

ANADROMOUS WATERS CATALOG/ATLAS  
CORRECTION FORM

CORRECTION TO: ATLAS X CATALOG \_\_\_\_\_

REGION: SOUTHCENTRAL

MAP: ANCHORAGE C-8 D-8 Tyonek D-1

WATERWAY NUMBER: 247-41-10200-2120-3020

DESCRIBE CHANGE(S): Deception Creek  
Upper limits of Coho &

Chum use were never defined  
on originally mapping. Set upper  
limits for coho spawning, chum  
spawning AS NOTED ON ATTACHED  
map.

CHANGE REQUESTED BY: Ed Win 3/4/02

DRAFTED/DIGITIZED BY: J. Brown 3/18/02

REVISION CODE: E-7 DATE

NOMINATION NUMBER: 01 550

\*\* ATTACH THIS FORM TO EXISTING NOMINATION FORM IN THE FILE \*\*

## Ed Weiss

**From:** Suzanne Hayes [suzanne\_hayes@fishgame.state.ak.us]  
**Sent:** Tuesday, April 10, 2001 12:50 PM  
**To:** ed\_weiss@fishgame.state.ak.us  
**Cc:** Richard J Yanusz  
**Subject:** RE: Deception Crk Coho / Chum data

Hi Ed,  
Excellent information exists for adult spawning areas in Deception Creek. It's contained table 6 page, page 15 of a report done in 1978 by D. A. Watsjold and L. J. Engel. The fisheries studies report was part of an Environmental Assessment Program for the New Capital City project. It should be in ADF&G habitats library, that's where I got my copy. Hopefully your copy will contain good maps that index the study areas. If not, call me and I'll send you Watsjolds original if you promise to send it right back to me.  
Susie

-----Original Message-----

**From:** Ed Weiss [mailto:ed\_weiss@fishgame.state.ak.us]  
**Sent:** Tuesday, April 10, 2001 12:07 PM  
**To:** suzanne\_hayes@fishgame.state.ak.us  
**Subject:** RE: Deception Crk Coho / Chum data

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Yes, for rearing. I can't infer spawning based on juveniles unless you did some electrofishing or egg pumps or something and came up with some really young juveniles. I.e. egg sacs still not fully absorbed etc. Something that would indicate that spawning was occurring in that area and those fish did not move there from some other area.

Currently it is cataloged for coho rearing fairly far up the drainage but any data for extensions of coho or king rearing would be appreciated.

Do you know if any info exists for adults?

*Edward W. Weiss*

Habitat Biologist  
Habitat & Restoration Division  
Alaska Department of Fish & Game  
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Phone: (907)-267-2305  
FAX: (907)-267-2464  
ed\_weiss@fishgame.state.ak.us

-----Original Message-----

**From:** Suzanne Hayes [mailto:suzanne\_hayes@fishgame.state.ak.us]  
**Sent:** Tuesday, April 10, 2001 9:14 AM  
**To:** ed\_weiss@fishgame.state.ak.us  
**Subject:** RE: Deception Crk Coho / Chum data

will you extend the upper limit if I have observations of rearing juveniles?

-----Original Message-----

**From:** Ed Weiss [mailto:ed\_weiss@fishgame.state.ak.us]  
**Sent:** Monday, April 09, 2001 5:24 PM  
**To:** Suzanne R Hayes  
**Cc:** Cevin L Gilleland; Dennis G Gnath  
**Subject:** Deception Crk Coho / Chum data

