SOUTHERN SOUTHEAST ALASKA PINK SALMON INVESTIGATIONS, 1981.

Southeast Alaska Stock Separation Research Project

Annual Report – 1982

By

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ABSTRACT

A major adult pink salmon tagging project was accomplished during 1981 in Sumner and Clarence Straits, southern Southeastern Alaska. The objectives were to investigate the migration patterns, run timing, and degree of stock intermingling of pink salmon passing through the two straits. Previous pink salmon tagging investigations had illustrated the extremely mixed nature of southern Southeastern Alaska fisheries, defined major stock groups, and identified major entry ways and migration pathways. However, more precise movement and run timing information in regard to major fishery areas was required for effective salmon management.

A total of 11,244 pink salmon were tagged and released between 1 July and 13 August. A chartered purse seine fishing vessel was employed to capture fish. Highly visible, red Peterson disk tags were used to facilitate maximum spawning ground tag recovery. Approximately 10.8% (1,212) of the fish released were recovered in spawning streams and 7.3% (819) were returned from the commercial and sport fisheries in southern Southeast Alaska.

The distribution of recovered pink salmon illustrated that the majority of District 101 and 102 stocks returned through lower Clarence Strait, migrated as far north in Clarence Strait as the confluence of Ernest Sound (mid-Clarence Strait), and then reversed their migration direction to return to their natal streams. The number of pink salmon destined for District 103 and 104 were not exceptionally high within the study areas. Those District 103 and 104 stocks that were present illustrated a wide variety of potential migration patterns including complete circumnavigation of Prince of Wales Island and side migrations into upper and/or lower Clarence and Sumner Straits. Additional tagging in Districts 103 and 104 will be necessary to determine to what extent these patterns occur or if the 1981 results are an anomaly in the normal migration patterns for District 103 and 104 salmon stocks. Pink salmon destined for District 105 were noted to return through Sumner Strait, as were District 106, 107, and lower 108 pink salmon stocks. In addition, a diversion pattern as far south in Clarence Strait as the confluence of Ernest Sound was noted for District 106 and 107 pink salmon stocks.

Pink salmon migrations occured in a fairly orderly manner through the study areas. Peak migration periods were evident for some individual stocks and larger units suggesting that effective management strategies may be devised by adjusting fishing periods to peak migration periods and/or homogeneous areas of concentration to protect or direct harvest to selected stocks. However, this approach may be limited by the degree of stock intermingling, especially during July.

INTRODUCTION

The identification of migration routes, run timing, and degree of stock intermingling is information basic to sound stock concept management. Much of this information however, is not available for major Southeastern pink salmon fisheries. The purpose of this paper is to present the results of a major adult pink salmon tagging investigation by the Southeast Alaska Stock Separation Research Project during 1981 in Sumner and Clarence Straits, southern Southeast Alaska (Fig. 1).

Southeastern Alaska pink salmon resources are composed of a heterogeneous group of stocks. Over 2,000 spawning streams of varying size, productivity, and run timing are situated on the many islands and the mainland within the Region. The waterways through which adult fish migrate and are harvested are composed of a complex system of straits, inlets, and bays. When combined with the heterogeneous nature of the returns, considerable intermingling of pink salmon stocks occurs in many major fishing areas. Sumner and Clarence Straits are two such areas.

This study was prompted by the realization that a serious informational gap was preventing effective management of southern Southeastern mixed stock pink salmon fisheries. More precise information concerning migration routes, run timing, and stock intermingling was needed to improve their management.

