

# Chapter 30

## Lake Creek

**Anadromous Stream Catalog Number:**  
111-50-10420-2010

**Location:** Lat. 58°23'29" N.  
Long. 134°37'52" W.  
(6.5 mile Mendenhall Loop Road)

### Description

Lake Creek is the main tributary to Auke Lake (figure 30.1). It drains an area of approximately 3 square miles and is about 4 miles in length. The stream is approximately 15 feet wide and 1 foot deep.

The streambed substrate is mostly gravel with some bedrock. The gradient is moderate, and the water generally runs clear but has a brownish tint during high flows.

### Fish Species Present

Lake Creek has runs of coho, pink, and sockeye salmon, Dolly Varden, cutthroat and rainbow trout.

A fish stocking summary for the Auke Lake system is presented in table 30.1. Salmon migration data for Auke Lake are found in table 30.2. Harvest data for Auke Lake coho salmon are presented in tables 30.3 and 30.4, and Dolly Varden and cutthroat trout migration data are found in table 30.5.

### Fish Habitat

Lake Creek provides the primary spawning habitat in the Auke Lake drainage. The stream has an excellent gravel base and most salmon spawning is known to occur in the lower 2,000 feet of the stream. Dolly Varden and cutthroat trout use habitat further upstream. The stream does provide some rearing

in pools; however, the overall rearing potential of Lake Creek is low, because of its small pools, moderate gradient, and sparse cover. The water is generally clear, and rearing salmonids can easily be observed in the stream. A barrier falls is located approximately 1.25 miles upstream from the mouth.

The instream flow in Lake Creek has been very low the last several

years and, subsequently, spawning success in the stream has been variable. There has been insufficient water in the stream to provide for spawner access in some summers and the stream is believed to have possibly frozen-out during the winters. The reduced instream flow may be due to a build-up of gravel in the stream bed.

Eight juvenile fish traps set on May 7, 1970 caught 5 Dolly Varden, 3 cutthroat trout, and 38 coho.

### Public Use

Lake Creek receives little sport fishing pressure. The Auke Lake drainage is closed to angling for sockeye salmon and Dolly Varden. Even though angling opportunities are restricted by regulations, 750 angler-hours of effort were expended in 1983 and produced a catch of 720 cutthroat trout during the summer. The mouth of Lake Creek in Auke Lake is a favorite fishing area, both in summer and during winter ice fishing.

**Table 30.1.** A history of fish stocking in Auke Lake.

DATE	SPECIES	NUMBER	BROOD SOURCE	HATCHERY
1919	pink salmon	600,000	?	?
08/27/25	cutthroat trout	9,600	Lake Eva, WA	Lake Eva, WA
09/20/27	eastern brook	4,780	?	Yes Bay, AK
10/25/27	eastern brook	7,030		Yes Bay, AK
1928	eastern brook	14,400	?	?
09/15/31	eastern brook	1,050		Yes Bay, AK
1950	grayling	125	McDonald Lk, BC	
08/13/54	rainbow trout	61,000	Kodiak, AK	Auke Cr, AK
08/18/56	rainbow trout	42,000	Kodiak, AK	Auke Cr, AK
05/22/74	sockeye salmon	40,000	Auke Lk, AK	Auke Cr, AK
05/22/74	sockeyesalmon	20,000	Auke Lk, AK	Auke Cr, AK
06/06/75	sockeye salmon	54,000	Auke Lk, AK	Auke Cr, AK
11/79	coho salmon	2,500	Auke Lk, AK	Auke Cr, AK
04/26/83	cutthroat trout	1,256	Auke Lk, AK	Auke Cr, AK
08/03/83	cutthroat trout	4,078	Auke Lk, AK	Auke Cr, AK
11/22/86	cutthroat trout	3,489	Auke Lk, AK	Auke Cr, AK
08/21/87	cutthroat trout	1,725	Auke Lk, AK	Auke Cr, AK
05/06/88	sockeye salmon	100,000	Auke Lk, AK	Auke Cr, AK
08/01/88	sockeye salmon	4,678	Auke Lk, AK	Auke Cr, AK
06/01/89	sockeye salmon	11,200	Auke Lk, AK	Auke Cr, AK
11/06/91	cutthroat trout	2,483	Auke Lk, AK	Auke Cr, AK

