Swan Lake
Sockeye Salmon Smolt
Data Report
2010

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The Swan Lake Project was made possible through enhancement taxes paid by the commercial fishermen in Area H Cook Inlet and associated waters, an Alaska Sustainable Salmon Fund grant received from the Alaska Department of Fish and Game and the National Oceanic and Atmospheric Administration, and a State of Alaska Designated Legislative Grant.

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DISCLAIMER

The Cook Inlet Aquaculture Association (CIAA) conducts salmon enhancement and restoration projects in Area H, Cook Inlet and associated waters. As an integral part of these projects a variety of monitoring and evaluation studies are conducted. The following data report is a synopsis of the monitoring and evaluation studies conducted for Swan Lake. This report encompasses data collected from the 2010 sockeye salmon smolt migration as it falls under the Alaska Sustainable Salmon Fund grant.

The purpose of the progress report is to provide a vehicle to distribute the information produced by the monitoring and evaluation studies. Data collected each year are presented with a summary of the information previously collected for comparative purposes. These reports are intended to provide a general description of project activity and are not an exhaustive evaluation of any restoration or enhancement project. The information presented in this report has not undergone an extensive review. As reviews are completed, the information may be updated and presented in later progress reports.

The Swan Lake Data Report was prepared by Cook Inlet Aquaculture Association under award of the Alaska Sustainable Salmon Fund (45918) from the National Oceanic and Atmospheric Administration, U.S. Department of Commerce, administered by the Alaska Department of Fish and Game. The statements, findings, conclusions, and recommendations are those of the author(s) and do not necessarily reflect the views of the National Oceanic and Atmospheric Administration, the U.S. Department of Commerce, or the Alaska Department of Fish and Game.

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ACKNOWLEDGEMENTS

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ABSTRACT

As part of the continued evaluation of lakes in the Susitna River watershed to determine the sockeye salmon (*Oncorhynchus nerka*) abundance in key salmon producing lakes with and without northern pike (*Esox lucius*), Cook Inlet Aquaculture Association (CIAA) and the Alaska Department of Fish and Game (ADF&G) agreed to monitor sockeye salmon smolt migrations from Swan Lake. The project also documented other migrating fish and where applicable collected coho smolt samples. CIAA conducted monitoring activities at Swan Lake from 2007 to 2010 and found no presence of northern pike during this time.

The 2010 smolt migration was enumerated from 17 May and continued daily until 26 June. During this time, 14,933 sockeye salmon (*O. nerka*) and 8,839 coho salmon (*O. kisutch*) smolts were captured. Other fish counted during this time were 16 rainbow trout (*O. mykiss*), 5 Dolly Varden (*Salvelinus malma*), 221 Bering cisco (*Coregonus laurettae*), 1,980 longnose sucker (*Catostomus catostomus*), and 9 lamprey (*Lampetra* sp.).

Based on the readable sockeye samples collected (n=1,273), an estimated 84% (±0.01%) were age-1, 15% (±0.2%) were age-2, and 1% (±0.8%) were age-3. The average length and weight of age-1 smolt were 85 mm (±1.6 mm) and 6.5 g (±0.1 g). The average length and weight of age-2 smolt were 88 mm (±1 mm) and 7.1 g (±0.3 g). The average length and weight of age-3 smolt were 133 mm (±9 mm) and 24.3 g (±5.9 g).

Based on the readable coho samples collected (n=611), an estimated 2% (±1.4%) were age-0, 50% (±0.1%) were age-1, 41% (±0.2%) were age-2, and 7% (±0.6%) were age-3. The average length and weight of age-0 smolt were 58 mm (±3.2 mm) and 1.9 g (±0.4 g). The average length and weight of age-1 smolt were 108 mm (±1.7 mm) and 13.8 g (±0.5 g). The average length and weight of age-2 smolt were 129 mm (±1 mm) and 22.7 g (±0.6 g). The average length and weight of age-3 smolt were 146 mm (±2.9 mm) and 32.5 g (±2.0 g).

Simple environmental conditions were also measured during this time—personnel recorded 71 mm accumulated rainfall, water level fluctuated +0.68 feet, water temperature averaged 14°C, and air temperature average 15°C.

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INTRODUCTION AND PURPOSE

To better understand the recent low adult sockeye salmon (*Oncorhynchus nerka*) returns to the Susitna River drainage system, the Cook Inlet Aquaculture Association (CIAA), in cooperation with the Alaska Department of Fish and Game (ADF&G), assessed sockeye salmon populations at several key salmon producing lakes with and without northern pike (*Esox lucius*) in the Susitna River drainage. The overall objective of this effort was to enumerate the smolt and adult returns and to assess the characteristics of these populations in terms of age composition, sex and size. Additionally, for some lake systems, environmental conditions and water quality measurements were collected as well as genetic samples, mark-recapture studies, and the performance of hydroacoustic surveys. The goal was to collect sound biological data to provide the foundation on which decisions for management and rehabilitation strategies can be made. Understanding the adult-to-juvenile relationship will allow management biologists to analyze and evaluate the production and rearing condition of each lake.

