey to which the 2005 data may be compared.

## References

1. Ewing, B. 2005 Lower Blue Lake Creel Census and Catchable Trout Study. 2017. California Department of Fish and Wildlife Region 2 Fish Files. Unpublished.
2. Tag Return Results. California Department of Fish and Game. 2005. California Department of Fish and Wildlife Region 2 Fish Files. Unpublished.
3. Hickey, K. 2013. Milton Lake 2003 – 2012 Angler Survey Box Analysis with a 2012 Creel Survey. Rancho Cordova, CA; California Department of Fish and Wildlife, North Central Region Fish Files. Unpublished.
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