Suzie,

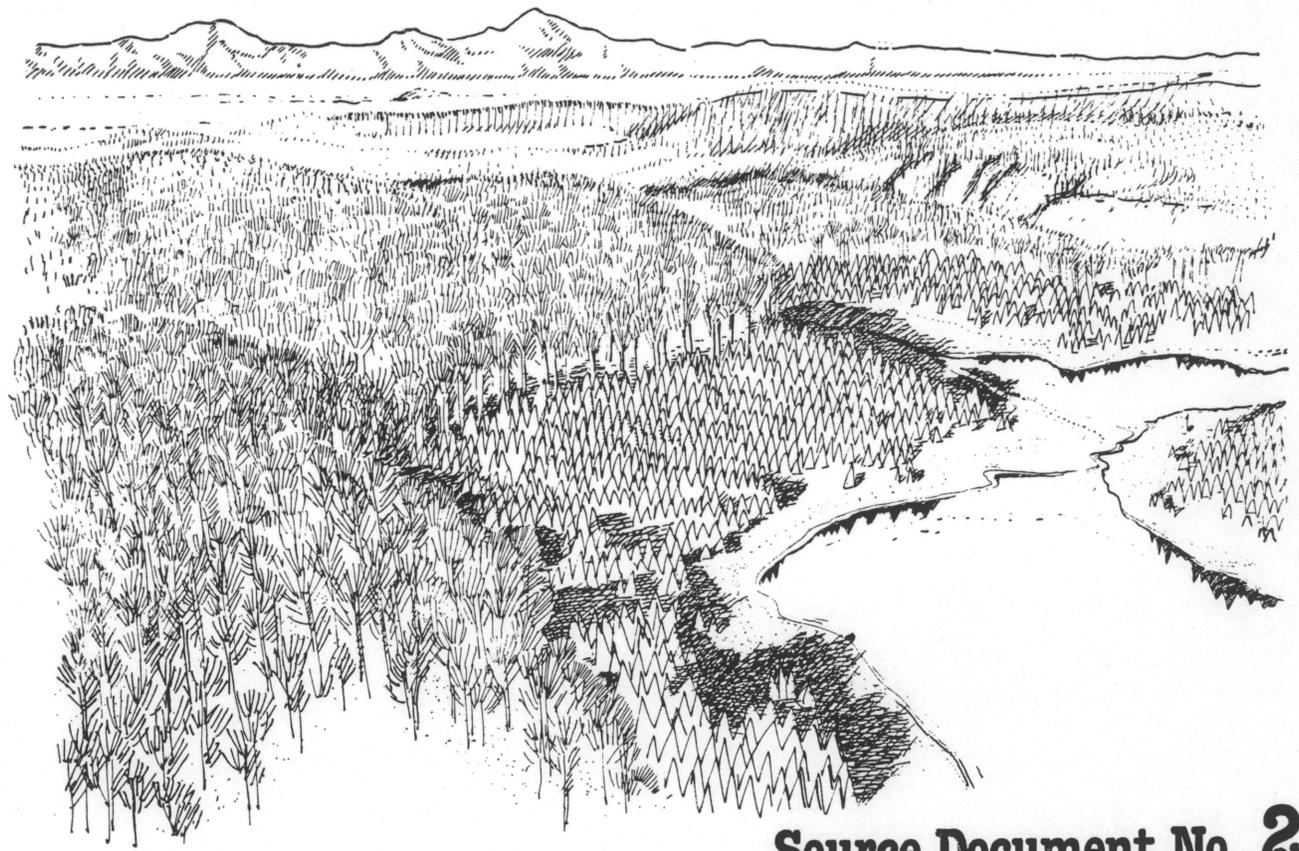
Currently we have Coho & Chum spawning noted at the mouth of Deception Creek (AWC # 247-41-10200-2120-3020) with no upper limit noted for these life stages. Can you provide any data for the upstream limit of Coho and/or Chum spawning in Deception Crk. Without some confirming data I am considering deleting these species life stages from the stream. If you can send a map which shows the upper limit. Thanks.

*Edward W. Weiss*

Habitat Biologist  
Habitat & Restoration Division  
Alaska Department of Fish & Game

Merged with  
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# New Capital City Environmental Assessment Program - Phase 1



Source Document No. 2

## Fish and Wildlife Studies

### Fisheries Studies

Prepared by

**Alaska Dept. of Fish & Game**

### Moose Habitat Analysis

Prepared by

**U.S. Soil Conservation Service**

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Dec. 1978

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linities and hardnesses ranging from 34 to 85. Conductivities generally ranged from 60 to 146 micromhos/cm. There are four tributaries that exhibited chemical characteristics which are considerably higher than all other areas in the drainage. These abnormal conditions were found in Index IA, IB, VIIA and VIIB. These four tributaries had conductivities ranging from 200 to 350 micromhos/cm and slightly higher alkalinities and hardnesses. More investigation would have to be completed in these areas to determine if these conditions are typical for these tributaries. It is beyond the scope of this study to determine what is causing these extremes in water quality since they are probably due to mineral deposits and/or soil conditions through which these tributaries flow.