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PROJECT AREA

Swan Lake is located approximately 27 km north of Talkeetna, Alaska (Figure 1). Swan Lake is listed under the Anadromous Waters Catalog water body number, 247-41-10200-2381-3161-4071-0010, as containing coho salmon (*O. kisutch*) and sockeye salmon (*O. nerka*) (Johnson and Blanche, 2010). The bathymetric map shown in Figure 2 displays a shallow lake with greatest depth at 7 m (William Glick, personal communication, March 26, 2010). Swan Creek empties into Tokositna River; however, during excessive rainfall or glacial melt in the Tokositna River, the flow from Swan Creek into Tokositna can become more stagnant.

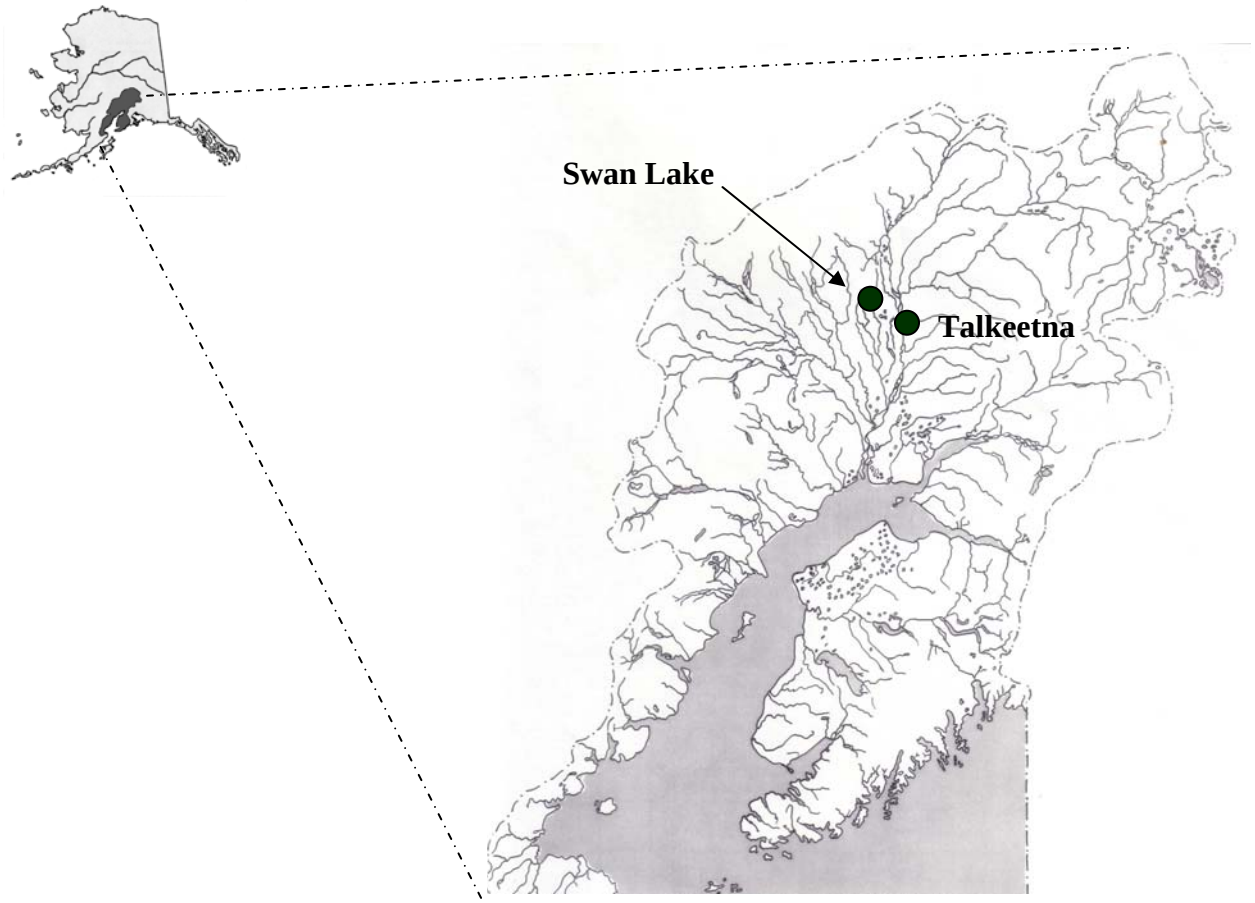
