

Phillip H. Baker

Upper Truckee River (El Dorado County) Fish Kill, September 19, 1968

On the afternoon of subject date employees of the Outdoorsman sporting goods store at South Lake Tahoe reported recovering several dozen dead trout in the Upper Truckee near the store, and seeing large numbers of other dead fish. The initial investigation made later that afternoon by wardens Bill Hart and Terry Hickman and myself, accompanied by Fish and Game Commissioner Rans Pearson, was unsuccessful in locating the pollution source. However, we observed small numbers of dead fish below the Highway 50 bridge near the Outdoorsman and immediately downstream from the South Tahoe Public Utility District's sewage lift station at the west end of Barbara Avenue, also in South Lake Tahoe. We did not observe any dead fish in the Tahoe Airport area, suggesting that the pollution source was located between there and the STPUD sewage lift station.

Water samples were collected at four locations during the initial investigation for chemical analyses. The following table summarizes the dissolved oxygen and chlorine analyses run on these samples.

<u>Location Sampled</u>	<u>Time</u>	<u>Dissolved Oxygen</u> ¹	<u>Chlorine</u> ²
200 yards below Hwy 50 bridge, at west end of Ponderosa St.	1615	adequate	none detected
¼ mile below Hwy 50 bridge, at north end of Sunset Dr.	1730	adequate	none detected
STPUD sewage lift station at west end of Barbara Ave.	1815	adequate	0.1 ppm
Tahoe Airport, at south end of runway	1900	adequate	none detected

- 1) Dissolved oxygen levels were determined empirically, using the color intensity of the free iodine as the indicator.
- 2) These are minimum values due to a two to four hour time lag between collection and analysis, and due to the Orthotolidine method of analysis.

The following morning Warden Bill Hart and I located a break in the STPUD sewage export line which was discharging about 2 cfs of warm, chlorinated effluent into the Upper Truckee River. The point of discharge was located approximately 75 feet from the break, and about 100 yards upstream from the STPUD lift station. In addition to photographs, water samples and water temperatures were taken at the break and at several places on the Upper Truckee River. The following table summarizes the water temperature and chlorine analyses data.

<u>Location Sampled</u>	<u>Time</u>	<u>Water Temperature</u>	<u>Chlorine</u>
Break in export line	0835	68½°F.	over 2.0 ppm ¹
Point of discharge into river	0845	68°F.	over 2.0 ppm ¹
Upper Truckee, 250 feet above point of discharge	0910	50½°F.	nons detected
Upper Truckee, 200 feet below point of discharge	0920	52°F.	0.1 ppm

1) Maximum value on the chlorine colorimeter scale was 2.0 ppm.

The temperature differential in the Upper Truckee between the sampling locations above and below the discharge was used to compute the relative size of the discharge at the time of the observations. This method shows that the volume of the discharge was about 9½ percent of the river flow. This relationship could have changed substantially during the period of the discharge due to normal fluctuations in the effluent pumping rates.

A total count of the fish killed was impossible due to highly turbid water resulting from construction activities at the Tahoe Airport, and to the log jams and other debris under which fish could lodge. However, no live fish were observed in the first 1½ miles of river below the discharge. A few small live minnows, which may have found refuge in fresh seepage areas, were seen in the lower portion of the river (also about 1½ miles in length). Moreover, fewer dead trout were seen in the lower portion, but this may have been due to the much deeper, slower moving water found there. Thus the evidence suggests a complete kill in the first 1½ miles below the discharge, and a partial kill in the remaining 1½ miles to Lake Tahoe.

Seven hundred and eighty-eight dead game fish were recovered in the fourstream surveys made during the week following the kill. The following table summarizes these data.

<u>Species</u>	<u>Number Recovered</u>	<u>Weight (lbs.)¹ Recovered</u>	<u>Average² Size (ins.)</u>	<u>Size Range (ins.)</u>
Rainbow trout	554	11.0	3.2	1.8-12.8
Brown trout	220	57.5	6.6	2.5-22.0
Whitefish	13	1.0	5.4	3.3-8.5
Kokanee Salmon	1	2.0	17.7	
	788	71.5		

- 1) Rounded to nearest one-tenth pound.
- 2) Rounded to nearest one-tenth inch.

1969/12/1 897
R27. El Dorado, Upper Truckee River
-3-

In addition, dead nongame fish including Lahontan speckled dace, Tahoe suckers, and Lahontan reddsides were seen, but relatively few were recovered because of the large numbers and effort involved.

For reparation of the game fish, I recommend that the STPUD be requested to plant rainbow and brown trout of subcatchable size in approximately the same proportions in which they were recovered; that is, 70 percent rainbow and 30 percent brown trout. Since it is unlikely that more than 30 percent of the dead game fish were recovered, at least 240 pounds of subcatchables, at 8 to 12 fish per pound, should be planted. At 10 fish per pound this rate amounts to 1,680 rainbow and 720 browns. The rationale for this type of mitigation is the need to maintain the wild Lake Tahoe spawning populations to which most of the dead fish probably belonged.

Phillip H. Baker
Assistant Fishery Biologist
Region II

- cc: Commissioner Rans Pearson
- Captain Jim White
- Warden Bill Hart
- James Ryan
- South Tahoe Public Utility District