State of Alaska
Department of Fish and Game
Nomination for Waters
Important to Anadromous Fish

1988
Year of Revision
88-020

Anadromous Water Catalog Volume SC II

USGS Quad Seldovia D-3

Name of Waterway

Anadromous Water Catalog Number of Waterway
241-14-10625-2006

Change to _____ Atlas
_____ Catalog
_____ Both

Addition _____

Deletion _____

Correction _____

Name addition:

USGS name _____

Local name ~~Fox Farm Creek~~

For Office Use

Nomination # _____

Regional Supervisor 10/23/87 Date

SRS 11/20/87

Drafted EI 11/19/87 Date

Species	Date(s) Observed	Spawning	Rearing	Migration
Pink salmon		X		

Comments: Provide any clarifying information, including number of fish observed, location of fish survey data, etc.

See attached survey information from Bradley Lake Hydroelectric Project Final Coordination Act Report - (No Name Stream refers to Fox Farm Stream) Pink salmon were captured by Fish & Wildlife service staff in 1979 & 1980. I was present when juvenile pink salmon were taken in a fyke net in May 1980.

Attach a copy of a map showing location of mouth and upper points of each species, specific stream reaches identified for spawning or rearing, locations of barriers, such as falls. Attach a copy of the fish survey data, if available.

Name of Observer (please print) ~~Don~~ Donald O. McKay

Date: 23 Oct 1987 Signature: Donald O. McKay

Address: Habitat Division, ADF&G
333 Raspberry Rd. Anchorage, AK 99518-1599

Signature of Area Biologist: _____

ACE 7784847+1S

10645
2030
10630
10625
2010
10625
10610
10600
Emergency Landing Strip
Bradley Lake
(SELDOVIA C-3)
SCALE 1:63360
4 MILES
5 KILOMETERS
CONTOUR INTERVAL 50 FEET
ALASKA
QUADRANGLE LOCATION
SELDOVIA (D-3), ALAS
1951
ACE 7784848
FOR SALE BY U. S. GEOLOGICAL SURVEY
RBANKS, ALASKA 99701, DENVER, COLORADO 80225, OR WASHINGTON, D. C. 20242
TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

These estimates, although based on seine hauls at a single location, are reasonably close to the combined hoop net and seine estimates.

There is no accurate way to estimate the total pink salmon escapement. If it is assumed that the peak occurred in Week 7 and there is a complete turnover of fish every 2 weeks, then a rough estimate can be made by adding the estimates for weeks 4 and 7 together. Using these assumptions, the estimated total run size is about 4200 pink salmon. Another approach, consistent with the method used by Alaska Department of Fish and Game to determine total escapement from weekly surveys (Pirtle and McCurdy 1980), is to sum the weekly population estimates and divide by 2.5. Applying this method to the Table 6 estimates gives a total escapement of 4826 pink salmon.

Chum Salmon

Population estimates for chum salmon using mark and recapture data from the hoop nets are not meaningful. Chum salmon were not tagged, consequently individual fish could not be separated. It was, therefore, impossible to determine whether marked fish had been marked prior to a sample week or within a sample week. In addition, there was a tendency to catch the same fish over and over again within any given hoop net in any given week. In the latter weeks of the chum salmon run, a significant portion (50-70%) of the fish caught had been marked previously (Table 1). During the study period, 246 unmarked chum salmon were captured. The recapture data suggest that at least 50 percent of the fish in the study area had been marked. The total number of chum salmon in the Bradley River study area was very likely between 250 and 500 fish.

Pink Salmon Straying

Pink salmon with Bradley Lake Project tags were found at several locations outside of the study area. A fish tagged in the Bradley River on August 14 was recovered in Clear Water Slough, a tributary to the Fox River, on August 21 (Wunderlich, personal communication). Another tagged fish was seen in Clear Water Slough but not captured. A third fish tagged in the Bradley River on August 14 was caught by a fisherman in Mud Bay near Homer on August 22. Another fish tagged on September 4 was recovered near Swift Creek on the north side of Kachemak Bay on September 9. As mentioned earlier, 15 tags were recovered in Fox Farm Creek, a tributary to the lower Bradley River, about 1.6 miles downstream from the study area. It is evident from the above data that a

Table 5. Juvenile Fish Captures Bradley River 1979

Species	Month	Bear Is. Slough Mile 5.2	Mainstem Mile 5.2-4.0	Sloughs Mile 4.5-3.0	Unnamed Creek Mile 3.0
Dolly Varden	June	46	12	176	-
	July	32	69	No Data	-
	Aug.	28	20	38	-
	Sept.	42	8	2	-
Coho Salmon	June	5	18	23	-
	July	10	17	36	-
	Aug.	6	0	67	-
	Sept.	3	0	85	-