### Minnow Trapping

Since no inventory work had ever been completed in this drainage a large amount of sampling was necessary to determine fish species abundance. A total of 13,698 hours of minnow trapping were conducted on Deception Creek and its tributaries (Table 10). A total of 12,493 fish were captured and released. Juvenile king salmon were the most abundant species in the area during the sampling period. Dolly Varden were the next most prevalent species followed closely by silver salmon. Very few rainbow trout were captured. When trapping commenced in June, Age 0+ king and silver salmon were too small to be effectively captured by minnow traps, therefore, the catches during this time period do not accurately reflect their numbers. Age I+ king salmon had for the most part moved out of the system on their annual smolt migration. Silver salmon were generally found in low velocity waters such as beaver ponds and side sloughs, which were usually found in the tributaries of Deception Creek. King salmon inhabited higher velocity waters and were usually found in the main stem or larger tributary areas. Both silver salmon and king salmon were found in varying numbers throughout most of the drainage. Dolly Varden were normally found in the upper end of the tributaries and in the upper half of Deception Creek.

To better understand migrational patterns of these species would require year around studies. During the middle of October several days were spent re-trapping Index Areas I, II, III and V to make a comparison with the results of earlier trapping. The October sampling revealed extremely high densities of king salmon which may have resulted in migrations or increase in trapping efficiency due to larger size fish.

### Escapement Surveys

Adult salmon species were enumerated in Deception Creek (Table 11). Pink salmon were by far the most numerous species present with 8,770 observed during foot surveys. As previously mentioned adult salmon counts are to be considered as minimal counts due to differences in adult migration and spawning. The expected number of pink salmon was probably close to 10,000 fish. Chum salmon numbers probably did not exceed 200 fish. King salmon counts were completed on the ground up to the gorge area and a total of 576 were observed. The area above the gorge was not walked but a helicopter was used to determine relative numbers in the upper region of the drainage. It is believed that the 1978 king salmon escapement in the Deception Creek drainage approached 800

