SOUTHERN SOUTHEAST ALASKA COHO SALMON ESCAPEMENT ESTIMATION, 1989

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ABSTRACT

Coho salmon escapements were surveyed and enumerated in streams throughout southern Southeast Alaska by foot and helicopter during Fall 1989. Foot or helicopter surveys were conducted during September 15-October 31 on 46 streams. The Hugh Smith Lake adult weir was operated throughout the coho salmon migration during which a total of 424 age .1 fish and 34 jacks (age .0) were enumerated. The 1989 count for Hugh Smith Lake was the lowest escapement count of age .1 fish recorded since the weir was first operated in 1982. Overall, coho salmon escapements in southern Southeast exhibited mixed strength in 1989 with peak counts for individual systems ranging from the lowest recorded to above average for the 1980's.

KEY WORDS: Coho salmon, escapement, surveys, indicator stock, Southeast Alaska.

INTRODUCTION

Southern Southeast Alaska coho salmon stocks provide an important contribution to ocean and inshore fisheries in Southeast Alaska and northern British Columbia. Information on the escapement status and contributions of natural stocks in southern Southeast is essential for development of realistic management arrangements under the U.S./Canada Pacific Salmon Treaty.

The almost total lack of escapement information on the heavily harvested southern Southeast coho salmon stocks has caused concern to fishery managers for many years. That concern was the inpetus for establishment of an increased escapement survey program beginning in 1987. Results from 1987 surveys were reported by Elliott (et al. 1988), while 1988 surveys were reported in Shaul (et al. 1989). This current report summarizes the results of coho salmon escapement surveys and weir counts in southern Southeast Alaska in 1989.

METHODS AND PROCEDURES

Escapement surveys were conducted by foot and helicopter. Foot surveys were conducted by walking the length of streams to their headwater spawning areas and counting fish in pools, along banks and on spawning beds. An attempt was made to time surveys so that the maximum (peak) number of fish was available for counting. This usually occurred after most fish had entered the stream from saltwater but before most had begun spawning.

Helicopter surveys were conducted from an altitude of 6-50 m unless obstructions required flying higher. Airspeed varied from approximately 5-50 km per hour depending on terrain, visibility and the presence or absence of fish. Helicopter surveys were conducted from Bell 206 B Jet Ranger and Hughs 500 helicopters. The door on the observer's side was removed and the helicopter was maneuvered so that the observer was able to look down into the stream continuously from the left side. The observer wore polarized glasses to reduce reflective glare and a billed hat to keep prop wash out of the observer's eyes.

An adult salmon weir was operated at Hugh Smith Lake during June 1 - October 24. Returning coho salmon were sampled for age and length and the presence or absence of coded-wire tags.

RESULTS AND DISCUSSION

A total of 60 streams in southern Southeast was surveyed by foot, helicopter, airplane or boat during 1989 (Table 1). Of these, foot or helicopter surveys were conducted during September 15-October 31 on a total of 44 streams.

Counts were obtained at three weirs, including Hugh Smith Lake, Crystal Creek (hatchery stock) and Bakewell Lake Creek (partial count through October 5). A

total of 304 adult coho salmon (age .1) and 34 jacks (age .0) were counted at the Hugh Smith Lake Weir. In addition, 120 adults remained immediately downstream of the weir when it was removed on October 25, for a total adult count of 424 fish. This was the lowest observed escapement since the weir was first operated in 1982.

Overall, coho escapements in southern Southeast in 1989 were highly variable from the lowest observed, to well above average. Commercial catches indicated that overall abundance of coho stocks in the area was about average.

LITERATURE CITED

Elliott, S.T. and K.J. Kuntz. 1988. A study of coho salmon in Southeast Alaska: Chilkat Lake, Chilkoot Lake, Yehring Creek, and Vallenar Creek. Alaska Department of Fish and Game, Sport Fish Division, Fishery Data Series No. 62, Juneau.

Shaul, L.D., J.F. Koerner, R.C. Larson and S.H. Hoffman. 1989. Southern Southeast Alaska coho salmon escapement estimation, 1989. Alaska Department of Fish and Game, Commercial Fisheries Division, Regional Information Report No. 1J89-34, Juneau.

Table 1. Coho salmon escapement surveys and weir counts for southern Southeast Alaska, 1989.