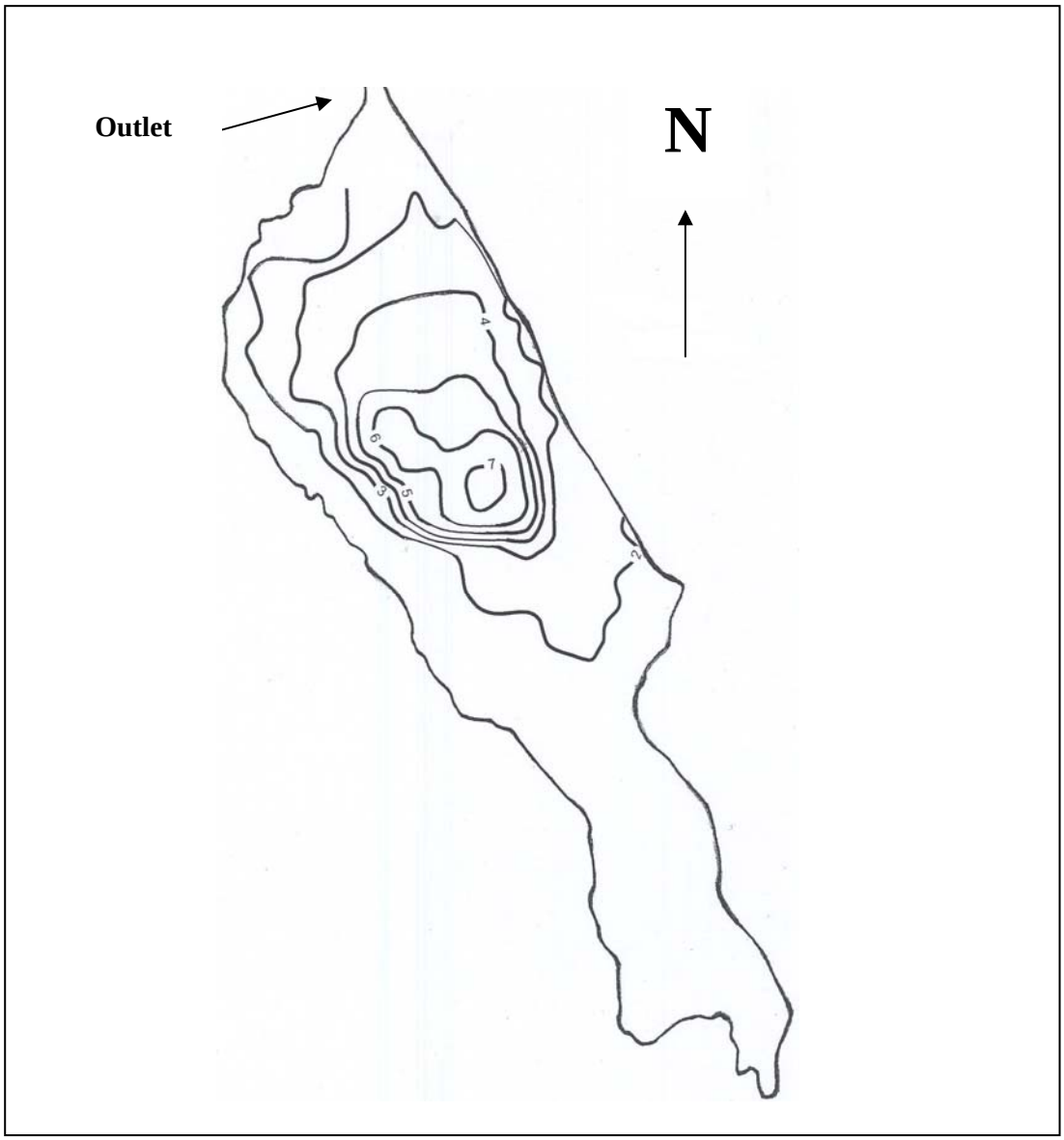


Figure 1. Swan Lake in relation to Cook Inlet and Alaska



Geographic Location: 62˚42’ North Latitude
148˚54’ West Longitude
Elevation: 195 m
Maximum Depth: 7 m
Mean Depth: 4 m

Figure 2. Bathymetric map of Swan Lake

METHODS

Environmental Conditions

To assess the environmental conditions during the salmon smolt migration to Swan Lake, percent cloud cover was visually estimated, stream fluctuations measured to the nearest tenth of a foot, precipitation measured to the nearest millimeter, and water and air temperatures measured to the nearest degree centigrade. All measurements were all recorded at 5:00 PM each day (CIAA Staff, 2010).