OBJECTIVES

The major goal of the Southeastern Stock Separation Research Project is to define and/or develop stock separation procedures that will be adaptable towards improving the management of the Region's salmon resources. The specific objectives of the 1981 Sumner and Clarence Strait tagging investigations were to:

1. Investigate the run timing and stock composition of pink salmon stocks in Sumner and Clarence Straits.

2. Determine to what extent lower Clarence Strait pink salmon stocks migrate northward into upper Clarence Strait.

3. Determine to what extent upper Clarence Strait pink salmon stocks migrate southward into lower Clarence Strait.

PREVIOUS TAGGING STUDIES

Historically, considerable pink salmon tagging has been accomplished in southern Southeast Alaska (Table 1). From the earliest investigations by the Bureau of Commercial Fisheries in the 1920's to the most recent experiments by the Fisheries Research Institute (FRI), University of Washington (1957-1958), approximately 83,000 tagged pink salmon have been released in southern Southeast Alaska. A total of 26,813 (32%) of these tags were recovered. The majority of the recoveries came from the commercial fisheries (the 1957-58 studies also included some stream recoveries). This information has been valuable in defining major entry ways and general migration patterns. A general review of the results was undertaken by combining the release and recovery information into major geographical areas (Table 2). In this analysis the following observations were of major importance.

1. The lack of a significant number of recoveries from "outside" southern Southeast Alaska illustrated the integrity of the stocks.