Stream Number	Stream Name	Year	Date	Survey Type[1]	Species	Mouth	Tidal	Live	Dead	Total Count	Obs.	Remarks
101-15-019	Tombstone River	1989	10/22	H	Coho			950		950	JFK	
101-15-085	Fish Creek-Hyder	1989	10/14	F	Coho			2		2	JH	NMFS/ JACK HELLE
			11/09	F	Coho			313		313	JFK	MOUTH TO BRIDGE
101-15-090	Marx Creek-Hyder	1989	10/14	F	Coho			1		1	JH	NMFS/ JACK HELLE
101-27-036	Bostwick Creek	1989	10/31	F	Coho						SH	
101-29-006	Vallenar Creek	1989	10/23	F	Coho			73		73	SH	80 JACK COHO ALSO
			10/31	F	Coho			73		73	SH	6 JAKCS
101-30-030	Keta River	1989	10/22	H	Coho			650		650	JFK	
101-30-060	Marten River	1989	10/22	H	Coho			1,175		1,175	JFK	1025 IN DICK'S CREEK
101-30-075	Sockeye Ck-Hugh Smith	1989	10/25	W	Coho			465		465	JFK	WEIR OUT 10/25
101-30-083	Humpback Creek	1989	10/22	H	Coho			350		350	JFK	
101-41-025	Lucky Cove	1989	07/12	A	Coho						EDH	2 SPORT BOATS
101-45-078	Carroll Creek	1989	09/16	B	Coho		70			70	MW	
			10/22	F	Coho			18		18	TT	
101-47-015	Ward Creek	1989	10/02	F	Coho			19		19	TT	SPORT FISH DIV
			10/12	F	Coho			28		28	SH	10 DOLLY VARDEN
			10/24	F	Coho			2		2	TT	1 COHO WAS A JACK
101-47-025	Ketchikan Creek	1989	09/07	F	Coho		1			1	JFK	

Table 1. (page 2 of 5).

Stream Number	Stream Name	Year	Date	Survey Type[1]	Species	Mouth	Tidal	Live	Dead	Total Count	Obs.	Remarks
101-55-020	Wilson River	1989	10/22	H	Coho			125		125	JFK	
101-55-040	Blossom River	1989	10/22	H	Coho			1,000		1,000	JFK	
101-55-073	Bakewell Lake Creek	1989	10/05	W	Coho			564		564	GF	WEIR/BAKEWELL LAKE
101-71-004	Chickamin River	1989	10/23	H	Coho			450		450	JFK	BARRIER CREEK
			10/23	H	Coho						JFK	BUTLER CREEK
			10/23	H	Coho			925		925	JFK	INDIAN CREEK
			10/23	H	Coho			15		15	JFK	LUDEC CREEK OUTLET
			10/23	H	Coho			25		25	JFK	SOUTH FORK
101-71-028	Walker Creek	1989	10/16	F	Coho			10		10	TT	BROWN BEAR
101-71-04E	Choca Creek	1989	10/23	H	Coho			200		200	JFK	
101-71-04H	Humpy Creek	1989	10/23	H	Coho			10		10	JFK	
101-71-04K	King Creek	1989	10/23	H	Coho			510		510	JFK	
101-75-005	Herman Creek	1989	10/24	H	Coho			75		75	JFK	
101-75-010	Grant Creek	1989	10/24	H	Coho			101		101	JFK	
101-75-015	Eulachon River	1989	10/23	F	Coho			270		270	DH	
			10/24	H	Coho			290		290	JFK	
101-75-030	Unuk River	1989	10/23	H	Coho						JFK	BEAVER DAM CREEK
			10/23	H	Coho						JFK	CLEAR CREEK
			10/23	H	Coho						JFK	COTTON WOOD CREEK
			10/23	H	Coho						JFK	CRIPPLE CREEK
			10/23	H	Coho			10		10	JFK	GENES LAKE/TOO LATE
			10/23	H	Coho						JFK	KERR CREEK
			10/23	H	Coho						JFK	KINGSBURY CREEK
			10/23	H	Coho						JFK	LAKE CREEK
			10/23	H	Coho						JFK	SAWMILL SLOUGH
			10/23	H	Coho						JFK	SPRING CREEK

Table 1. (page 3 of 5).

Stream Number	Stream Name	Year	Date	Survey Type[1]	Species	Mouth	Tidal	Live	Dead	Total Count	Obs.	Remarks
101-75-050	Klahini River	1989	10/23	H	Coho			15		15	JFK	
101-80-052	Margarita Creek	1989	10/24	H	Coho						JFK	
102-40-060	Lagoon Creek	1989	09/27	F	Coho		150	175		325	PD	
103-60-077	Trocadero B R Head	1989	10/05	F	Coho			76		76	DR	FRED TRAP
103-90-042	Shaheen Creek	1989	10/27	F	Coho			20		20	GF	5 JACKS
105-10-019	Kathleen Creek	1989	09/07	F	Coho			12		12	RT	
105-10-021	Joan Ck Affleck Can	1989	09/07	F	Coho			6		6	RCL	
105-10-024	Bear Harbor Creek	1989	09/07	F	Coho		4			4	RCL	
105-32-073	3 Mile Arm NW Arm Hd	1989	10/04	F	Coho			174		174	RCL	1 HR TOTAL INC. POND
			10/25	F	Coho			182		182	RT	ADULTS-INDEX AREA
105-42-005	Calder Creek	1989	09/06	F	Coho			4		4	RAK	
106-10-034	Luck Creek Luck Lake	1989	09/12	F	Coho			6		6	KCK	SEVERAL JUMPS IN LAKE
106-22-006	Flat Ck Mosman Inlet	1989	09/14	F	Coho			34		34	RCL	
			10/05	F	Coho			29		29	RT	DARK POOLS
			10/26	F	Coho			10		10	RT	FISH IN POOR SHAPE
106-22-016	Navy Ck	1989	09/14	F	Coho			96	1	97	RCL	
			10/23	F	Coho			21		21	RT	OLD WORN FISH
106-30-080	108 Creek Whale Pass	1989	10/16	F	Coho			113	1	114	GMF	+12JKS BETWEEN BRIDGES
106-30-082	Squaw Ck Whale Pass	1989	09/13	F	Coho		6			6	RAK	