PERCENT BY SPECIES

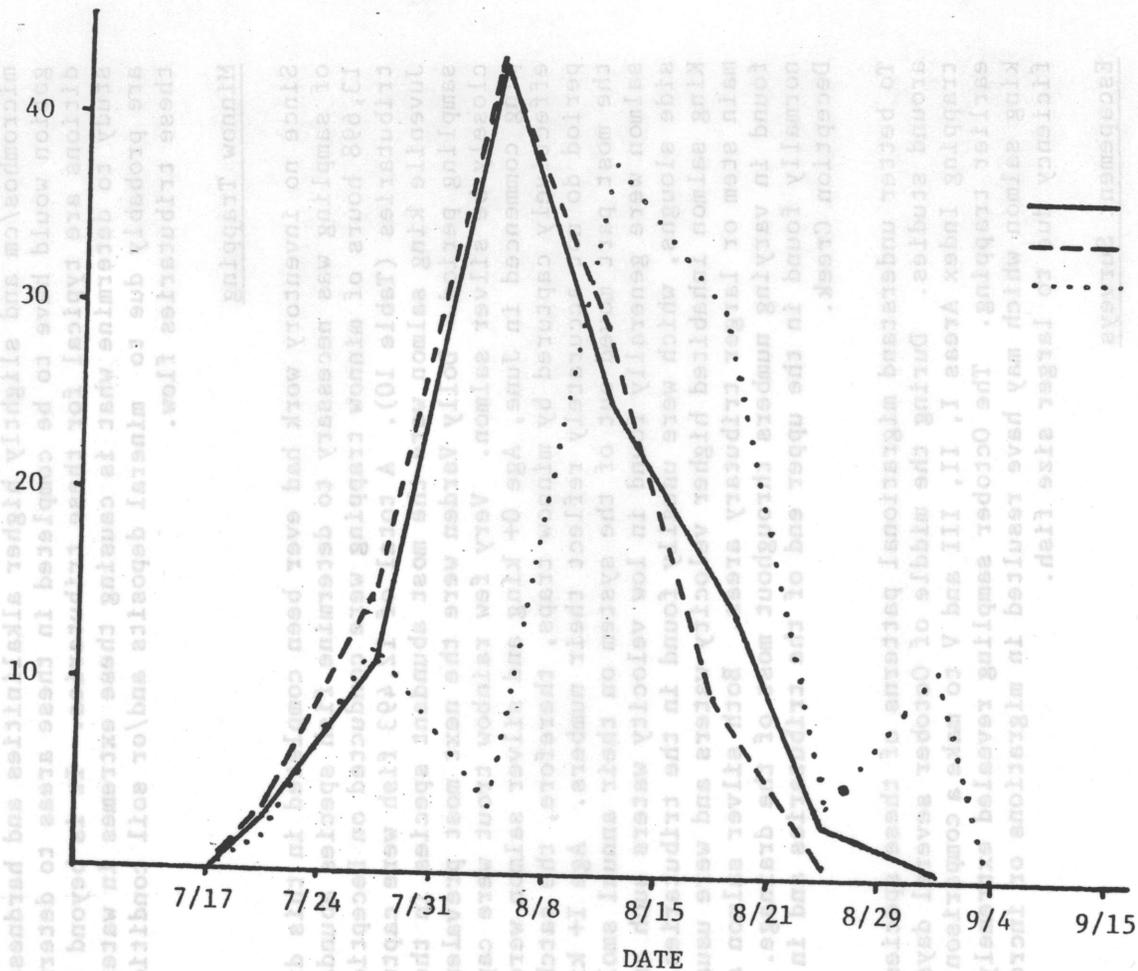


Figure 6. Distribution of Catch by Species, Willow Creek, July 15-September 15, 1978.

fish. Silver salmon are extremely difficult to locate since they utilize very small tributaries. A total of 82 silver salmon were located which probably represents about half of the number using the drainage. King salmon spawning counts revealed that 83 percent of the kings utilized Index II and III for spawning. A total of 99 percent of the pink salmon spawned in Index I and II while 100 percent of the chums utilized Index I. Although silver salmon were scarce, 63 percent of the observed escapement spawned in Index I and II. Another concentration of spawning silvers was located in Index VI.

Table 11. Deception Creek, Adult Salmon Escapement Counts, 1978.

Index Area	Species*			
	KS	PS	CS	SS
I	91	6,400	100	29
II	224	2,350	30	23
IIA	0	0		1
III	254	20		2
IV	7			0
V	No Count**			5
VI	"	"		14
VII	"	"		2
VIII	"	"		6
IX	"	"		0
X	"	"		0
Total	576	8,770	130	82

\* Key: KS-king salmon, PS-pink salmon, CS-chum salmon, SS-silver salmon.

\*\* Ground counts were not conducted in these areas for king salmon. Kings were observed by helicopter through Index VIII, approximately 200 were seen.

King salmon carcass data are presented in the Appendix. The age-length structure of Deception Creek king salmon is identical to those king salmon utilizing Willow Creek.

Miscellaneous Measurements:

Intergravel water temperature data were collected and are presented in the Appendix. Average stream widths, depth and velocities are included in the physical descriptions by Index Area which is also located in the Appendix. During the survey vegetation in the immediate area of the stream was identified as time permitted. A listing by Index Area of these plants is presented in the Appendix.

Table 10. Minnow Trapping Results, Deception Creek, 1978.