Smolt Enumeration

To enumerate the smolt migration, a smolt trap was temporarily placed in the outlet of Swan Lake. The smolt trap consisted of a modified fyke net with Vexar® netting leads and a double compartment live-box. The leads and fyke net funneled migrating smolt into the live-box. A swing gate remotely controlled by the trap operators directed smolt into one of two live-box compartments where they were enumerated and a smolt sample was collected. A total count of smolt migrating from Swan Lake was made during the migration.

Smolt Characteristics

The Swan Lake smolt characteristics were assessed by collecting a sample of the migrating smolts. Throughout each day, field personnel randomly collected sockeye (up to 40 per day) and coho samples (up to 20 per day). Each smolt collected for evaluation was first measured to the nearest millimeter for fork length[1] and then weighed to the nearest 0.1 g. Several scales were also removed from the primary growth area[2] and mounted on a glass slide for subsequent age determination. Scale samples were read by CIAA full-time staff at headquarters in Kenai.

1 Standard fork length was measured from the tip of the snout to the fork of the tail.

2 The primary growth area is located above the lateral line on a diagonal from the posterior insertion of the dorsal fin to the anterior insertion of the anal fin.

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RESULTS AND DISCUSSION

Environmental Conditions

During the 2010 smolt migration, environmental conditions were monitored from 17 May to 26 June. The water level fluctuated +0.68 feet during this time. Stream temperatures averaged 14°C and ranged from 3 to 21°C. Air temperatures averaged 15°C and ranged from 7 to 23°C. There were 2.4% of the days were clear, 46.3% were partly cloudy, and 51.2% were completely overcast. Measurable rain was recorded on 19 days during the smolt migration. A total of 71 mm of rain fell during this period.

Smolt Enumeration

The 2010 smolt migration was enumerated from 17 May and continued daily until 26 June. During this time, 14,933 sockeye salmon (*O. nerka*) and 8,839 coho salmon (*O. kisutch*) smolts were captured. Other fish counted during this time were 16 rainbow trout (*O. mykiss*), 5 Dolly Varden (*S. malma*), 221 Bering cisco (*Coregonus laurettae*), 1,980 longnose sucker (*C. catostomus*), and 9 lamprey (*Lampetra* sp.). The daily count from 18 to 20 May was inconclusive because the trap was severely damaged by lake ice and then was under repair and not operational until 21 May.

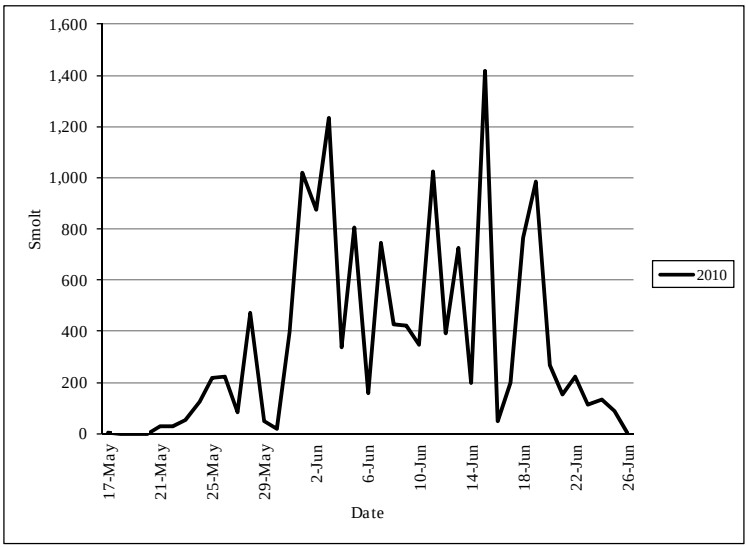

Figure 3. Swan Lake, daily sockeye smolt migration, 2010

Smolt Characteristics

A total of 1,283 sockeye scale samples were collected of which 1,273 samples were readable. Of the readable samples, an estimated 84% (±0.01%) were age-1, 15% (±0.2%) were age-2, and 1% (±0.8%) were age-3 (Table 1). The average length and weight of age-1 smolt were 85 mm (±1.6 mm) and 6.5 g (±0.1 g). The average length and weight of age-2 smolt were 88 mm (±1 mm) and 7.1 g (±0.3 g). The average length and weight of age-3 smolt were 133 mm (±9 mm) and 24.3 g (±5.9 g).