Table 1. (page 4 of 5).

Stream Number	Stream Name	Year	Date	Survey Type[1]	Species	Mouth	Tidal	Live	Dead	Total Count	Obs.	Remarks
106-41-010	Salmon Bay Creek	1989	08/31	A	Coho						WB	JUMPS IN POOL
106-41-030	Red Lake Creek	1989	10/25	F	Coho						RT	
106-41-034	Big Ck Red Bay	1989	09/13	F	Coho		10	4		14	TWR	WAY TOO MANY TROUT
			10/04	F	Coho			11		11	RCL	TO BRIDGE
			10/25	F	Coho						RT	
106-42-010	Kah Sheets Creek	1989	08/11	A	Coho	200				200	RCL	
106-44-031	Crystal Creek	1989	08/16	A	Coho						WB	NO JUMPS
			09/06	A	Coho						WB	2 JUMPS AT MOUTH
			10/31	W	Coho			2,345		2,345	CLH	1214 MALES,1131 FEMALE
107-30-070	Snake Ck Olive Cove	1989	10/05	H	Coho			170		170	RCL	POOR VIS UPPER POOL
			10/26	F	Coho			194		194	RT	183 IN SLOUGH AREA
107-40-049	Harding River	1989	11/20	H	Coho			17		17	RCL	ABV LAKE-BELOW FALLS
107-40-052	Bradfield River N Fk	1989	11/20	H	Coho			460		460	RCL	
107-40-078	Earl West Creek	1989	10/16	F	Coho			1		1	RT	BETWEEN BRIDGES
108-20-001	King George Ck	1989	09/15	F	Coho			4		4	RCL	TO FORKS
108-40-010	North Arm Creek	1989	08/17	F	Coho						RT	
			10/05	H	Coho			40		40	RCL	5 IN UPPER POOL
			11/20	H	Coho			15	5	20	RCL	
108-40-013	Shakes Slough	1989	10/05	H	Coho			55		55	RCL	
			11/20	H	Coho			13		13	RCL	
108-40-014	Ketili Creek Barnes	1989	10/05	H	Coho						RCL	LEAVES ON ALDERS
			11/20	H	Coho			205	90	295	RCL	
108-40-016	Kikahe River	1989	08/17	H	Coho						RT	
			10/05	H	Coho			120		120	RCL	TOO MUCH WATER
			11/20	H	Coho			75	10	85	RCL	

Table 1. (page 5 of 5).

Stream Number	Stream Name	Year	Date	Survey Type[1]	Species	Mouth	Tidal	Live	Dead	Total Count	Obs.	Remarks
108-40-018	Shuktusa Branch	1989	10/05	H	Coho			75		75	RCL	
			11/20	H	Coho						RCL	
108-40-020	Andrews Creek	1989	08/17	F	Coho						TWR	
			10/05	H	Coho			570		570	RCL	INCLUDES 160 NORTH ARM
			11/20	H	Coho			25	5	30	RCL	
108-40-13A	W of Hot Springs	1989	08/17	H	Coho						RT	
			10/05	H	Coho			175		175	RCL	
			11/20	H	Coho			110		110	RCL	
108-50-003	Bear Ck Frederick Sd	1989	08/15	F	Coho			2		2	RAK	
109-10-023	Deep Cove NW Head	1989	09/17	F	Coho			11		11	SR	NSRAA DIVE SURVEY
			10/15	F	Coho			27		27	SR	NO AD CLIPS
109-20-013	Falls Ck Baranof Is	1989	08/22	W	Coho			84		84	FS	
109-30-003	Eliza Creek	1989	10/04	H	Coho			147		147	JE	LOWER POOLS
109-42-030	Kadake Creek	1989	09/08	F	Coho			1	4	5	JE	LOW DO MORT IT
109-45-013	Salt Chuck-Security	1989	10/04	H	Coho		10	30		40	JE	NO JUMPS IN CHUCK
109-62-014	Sample Creek	1989	10/25	F	Coho			4		4	RT	POOLS DARK

[1] Survey Type: H = helicopter, B = boat, A = fixed-wing aircraft, F = foot, W = weir.

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