Date	Index Area	Total Trap Hour	Total No. Traps	Total No. Fish	Catch/Trap By Species*						
					SS		KS		DV	RT	SC
					0+	1+	0+	1+			
6/8-15	I	1,501	74	543	0.01	0.95	0.22	0.08	0.22	0.08	0.89
8/29-30	IA	511	23	36	0.04	1.04	0.0	0.0	0.04	0.0	0.44
9/20-21	IB	108	6	17	0.17	2.5	0.0	0.0	0.0	0.0	0.17
6/14-15	II	678	35	285	0.06	0.69	5.29	1.57	0.31	0.06	0.17
7/24-8/3	IIA	2,129	102	2,767	2.33	4.59	16.40	0.0	2.83	0.04	0.93
8/2-11	IIB	1,298	66	675	1.24	4.44	0.02	0.0	4.42	0.03	0.08
8/10-11	IIC	44	2	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8/31-9/7	IID	696	30	181	0.53	2.50	2.27	0.0	0.63	0.0	0.10
8/10-9/12	IIE	649	30	152	0.40	0.03	0.27	0.0	4.37	0.0	0.0
6/19-21	III	584	28	541	0.11	0.68	16.71	1.11	0.32	0.11	0.29
9/13-14	IIIA	79	4	165	5.00	7.50	25.75	0.0	2.00	0.0	1.00
9/13-14	IIIB	20	1	56	24.00	0.0	28.00	0.0	2.00	0.0	2.00
9/13-15	IIIC	436	21	229	0.10	0.14	0.0	0.0	10.67	0.0	0.0
9/19-20	IIID	49	2	4	0.0	1.00	0.0	0.0	1.00	0.0	0.0
9/19-20	IIIE	24	1	26	0.0	20.00	0.0	0.0	6.00	0.0	0.0
	IV	Gorge Area - No Trapping Conducted									
8/15-16	V	446	25	1,020	0.60	1.56	31.04	0.0	7.24	0.12	0.12
8/16-17	VI	569	24	1,031	2.08	8.46	22.21	0.0	9.54	0.04	0.63
8/18-19	VII	755	34	988	0.12	2.79	20.85	0.0	4.88	0.27	0.15
8/17-18	VIIA	95	6	55	0.0	3.33	3.50	0.0	1.83	0.33	0.17
8/18-19	VII B	81	5	30	0.0	1.40	0.60	0.0	3.80	0.20	0.0
9/21-22	VIII	334	16	224	0.06	4.38	1.00	0.0	8.44	0.06	0.06
10/3-4	IX	446	20	127	0.60	0.65	0.0	0.0	5.10	0.0	0.0
10/5-6	X	575	24	388	0.0	1.58	0.0	0.0	14.46	0.0	0.13
10/10-11	I	527	29	542	1.28	1.45	14.66	0.0	0.41	0.03	0.86
10/9-10	II	345	18	1,154	0.56	0.94	60.89	0.0	1.61	0.06	0.06
10/11-12	III	324	18	684	0.39	0.33	34.00	0.0	2.39	2.39	0.89
10/13-14	V	395	17	573	0.35	0.12	30.77	0.0	2.06	0.35	0.06
TOTAL		13,698	661	12,493	0.85	2.38	11.11	0.39	3.51	0.08	0.41

\* Key: SS - silver salmon, KS - king salmon, DV - Dolly Varden, RT - rainbow trout, SC - cottids.

### Creel Census:

A creel census was conducted from July 15, 1978 through September 15, 1978 on Willow Creek below its confluence with Deception Creek. The census was designed to determine total catch and effort for weekend and weekday bank fishermen and boat fishermen. Table 7 shows the Willow Creek sport harvest and effort estimates for the census period. A total of 23,869 anglers caught 24,006 salmon during the two month period. In addition, it was estimated that there were an additional 5,578 people that accompanied anglers but did not fish.

During the census 3,506 bank fishermen were interviewed. These contacts include completed and non-completed fishermen. This total represents 16 percent of the estimated effort.

Bank fishermen represented 92 percent of the total effort while boat fishermen made up the remainder. Anglers fished an average of 2.84 hours per day. A total of 85 percent of all fishermen were Alaskan residents. Effort on weekdays was higher than weekends with 56.5 percent of the effort occurring on weekdays.

Harvest by species is included in Table 7. Pink salmon accounted for 84 percent of the total harvest and chum salmon accounted for 11 percent of the harvest. The remainder of the harvest was silver salmon. The catch rate for all species was 0.35 fish per hour.

Figure 5 shows the distribution of fishing effort during the period of the census. The majority of the effort (86%) occurred between July 24 and August 20 with the peak occurring from August 1 to August 8. Figure 6 shows the distribution of catch by species. Pink and chum salmon catches peaked between August 1 and August 8 while silver salmon catches were highest between August 8 and August 20.

### DECEPTION CREEK

Deception Creek was divided into ten Index Areas starting at its confluence with Willow Creek and progressing upstream to its source. Tributaries flowing into each of these Index Areas were given the same number as the Index Area of Deception Creek into which it flowed, but a letter was assigned to it to indicate it as a tributary stream (Table 8).

Deception Creek has three major forks in the upper portion of the drainage. The main stem and forks of Deception Creek represent approximately 35.6 miles of stream of which 31 miles were surveyed. There are approximately 33.6 stream miles on 14 tributaries of which 20.4 miles were surveyed. It is felt that most of the tributaries in the Deception Creek drainage were located and partially surveyed. A description of the index boundaries is presented in the Appendix. A physical description of the stream in each of the Index Areas is also included in the Appendix.