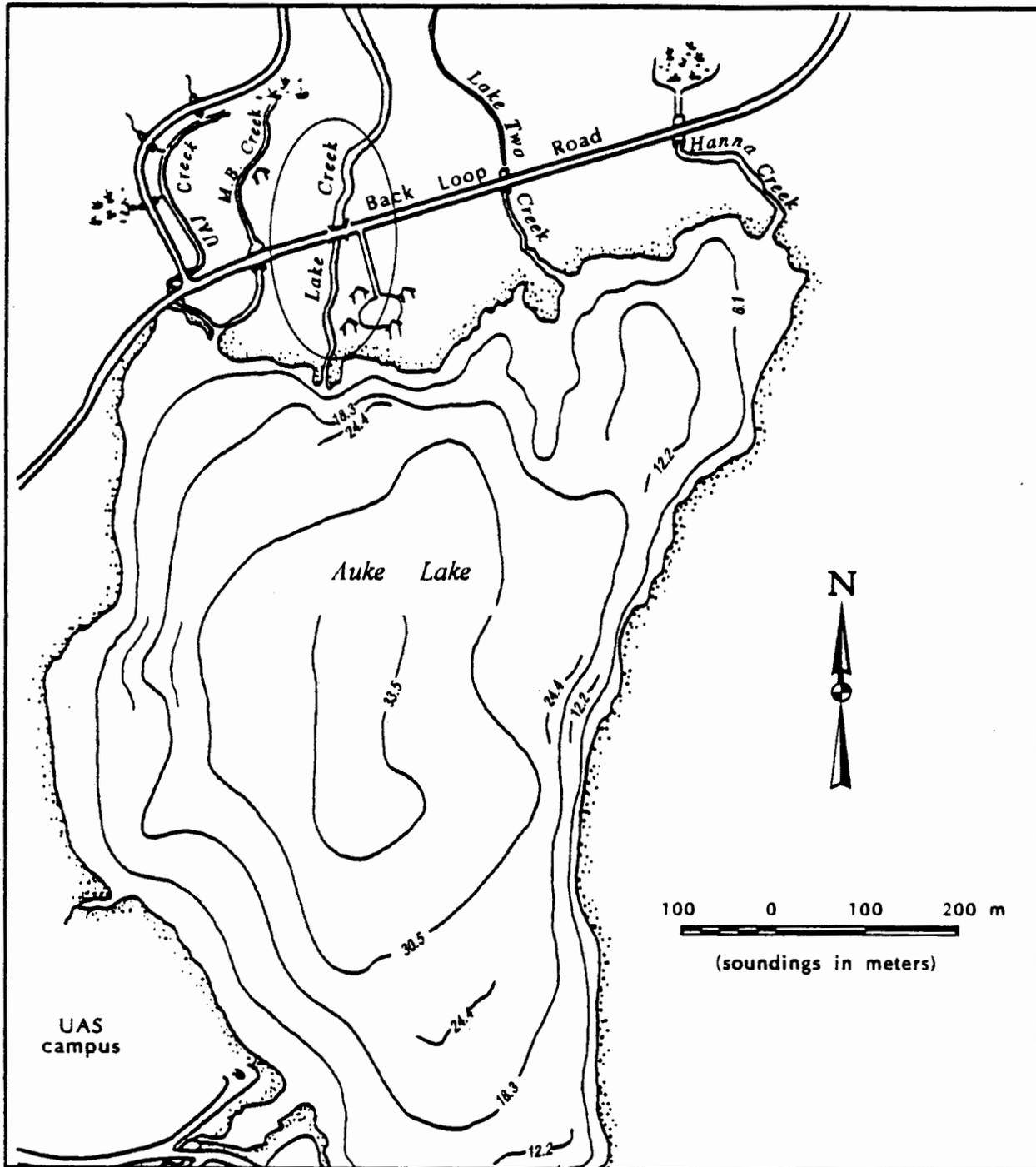


Figure 30.1 Auke Lake and Lake Creek.

### Land Ownership

The lower sections of Lake Creek are bordered by private property and the upper reaches are on the Tongass National Forest.

### Land Uses

The lower section of Lake Creek has been channelized somewhat to

prevent flooding of the adjoining private property. This actually confined the water to a single channel and, prevented the stream meandering as a natural stream does.

The Lake Creek Bridge, which was constructed in 1969, may be responsible for instream flow problems that have occurred during the last

several years; however, this has not been confirmed. Lake Creek could also be vulnerable to future residential development and associated activities on private property located upstream from Mendenhall Loop Road.

One water withdrawal permit is on file for Lake Creek.