A total of 618 coho scale samples were collected of which 611 samples were readable. Of the readable samples, an estimated 2% (±1.4%) were age-0, 50% (±0.1%) were age-1, 41% (±0.2%) were age-2, and 7% (±0.6%) were age-3 (Table 2). The average length and weight of age-0 smolt were 58 mm (±3.2 mm) and 1.9 g (±0.4 g). The average length and weight of age-1 smolt were 108 mm (±1.7 mm) and 13.8 g (±0.5 g). The average length and weight of age-2 smolt were 129 mm (±1 mm) and 22.7 g (±0.6 g). The average length and weight of age-3 smolt were 146 mm (±2.9 mm) and 32.5 g (±2.0 g).

Table 1. Summary of Swan Lake sockeye salmon smolt characteristics, 2008–2010

		Age Class (%)						Mean length (mm)						Mean weight (g)					
Smolt	Migration	Age	95%	Age	95%	Age	95%	Age	95%	Age	95%	Age	95%	Age	95%	Age	95%	Age	95%
Year		1	C.I.	2	C.I.	3	C.I.	1	C.I.	2	C.I.	3	C.I.	1	C.I.	2	C.I.	3	C.I.
2008	7,278	99%	(±0.002%)	1%	(±1.9%)	ND	ND	89	(±0.4)	89	(±4.3)	89	(±4.3)	7.5	(±1.2)	8.2	(±1.5)	8.2	(±1.5)
2009	21,111	99%	(±0.0%)	1%	(±1.7%)	ND	ND	85	(±0.3)	99	(±4.6)	99	(±4.6)	6.2	(±0.1)	9.7	(±1.5)	9.7	(±1.5)
2010	14,933	84%	(±0.01%)	15%	(±0.2%)	1%	(±0.8%)	85	(±1.6)	88	(±1.0)	88	(±1.0)	6.5	(±0.1)	7.1	(±0.3)	7.1	(±0.3)
Mean	14,441	94%		6%		0%		86		92		92		6.7		8.3		8.3	

ND=No Data

Table 2. Summary of Swan Lake coho salmon smolt characteristics, 2008–2010

		Age Class (%)						Mean length (mm)						Mean weight (g)					
Smolt	Migration	Age	95%	Age	95%	Age	95%	Age	95%	Age	95%	Age	95%	Age	95%	Age	95%	Age	95%
Year		1	C.I.	2	C.I.	3	C.I.	1	C.I.	2	C.I.	3	C.I.	1	C.I.	2	C.I.	3	C.I.
2008	3,047	24%	(±0.4%)	72%	(±0.1%)	5%	(±1.2%)	101	(±2.7)	121	(±1.1)	134	(±4.8)	11.6	(±1)	18.9	(±1.2)	24.7	(±2.8)
2009	2,704	21%	(±0.4%)	74%	(±0.2%)	4%	(±1.2%)	112	(±1.6)	124	(±1.1)	146	(±4.8)	14.5	(±0.6)	19.1	(±0.5)	30.8	(±3.0)
2010*	8,839	50.2%	(±0.1%)	41.2%	(±0.1%)	6.9%	(±0.6%)	108	(±1.7)	129	(±1)	146	(±2.9)	13.8	(±0.5)	22.7	(±0.6)	32.5	(±2)
Mean	4,863	32%		62%		5%		107		125		142		13.3		20.2		29.3	

*2010-There were 1.6% Age-0 sampled during the migration.

ND=No Data

LITERATURE CITED

CIAA Staff, 2010. Swan Lake Procedures Manual. Cook Inlet Aquaculture Association.

Johnson, J. and P. Blanche. 2010. Catalog of waters important for spawning, rearing, or migration of anadromous fishes – Southcentral Region, Effective June 1, 2010. Alaska Department of Fish and Game, Special Publication No. 10-06.

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APPENDICES

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Appendix 1. Swan Lake 2010 – Environmental Conditions