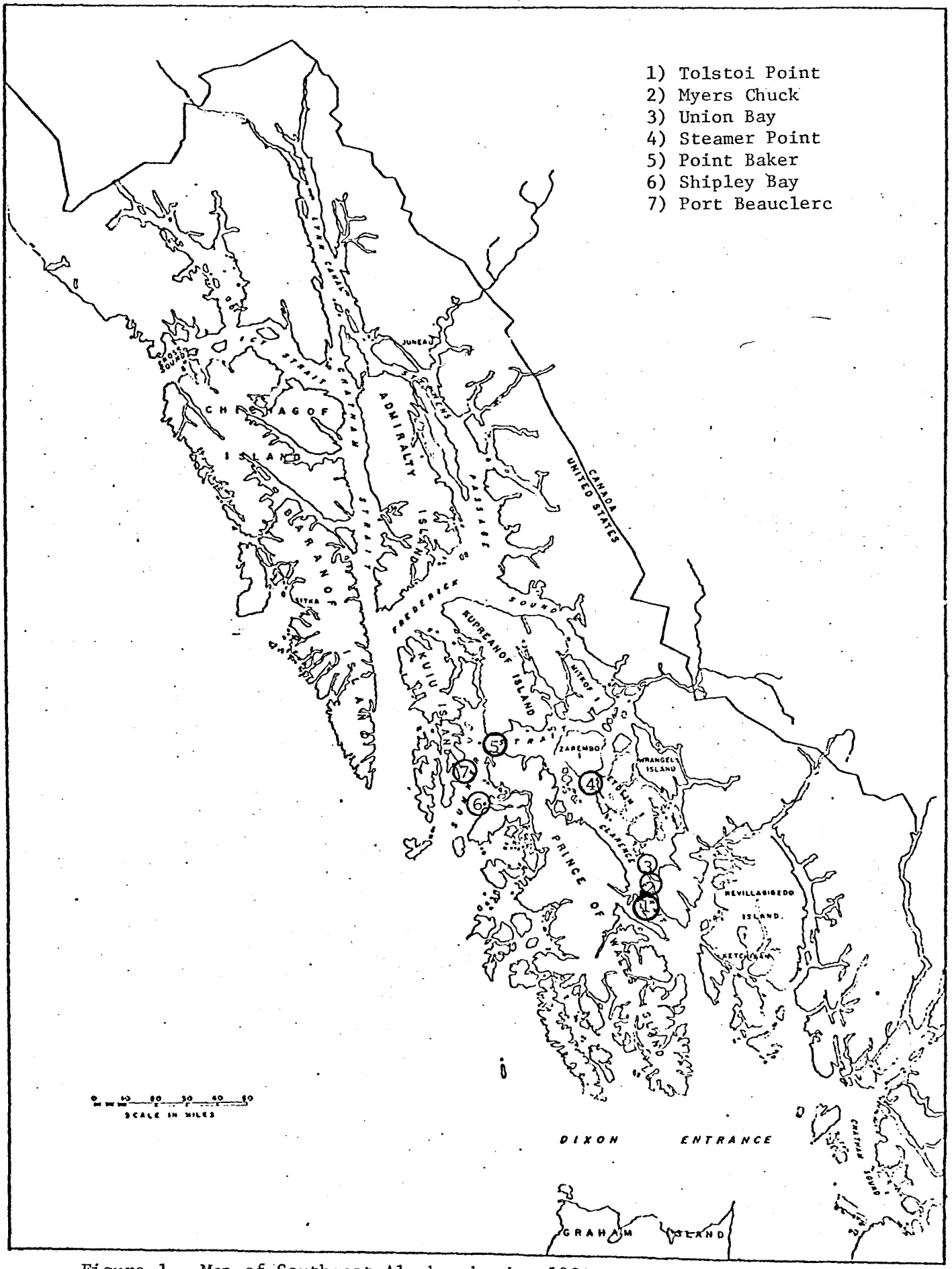

Figure 1. Map of Southeast Alaska showing 1981 tagging areas.

Table 1. Pink salmon tagging in southern Southeast Alaska, 1924-1958.

Year	Location	Inclusive Dates	Number of Releases	Source
1924	Sumner Strait Ruins Point	July 12 - Aug. 10	250	Rich, 1926
1924	So. Portland Canal Kanagunut Point	Aug. 7	22	Rich, 1926
1924	So. Clarence St. Tree Point	Aug. 8	203	Rich, 1926
1924	S.E. Clarence St. Duke Point Point White	Aug. 8 - 9	482	Rich, 1926
1925	Sumner Strait Ruins Point	July 17 - 25	1,217	Rich, 1926
1925	S.W. Clarence St. Stone Rock Bay Cape Chacon	Aug. 8 - 13	2,341	Rich, 1926
1925	West Coast Prince of Wales Island Cape Muzon Kaigani Point	Aug. 15 - 22	3,049	Rich, 1926
1925	So. Clarence St. Foggy Point	July 30 - 31	1,043	Rich, 1926
1926	So. Clarence St. Cape Fox	June 24 - July 1	137	Rich and Suomela, 1927
1926	S.E. Clarence St. Nelson Cove	July 6 - 7	288	Rich and Suomela, 1927
1926	West Coast Prince of Wales Island Cordova Bay Long Island	Aug. 10	1,479	Rich and Suomela, 1927
1926	Sumner Strait Point Colpoys	July 10	259	Rich and Suomela, 1927

Table 1. (continued)

Year	Location	Inclusive Dates	Number of Releases	Source
1927	Sumner Strait			
	Point Colpoys	July 26 - 30	577	Rich and Morton, 1929
	Cape Decision	July 30	164	Rich and Morton, 1929
1927	S.E. Clarence St.			
	Dall Head	Aug. 5	86	Rich and Morton, 1929
	Nelson Cove	Aug. 6	240	Rich and Morton, 1929
1930	So. Clarence St. Portland Canal			
	Sitklan Island	July 13 - Aug. 8	626	Rich, 1932
	Kanagunut Island	July 13 - Aug. 8	628	Rich, 1932
1930	So. Clarence St.			
	Cape Fox	July 26 - Aug. 7	489	Rich, 1932
1930	S.W. Clarence St. South Entrance			
	Kasaan Bay	July 29 - Aug. 14	281	Rich, 1932
1930	North Entrance			
	Kasaan Bay	Aug. 3 - 14	327	Rich, 1932
1930	Clarence St. Central Near			
	Windfall Harbor	Aug. 3	87	Rich, 1932
1930	North Entrance			
	Windfall Harbor	Aug. 3	200	Rich, 1932
1930	South Entrance			
	Windfall Harbor	Aug. 14	234	Rich, 1932
1932	S.E. Clarence St.			
	Duke Point	Aug. 5	467	Davidson and Christey, 1937
1935	S.W. Clarence St.			
	McLean Point	July 22 - Aug. 17	1,857	Davidson and Christey, 1937
1935	Sumner Strait			
	Point Colpoys	Aug. 13	386	Davidson and Christey, 1937

Table 1. (continued)