Table 6. Juvenile Fish Captures Bradley River 1980

Species	Month	Bear Is. Slough	Mainstem Mile 5.2-4.0	Sloughs Mile 4.5-3.0	Unnamed Creek Mile 3.0
Dolly Varden	April	132	29	10	3
	May	206	3	25	5
	June	32	14	6	1
	July	31	7	6	18 250 Class 0
	Aug.	31	12	8	53 300 Class 0
	Sept.	0	0	0	0
Coho Salmon	April	76	2	7	0
	May	35	1	1	1
	June	12	2	3	1
	July	11	0	2	1
	Aug.	5	3	27 4 Class 0	5
	Sept.	0	0	0	0
Pink Salmon	April	0	0	0	5
	May	0	0	0	77
	June	0	0	0	0
	July	0	0	0	0
	Aug.	0	0	0	0
	Sept.	0	0	0	0

Table 7. Adult Fish Captures Bradley River

Species	Month Year	Bear Is. Slough	Mainstem	Sloughs	Unnamed Creek	Average Length female	Average Length male
Dolly Varden	July 1979	-	2	-	-	29.6 cm	31.2 cm
	Aug. 1979	-	5	-	-		
	Sept 1979	-	1	-	-		
	Aug. 1980	1	-	-	-	35.1 cm	
Pink Salmon	July 1979	6	35	-	72	42.76 cm	49.60 cm
	Aug. 1979	5	14	-	69	48.04 cm	47.25 cm
	July 1980	-	-	-	18	42.25 cm	45.5 cm
Sockeye Salmon	July 1979	5	83	-	-	43.8 cm	47.2 cm
	Aug. 1979	3	11	-	-		
	July 1980	-	7	-	-	49.2 cm	52.5 cm
	Aug. 1980	-	2	-	-		
Coho Salmon	Aug. 1979	-	36	-	-	55.6 cm	62.3 cm
	Sept 1979	5	48	-	5		
	Aug. 1980	-	5	-	-	53.8 cm	79.0 cm
	Sept 1980	-	21	-	-		
Chum Salmon	July 1979	-	7	-	-	57.7 cm	64.5 cm
	Aug. 1979	1	-	-	-		
	July 1980	-	2	-	-	56.0 cm	69.2 cm
	Aug. 1980	-	3	-	-		
Chinook Salmon	July 1979	1	4	-	-	77.5 cm	76.8 cm

No spawning sites were identified in the Bradley River, but ripe individuals were taken in August 1979, including a tagged male and a female pink salmon taken at mile 5.2 on August 1 and 25, respectively. Based on these observations and the occurrence of sufficient gravels and ground water seepage in this reach, spawning may occur between mile 4.6 and 5.3.

A small number of juvenile pink salmon were captured during the 1979 field studies in Unnamed Creek. Because field investigation did not begin until early June 1979, most of the newly-hatched juveniles had probably already migrated into the marine environment. Early escapements of juvenile pink salmon from Unnamed creek were recorded on May 2, 1980, with peak migration occurring in mid-May (Table 10). No pink juveniles were captured at any other location.

Sockeye Salmon

Sockeye salmon mature in a 3- to 7-year cycle varying from one geographic area to another. Typically, sockeye salmon spawn from mid-July to mid-September (ADF&G, 1976).

Sockeye spawn in rivers that almost invariably have lakes in their system (Hart, 1973). Some individuals spawn quite close to the sea; most, however, make long migrations upstream to and through inland lakes. Sockeye prefer a spawning substrate consisting of fine gravel over larger stones. Hart (1973) states that, generally, newly emerging fry migrate to lakes to rear; however, some go to sea immediately upon emergence from the gravel. Normally, the juveniles remain in a lake or pond 1 to 2 years. In Alaska, 2 or 3 years residence in fresh water is common. When surface water temperatures in rearing lakes approach 39-45° F, most sockeye smolt migrate to sea and most movement generally occurs at night. Upon reaching saltwater, young salmon appear to remain inshore for several weeks.

A total of 102 adult sockeye salmon were captured in the Bradley River in 1979. Of these, 97 were tagged and released. Females represented 59.8 percent of the total tagged population.

Sockeye salmon were first captured in gill nets at Mile 3.0 on July 21, 1980, approximately 2.5 weeks later than in 1979.

Relative timing of adult sockeye utilizing the Bradley River, based on fish captured in 1979 and 1980, is provided in Figures 11 and 12.

No spawning sites were identified in the Bradley River.

No sockeye juveniles were captured.

Because no juveniles were caught in 1979 or 1980, no spawning was observed, and tagged adults were recovered from distant locations, we believe that sockeye observed in the Bradley River may be straying into the system and holding there. They probably then continue on to their natal streams for spawning.

On August 4, 1980, an aerial survey of the upper Martin River revealed approximately 350 sockeye in the clear lake above the rapids. It is possible that sockeye in the Bradley eventually move into and spawn in this lake. The Martin River system was not surveyed in 1979.