Date	Sky	Precip. (mm)	Water fluctuation (ft)	Flow	Water Temp. (˚C)	Air Temp. (˚C)
17-May	2	0.00	3.92	ND	3	17
18-May	2	0.00	3.86	ND	6	19
19-May	5	ND	ND	ND	ND	14
20-May	2	16.00	3.75	ND	7	14
21-May	2	0.00	3.68	ND	12	19
22-May	2	0.00	3.60	ND	12	16
23-May	2	0.00	3.52	ND	12	19
24-May	1	0.00	3.38	ND	9	20
25-May	3	0.00	3.34	ND	14	19
26-May	2	0.00	3.32	ND	14	21
27-May	3	0.00	3.32	ND	14	18
28-May	4	0.00	3.24	ND	19	22
29-May	2	0.00	3.28	ND	15	23
30-May	3	0.00	3.38	ND	16	21
31-May	5	0.00	3.40	ND	16	12
1-Jun	5	11.00	3.46	ND	18	18
2-Jun	5	1.50	3.46	ND	14	18
3-Jun	5	1.50	3.44	ND	13	8
4-Jun	5	3.50	3.44	ND	12	7
5-Jun	4	1.50	3.40	ND	14	16
6-Jun	2	0.00	3.39	ND	18	18
7-Jun	3	0.00	3.32	ND	17	15
8-Jun	5	0.50	3.32	ND	14	10
9-Jun	4	1.00	3.32	ND	14	11
10-Jun	3	2.50	3.30	ND	16	14
11-Jun	4	0.00	3.28	ND	14	12
12-Jun	5	2.00	3.26	ND	13	9
13-Jun	4	3.00	3.26	ND	14	12
14-Jun	5	0.50	3.25	ND	15	12
15-Jun	5	13.00	3.30	ND	13	9
16-Jun	5	4.00	3.32	ND	12	10
17-Jun	4	3.50	3.32	ND	13	10
18-Jun	5	0.50	3.44	ND	14	13
19-Jun	5	2.50	3.44	ND	14	11
20-Jun	2	2.00	3.40	ND	18	17
21-Jun	3	0.00	3.39	ND	15	22
22-Jun	4	0.50	3.39	ND	16	19
23-Jun	2	0.00	3.35	ND	20	18
24-Jun	2	0.00	3.36	ND	21	19
25-Jun	2	0.00	3.34	ND	19	18
26-Jun	4	0.00	3.39	ND	13	13
Total		71				
Avg.		1.8		ND	14	15
Min.		0.0	3.24	ND	3	7
Max.		16.0	3.92	ND	21	23

Ice Out=May 20

Summary of Cloud Cover - Percent of Days

	No. Days	Meas. Rain	Overcast	Partly Cloudy	Clear
Smolts	41	46%	51.2%	46.3%	2.4%

1 = Clear
2 = Cloud Cover <50%
3 = Cloud Cover>50%
4 = Overcast
5 = Rain

ND = No Data

Appendix 2. Swan Lake 2010 – Smolt Migration

	Sockeye			Coho			Rainbow		Dolly Varden		Bering Cisco		Longnose Sucker		Lamprey*	
Date	Daily	Mort.	Total	Daily	Mort.	Total	Daily	Total	Daily	Total	Daily	Total	Daily	Total	Daily	Total
17-May	5	0	5	22	0	22	0	0	0	0	192	192	192	192	4	4
18-May	ND	0	5	0	0	22	0	0	0	0	0	192	0	192	0	4
19-May	ND	0	5	0	0	22	0	0	0	0	0	192	0	192	0	4
20-May	ND	0	5	0	0	22	0	0	0	0	0	192	0	192	0	4
21-May	29	0	34	29	0	51	0	0	0	0	0	192	0	192	0	4
22-May	29	0	63	138	0	189	0	0	0	0	0	192	0	192	0	4
23-May	53	0	116	163	0	352	1	1	0	0	1	193	24	216	0	4
24-May	124	0	240	186	0	538	3	4	0	0	3	196	52	268	0	4
25-May	217	0	457	376	0	914	0	4	0	0	2	198	42	310	0	4
26-May	224	0	681	123	0	1,037	0	4	0	0	0	198	16	326	0	4
27-May	85	0	766	14	0	1,051	0	4	1	1	2	200	96	422	0	4
28-May	473	0	1,239	71	0	1,122	3	7	0	1	4	204	218	640	0	4
29-May	50	0	1,289	6	0	1,128	0	7	1	2	0	204	337	977	0	4
30-May	20	0	1,309	4	0	1,132	0	7	0	2	0	204	61	1,038	0	4
31-May	398	0	1,707	605	0	1,737	1	8	0	2	0	204	112	1,150	0	4
1-Jun	1,022	0	2,729	819	0	2,556	0	8	0	2	4	208	256	1,406	0	4
2-Jun	874	0	3,603	1,426	0	3,982	0	8	0	2	4	212	22	1,428	1	5
3-Jun	1,234	0	4,837	1,211	0	5,193	0	8	0	2	0	212	43	1,471	0	5
4-Jun	338	0	5,175	213	0	5,406	0	8	0	2	0	212	21	1,492	0	5
5-Jun	803	0	5,978	390	0	5,796	2	10	2	4	4	216	112	1,604	0	5
6-Jun	157	0	6,135	242	0	6,038	1	11	1	5	5	221	36	1,640	0	5
7-Jun	745	0	6,880	227	0	6,265	0	11	0	5	0	221	55	1,695	3	8
8-Jun	425	0	7,305	156	0	6,421	0	11	0	5	0	221	11	1,706	1	9
9-Jun	424	0	7,729	347	0	6,768	0	11	0	5	0	221	25	1,731	0	9
10-Jun	346	0	8,075	109	0	6,877	0	11	0	5	0	221	11	1,742	0	9
11-Jun	1,024	0	9,099	383	0	7,260	0	11	0	5	0	221	14	1,756	0	9
12-Jun	390	0	9,489	170	0	7,430	0	11	0	5	0	221	3	1,759	0	9
13-Jun	726	0	10,215	374	0	7,804	0	11	0	5	0	221	7	1,766	0	9
14-Jun	197	0	10,412	1	0	7,805	0	11	0	5	0	221	1	1,767	0	9
15-Jun	1,420	0	11,832	241	0	8,046	0	11	0	5	0	221	0	1,767	0	9
16-Jun	47	0	11,879	81	0	8,127	2	13	0	5	0	221	15	1,782	0	9
17-Jun	196	0	12,075	19	0	8,146	1	14	0	5	0	221	6	1,788	0	9
18-Jun	766	0	12,841	68	0	8,214	0	14	0	5	0	221	11	1,799	0	9
19-Jun	985	0	13,826	262	0	8,476	0	14	0	5	0	221	8	1,807	0	9
20-Jun	266	0	14,092	130	0	8,606	0	14	0	5	0	221	73	1,880	0	9
21-Jun	153	0	14,245	131	0	8,737	0	14	0	5	0	221	20	1,900	0	9
22-Jun	221	0	14,466	35	0	8,772	0	14	0	5	0	221	25	1,925	0	9
23-Jun	112	0	14,578	38	0	8,810	2	16	0	5	0	221	17	1,942	0	9
24-Jun	135	0	14,713	16	0	8,826	0	16	0	5	0	221	7	1,949	0	9
25-Jun	88	0	14,801	13	0	8,839	0	16	0	5	0	221	31	1,980	0	9
26-Jun	5	0	14,806	0	0	8,839	0	16	0	5	0	221	0	1,980	0	9
Total	14,806	0	14,806	8,839	0	8,839		16		5		221		1,980		9