Year	Location	Inclusive Dates	Number of Releases	Source
1936	S.W. Clarence St.			
	McLean Point	July 18 - Aug. 15	2,441	Davidson and Christey, 1937
1936	Sumner Strait			
	Point Colpoys	July 16	498	Davidson and Christey, 1937
1947	So. Clarence St.			
	Cape Fox	July 20 - Sept. 2	1,544	Verhoeven, 1952
	Breakwater North	July 20 - Sept. 2	1,341	Verhoeven, 1952
	State Island	July 21 - Sept. 3	2,402	Verhoeven, 1952
	Ham Island	July 26 - 31	231	Verhoeven, 1952
	Cove Island	July 31 - Aug. 21	835	Verhoeven, 1952
	Lucky Cove	July 31 - Sept. 3	804	Verhoeven, 1952
	Thorne Arm	Aug. 6 - Sept. 3	912	Verhoeven, 1952
	Kah Shakes	Aug. 8 - 19	514	Verhoeven, 1952
	Point Sykes	Aug. 17 - Sept. 3	446	Verhoeven, 1952
	Shoalwater Pass	Aug. 13	88	Verhoeven, 1952
	Short Point	Aug. 19	13	Verhoeven, 1952
1947	S.E. Clarence St.			
	Davison Point	July 23 - Aug. 24	1,206	Verhoeven, 1952
	Percy Island	July 29 - Sept. 1	1,831	Verhoeven, 1952
	Dall Head	July 29 - Sept. 7	1,384	Verhoeven, 1952
	Gravina Island	July 30 - Aug. 31	1,326	Verhoeven, 1952
	Cedar Point	Aug. 1 - Sept. 1	845	Verhoeven, 1952
	Duke Point	Aug. 3 - Aug. 20	265	Verhoeven, 1952
	Nichols Passage	Aug. 14 - 22	200	Verhoeven, 1952
	Blank Point	Aug. 14 - Sept. 1	963	Verhoeven, 1952
1947	S.W. Clarence St.			
	Kendrick Bay	Aug. 2 - 30	728	Verhoeven, 1952
	McLean Point	Aug. 2 - 30	744	Verhoeven, 1952
	Bean Island	Aug. 10 - 23	423	Verhoeven, 1952
	Point Nunez	Aug. 16	101	Verhoeven, 1952
	Landslide	Sept. 6	292	Verhoeven, 1952
	Hidden Bay	Sept. 7	333	Verhoeven, 1952
1947	Clarence St.			
	No. Behm Canal			
	Escape Point	Aug. 17 - 31	701	Verhoeven, 1952
	Indian Point	Aug. 27	392	Verhoeven, 1952
	Bell Island	Aug. 5	203	Verhoeven, 1952

Table 1. (continued)

Year	Location	Inclusive Dates	Number of Releases	Source
1947	Black Island	Aug. 12	148	Verhoeven, 1952
	Point Lees	Aug. 13	117	Verhoeven, 1952
1951	Sumner Strait			
	Point Amelius	Aug. 5 - 29	13,149	Elling and Macy, 1951
	Point Baker	Aug. 5 - 26	3,027	Elling and Macy, 1951
1957	S.W. Prince of Wales Island			
	Cape Addington	July 16 - Aug. 25	7,519	Noerenberg and Tyler, 1971
	Cape Ulitka	July 27 - Aug. 14	3,959	Noerenberg and Tyler, 1971
1957	N.W. Prince of Wales Island			
	Point Desconocida	Aug. 24 - Sept. 2	3,158	Noerenberg and Tyler, 1971
1957	Prince of Wales Island			
	Ruth Bay	Aug. 17 - 18	1,099	Noerenberg and Tyler,
	McLead Bay	Aug. 17 - 18	800	Noerenberg and Tyler, 1971
1958	S.W. Prince of Wales Island			
	Cape Addington	July 9 - Aug. 24	2,930	Noerenberg and Tyler, 1971
	Cape Ulitka	July 25 - Aug 24	1,735	Noerenberg and Tyler, 1971
	Granite Point	July 19 - Aug. 1	200	Noerenberg and Tyler, 1971
	Roller Bay	July 24	60	Noerenberg and Tyler, 1971
	Tranquel Point	July 28 - Aug 14	1,111	Noerenberg and Tyler, 1971
1958	N.W. Prince of Wales Island			
	Point Desconocida	July 26 - Aug. 25	2,474	Noerenberg and Tyler, 1971
1958	Prince of Wales Island			
	Cordova Bay			
	McLeod Bay	July 31 - Aug. 21	300	Noerenberg and Tyler, 1971