**Table 30.2.** Summary of Auke Lake salmon migrations.

YEAR	PINK SALMON		COHO SALMON <sup>2</sup>		SOCKEYE SALMON		CHUM SALMON		KING SALMON ADULTS
	JUV.*	ADULT	JUV.*	ADULT	JUV.*	ADULT	JUV.*	ADULT	
1961	-	-	-	-	90,000	-	-	-	-
1962	-	-	-	-	-	-	-	-	-
1963	-	-	-	-	29,052	6,391	-	-	-
1964	-	-	-	-	62,389	5,465	-	-	-
1965	-	-	-	-	-	6,889	-	-	-
1966	-	-	-	-	-	10,986	-	-	-
1967	-	3,761	-	390	-	5,909	-	78	-
1968	-	2,638	-	-	35,737	7,164	-	-	-
1969	-	-	-	-	24,947	6,131	-	-	-
1970	-	-	-	-	-	7,034	-	-	-
1971	-	2,090	-	916	-	7,673	-	10	-
1972	157,000	1,768	-	1,113	3,388	9,166	-	47	-
1973	74,000	4,948	-	637	-	8,259	-	27	-
1975	268,000	6,260	-	1,147	15,399	4,371	-	5	-
1976	107,595	2,525	-	460	51,972	6,153	-	16	-
1977	119,000	15,848	-	1,781	9,327	16,683	-	17	-
1978	129,194	18,410	-	699 <sup>1</sup>	7,855	3,177	-	17	-
1979	23,270	19,003	-	596 <sup>1</sup>	-	6,022	-	13	-
1980	74,047	20,187	9,951	644 <sup>1</sup>	25,299	4,564	0	118	-
1981	111,416	14,450	7,140	678 <sup>1</sup>	9,183	4,089	0	109	-
1982	118,399	10,653	6,607	458 <sup>1</sup>	1,719	1,334	0	251	-
1983	164,784	24,827	6,721	694 <sup>1</sup>	3,170	1,805	0	310	-
1984	169,552	5,271	7,036	651 <sup>1</sup>	20,251	975	0	1,927	-
1985	110,001	26,317	5,601	942 <sup>1</sup>	11,747	240	7,198	1,852	-
1986	123,887	2,305	5,666	550 <sup>1</sup>	14,503	952	823	1,392	-
1987	43,502	7,944	7,181	662 <sup>1</sup>	17,598	2,829	14,039	1,883	-
1988	113,061	8,140	7,888	756 <sup>1</sup>	19,157	1,337	8,091	1,093	-
1989	116,870	5,016	6,924	502	29,175	2,508	-	-	-
1990	98,355	21,806	5,132	697	28,343	3,383	1,916	270	349
1991	243,037	6,857	5,722	804	25,987	5,408	759	167	202

\* Juveniles.

<sup>1</sup> Since 1978, counts include only adult coho and do not include "jacks."

<sup>2</sup> Tag recovery information on Auke Lake coho salmon is presented in tables 1.3, 1.4, and 1.5 (pp. 13-14).

### Conclusion

Lake Creek is the largest tributary to Auke Lake and provides major spawning habitat for populations of Auke Lake salmonids.

### Recommendations

The water quality of Lake Creek must be maintained. Any future

development along Lake Creek should be located away from the stream. A buffer of natural vegetation should be maintained alongside the stream.

All drainages should be drained away from the stream. Drainage should be filtered to remove sediment and pollutants prior to their

entering the stream. All water withdrawal should be located as far away from the stream as possible.

The watershed should be given the highest level of habitat protection available. ■

**Table 30.3.** Estimated catch and harvest rate of coho salmon returning to Auke Lake in 1989.

FISHERY	CATCH (SE)		EXPLOITATION
			RATE
Troll	565	(37)	50%
Drift gill net	11	(4)	1%
Purse seine	7	(3)	<1%
Juneau marine sport	54	(19)	5%
Total harvest	637	(42)	56%
Escapement	502	(-)	44%
Total return	1,139	(42)	100%

**Table 30.5.** Summary of Dolly Varden and cutthroat emigrants from Auke Lake.

YEAR	OUTMIGRANTS	
	NO. OF DOLLY VARDEN	NO. OF CUTTHROAT TROUT
1970	6,126	-
1980	3,057	85
1981	6,366	157
1982	3,789	157
1983	3,717	226
1984	4,512	302
1985	3,052	161
1986	4,358	138
1987	6,443	942
1988	7,770	690
1989	7,230	471
1990	6,425	506

**Table 30.4.** Estimated harvest rates of coho salmon returning to Auke Lake in various fisheries, 1980-1989. Estimates of harvest in the troll fishery are computed by period.

YEAR	TROLL		DRIFT GILL NET		PURSE SEINE		MARINE SPORT		TOTAL HARVEST		ESCAPEMENT	RETURN
	No.	%	No.	%	No.	%	No.	%	No.	%		
1980	128	15	29	3	0	0	16	2	173	20	698	871
1981	266	27	31	3	9	1	9	1	315	32	678	993
1982	157	21	24	3	117	16	3	0	301	40	447	748
1983	429	34	33	3	8	1	83	7	553	44	695	1,248
1984	379	32	121	10	0	0	43	4	543	46	648	1,191
1985	599	36	71	4	3	0	72	4	745	44	942	1,687
1986	433	44	68	7	0	0	38	4	539	54	453	992
1987	457	37	79	6	0	0	23	2	559	46	668	1,227
1988	308	26	75	6	9	1	48	4	440	37	756	1,196
1989	565	50	11	1	7	1	54	5	637	56	502	1,139
Avg.	351	31	59	5	16	1	37	3	463	41	665	1,128