*Undifferentiated species

ND = No Data

Appendix 3. Swan Lake 2010 – Sockeye Smolt Hourly Count

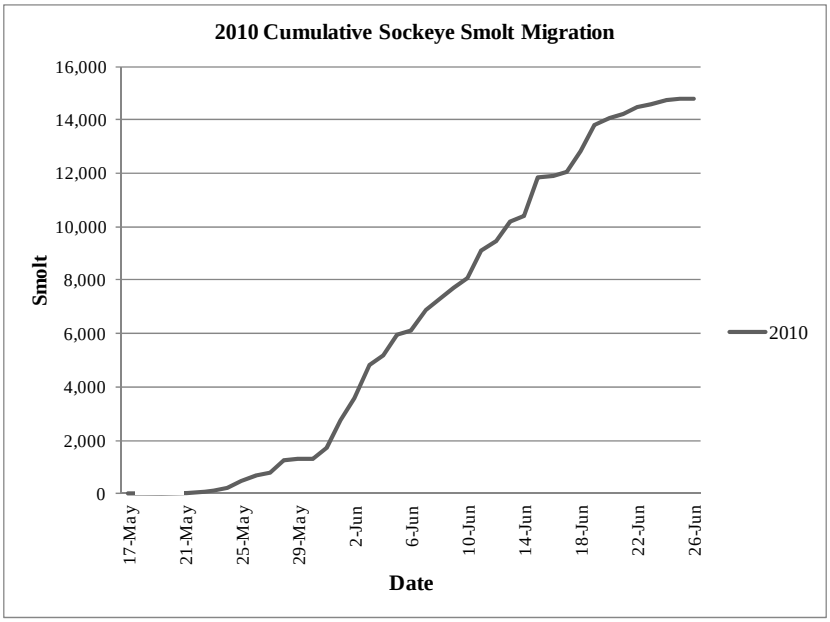
	AM						PM												AM									
Date	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	Total Hrs Counted	Total Critical Hrs Counted	% of Critical Hrs Counted	No. Sockeye Counted
17-May																2		3							2	2	22%	5
18-May	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0	0	0%	-
19-May	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0	0	0%	-
20-May	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0	0	0%	-
21-May												0			2		0		8	2	4			13	7	0	0%	29
22-May															7		4		1	4		10	1	2	7	0	0%	29
23-May										2			19				0		18	10	2			2	7	0	0%	53
24-May												23	17				12		24		37			11	6	0	0%	124
25-May													0		25	0			126	10		34		22	7	5	56%	217
26-May													0			2			117			34		71	5	6	67%	224
27-May													0	1		0			67			9		8	6	5	56%	85
28-May													26		157	32		133	34		48			43	7	4	44%	473
29-May													0			50			0		0			0	5	5	56%	50
30-May													0			11			2			7		0	5	4	44%	20
31-May														0		101			5			46		246	5	4	44%	398
1-Jun												18			1		290	317		129		95		172	7	5	56%	1,022
2-Jun													27			302	163		99			84		199	6	4	44%	874
3-Jun												229			208			341		231		107		118	6	4	44%	1,234
4-Jun													0			5			23			97		213	5	4	44%	338
5-Jun													23			207			190			126		257	5	4	44%	803
6-Jun													88		0			69				0			4	2	22%	157
7-Jun												0			29			342			200			174	5	3	33%	745
8-Jun													7			62			152			200		4	5	4	44%	425
9-Jun													223			25			6			55		115	5	4	44%	424
10-Jun												1				207			23			14		101	5	4	44%	346
11-Jun												47			136			304			51			486	5	3	33%	1,024
12-Jun												47			0			134			142			67	5	3	33%	390
13-Jun													190			216			66		102			152	5	4	44%	726
14-Jun													0			39			154			4		0	5	4	44%	197
15-Jun													0			842			357			155		66	5	4	44%	1,420
16-Jun													17			6			10			14		0	5	4	44%	47
17-Jun												70			0			68			11			47	5	3	33%	196
18-Jun												162			5			253			69		277		5	3	33%	766
19-Jun													218			271			104			218		174	5	4	44%	985
20-Jun													30			49			47			87		53	5	4	44%	266
21-Jun													83			29			31			10		0	5	4	44%	153
22-Jun												1				71			37			86		26	5	4	44%	221
23-Jun													0			16			18			50		28	5	4	44%	112
24-Jun													0			9			4			39		83	5	4	44%	135
25-Jun													1			0			9			78		0	5	4	44%	88
26-Jun													0			0			5			0		0	5	4	44%	5