Table 2. Summary of commercial recoveries of pink salmon tagged in southern Southeast Alaska, 1924 - 1958.

Tagging Areas	Sumner Strait		Clarence Strait Northern		Clarence Strait Central		Clarence Strait Southeast		Clarence Strait Southwest		Portland Canal	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Sumner Strait	5,081	68.9	1,813	24.6	161	2.2	125	1.7	97	1.3	0	0
Northern Clarence Strait	-	-	-	-	-	-	-	-	-	-	-	-
Central Clarence Strait	0	0	369	44.7	93	11.3	60	7.3	201	24.4	4	.5
Southeast Clarence Strait	140	0.3	809	15.8	607	11.8	1,015	19.8	840	16.4	357	6.9
Southwest Clarence Strait	51	1.3	159	4.1	602	15.7	974	25.3	1,348	35.1	7	.2
Prince of Wales Island Cordova Bay	6	0.5	22	1.7	103	7.7	79	5.9	122	9.2	0	0
Prince of Wales Island Southwest Coast	62	1.0	309	5.2	178	3.0	217	3.6	260	4.3	0	0
Prince of Wales Island Northwest Coast	13	0.6	27	1.2	11	0.5	13	0.6	12	0.5	0	0
Total	5,353	20.0	3,508	13.1	1,755	6.5	2,483	9.3	2,880	17.1	368	1.4

Table 2. (continued)

Tagging Areas	Prince of Wales Island Southwest Coast		Prince of Wales Island Northwest Coast		Prince of Wales Island Cordova Bay		British Columbia		Unknown		Total Number of Releases	Recovery Number & Percent of Total Release	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent		Number	Percent
Sumner Strait	18	.2	21	.3	4	.1	29	.4	21	.3	19,527	7,370	37.7
Northern Clarence Strait	-	-	-	-	-	-	-	-	-	-	0	0	0.0
Central Clarence Strait	14	1.7	14	1.7	4	.5	0	0	66	8.0	2,690	825	30.7
Southeast Clarence Strait	61	1.2	53	1.0	54	1.0	349	6.8	976	19.0	21,843	5,135	23.5
Southwest Clarence Strait	139	3.6	137	3.6	211	5.5	0	0	216	5.6	9,260	3,844	41.5
Prince of Wales Island Cordova Bay	599	45.0	27	2.0	335	25.2	4	.3	34	2.6	3,678	1,331	36.2
Prince of Wales Island Southwest Coast	503	8.4	1,117	18.6	851	14.2	2,019	33.7	481	8.0	20,563	5,997	29.2
Prince of Wales Island Northwest Coast	30	1.3	2,042	88.4	7	0.3	4	0.2	152	6.6	5,632	2,311	41.0
Total	1,364	5.1	3,411	12.7	1,466	5.5	2,405	9.0	1,946	7.3	83,193	26,813	32.2

[1] Includes in-stream recoveries.

All past tagging studies have demonstrated a virtual separation of Southeastern pink salmon into distinct northern and southern units.

2. Only a few pink salmon released in Sumner Strait were recovered on the outside coast of Prince of Wales Island. Additionally, only a minor movement from Clarence Strait releases to the outside coast of Prince of Wales Island was noted.

3. Major movements from lower Sumner Strait into upper Sumner and Clarence Straits were illustrated.

4. A distinct movement from lower Clarence Strait into middle and upper Clarence Strait was denoted.

5. A distinct portion of the releases along the Southwest Coast of Prince of Wales Island and in Southeast Clarence Strait were recovered in Canadian waters.