### Water Chemistry

Water chemistry data collected in this system are presented in Table 9. The majority of waters sampled had a pH ranging from 6.2 to 7.7 and total alka-

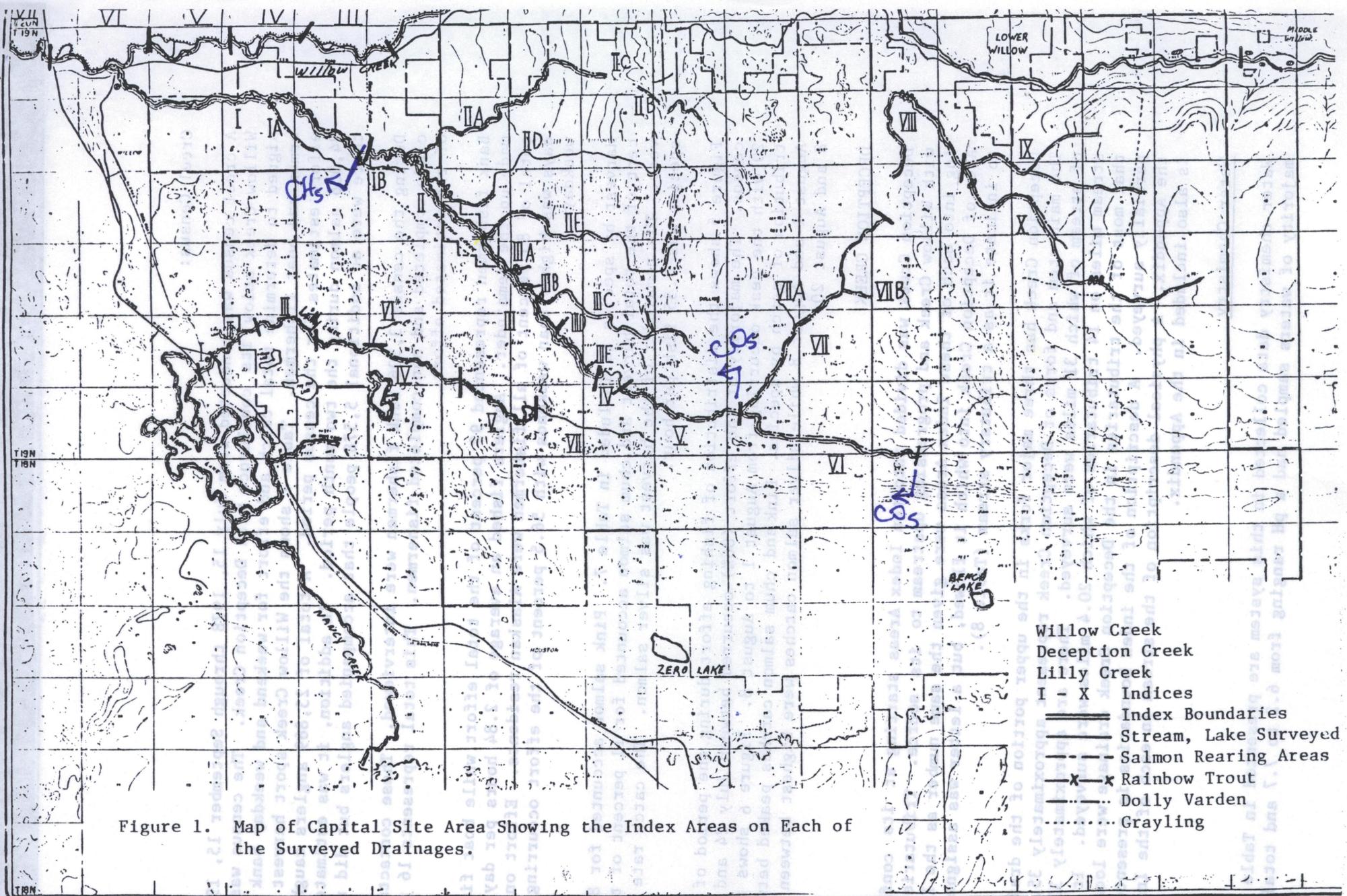


Figure 1. Map of Capital Site Area Showing the Index Areas on Each of the Surveyed Drainages.