ND=No data

Appendix 4. Swan Lake 2010 – Update

Misc. Activities		
Ice-out:	20-May	Approximate
Smolt Crew On-site:	17-May	
Smolt Crew Off-site:	26-Jun	

Smolt Migration		
Dates:	17-May to 26-Jun	
	No.	%
Sockeyes:	14,806	100%
Mortalities:	0	0.0%
Age 1:	12,375	83.6%
Age 2:	2,280	15.4%
Age 3:	151	1.0%
Coho:	8,839	
Mortalities:	0	0.0%
Age 0:	145	1.6%
Age 1:	12,375	83.6%
Age 2:	2,280	15.4%
Age 3:	151	1.0%
Rainbow Trout:	16	
Dolly Varden:	5	
Bering Cisco:	221	
Longnose Sucker:	1,980	
Undifferentiated Lamprey:	9	



Appendix 5. Swan Lake 2008–2010 – Historical Sockeye Smolt Migrations

Date	2008	2009	2010
17-May	ND	ND	5
18-May	ND	ND	5
19-May	ND	ND	5
20-May	ND	ND	5
21-May	ND	ND	34
22-May	ND	ND	63
23-May	ND	ND	116
24-May	ND	1,008	240
25-May	ND	2,619	462
26-May	ND	3,806	686
27-May	ND	3,806	769
28-May	ND	3,806	1,242
29-May	0	4,122	1,292
30-May	0	4,323	1,312
31-May	0	5,450	1,740
1-Jun	9	6,175	2,762
2-Jun	9	8,714	3,609
3-Jun	17	11,215	4,845
4-Jun	17	12,055	5,183
5-Jun	20	13,271	5,986
6-Jun	22	13,710	6,273
7-Jun	57	14,844	7,018
8-Jun	595	14,942	7,443
9-Jun	1,073	16,499	7,868
10-Jun	1,353	16,499	8,214
11-Jun	1,817	16,525	9,238
12-Jun	1,948	16,525	9,628
13-Jun	2,011	16,525	10,342
14-Jun	2,013	16,980	10,539
15-Jun	2,023	17,128	11,959
16-Jun	2,023	17,134	12,006
17-Jun	2,023	17,144	12,202
18-Jun	2,023	17,235	12,968
19-Jun	2,054	17,248	13,953
20-Jun	2,455	17,361	14,219
21-Jun	3,538	17,500	14,372
22-Jun	3,538	17,548	14,593
23-Jun	3,538	18,320	14,705
24-Jun	5,763	19,778	14,840
25-Jun	6,206	20,854	14,928
26-Jun	6,853	20,989	14,933
27-Jun	6,853	21,111	ND
28-Jun	6,853	ND	ND
29-Jun	6,863	ND	ND
30-Jun	7,278	ND	ND
1-Jul	ND	ND	ND
2-Jul	ND	ND	ND
3-Jul	ND	ND	ND
4-Jul	ND	ND	ND
5-Jul	ND	ND	ND

ND=No Data

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