6. Only a small portion of the tagged pink salmon released along the outside coast of Prince of Wales Island were recovered in Sumner and Clarence Straits.

The commercial fishery recovery information indicates the presence of three major stock groups in southern Southeast Alaska. The largest group, as illustrated by the catch records, returns to the West Coast of Prince of Wales Island from Sea Otter Sound to Cordova Bay. A second group consists of those stocks which return via Coronation and Warren Island, enter Sumner Strait and distribute to the spawning streams of Sumner Strait and upper Clarence Strait. The third group consists of those stocks which return through Dixon Entrance before distribution into mid and lower Clarence Strait, Revillagigedo Channel, and Behm Canal. The only anomalies noted in these patterns were the recoveries of Southeast Clarence Strait tag releases in Portland Canal (6.9%) and British Columbia (6.8%), and Southwest Prince of Wales Island releases that were recovered in British Columbia (33.7%).

In summary, a considerable amount of tagging has been accomplished over the past 60 years. These investigations have demonstrated the complex nature of pink salmon movements, defined major entry ways and identified important migration pathways. However, more precise movement and run timing information in regard to major fishing areas in southern Southeast Alaska will be required for effective salmon management in the area.

METHODS

The F.V. CONFIDENCE, chartered from Fred Magill of Petersburg, was utilized during July and August for the capture and tagging phase of this project.

Tags Employed

Highly visible Peterson disc tags were employed to facilitate maximum recoveries. Each tag consisted of two bright red plastic disks (3/4 inch diameter) and a 3 inch soft, stainless steel needle. One disk from each tag set was numbered and had "ADF&G Juneau - Reward" or "ADF&G Ketchikan - Reward" printed on it.

Tagging Operations

Pink salmon were tagged and released in July along the Myers Chuck, Union Bay, and Tolstoi Point shorelines; July - early August along the Steamer Point, Shipley Bay, and Port Beauclerc shorelines; and intermittently in July and early August near Point Baker.

Standard purse seining methodologies were employed to capture fish. The tagging equipment and techniques used were the same as utilized during the four years this study was conducted in northern Southeast Alaska (Larson 1977-78; Hoffman 1979-80). Pink salmon captured during 1981 were fairly large (50-80 cm) for most of the season which eliminated the problem of fish being gilled in the seine webbing as experienced during the 1978 northern Southeast Alaska pink salmon tagging project.

Tag Recovery

Tag recovery efforts were directed toward the commercial and sport fisheries and the spawning grounds, although the commercial and sport fish recoveries were minimal in comparison to those from the spawning grounds. A two dollar reward was offered to encourage voluntary tag returns. ADF&G catch samplers were instructed to be on the alert for tagged fish, and a news release was provided to the local media informing the public of the releases and describing what to do with the recovered tags.

The recovery of tags from the spawning grounds was given the most emphasis. A total of 158 pink salmon spawning streams in southern Southeast Alaska were selected as primary recovery areas. The selection was based on historical production, suitability for recovery, and geographical distribution.

Only those streams with an average even year historical escapement (1961-1979) of over 4,000 pink salmon in Districts 105-109, and over 8,000 in Districts 101-104 were included in the selection process. Spawning streams located south of Sea Otter Sound in District 103, and all streams in District 104 were not included because past tagging records indicated only a very small movement to these areas from proposed tag release locations. Some streams were not considered suitable for tag recovery due to their large size, excessive depth, or turbidity. In general, every major pink salmon spawning stream, where recovery was feasible and had expected returns migrating through Sumner and Clarence Straits, was included as a primary recovery stream.

The timing of surveys was considered the critical factor for successful recovery. Stream escapement records were reviewed to determine peak spawning times. This was accomplished with the assistance of computer programs to summarize escapement records. Tag recovery surveys were scheduled during, and two weeks after the usual peak spawning time for each stream. Streams additional to the primary recovery systems were surveyed as time permitted.

A total of seven two-person tag recovery teams were employed. The State Research vessels Auklet, Steller, Sundance, and Clupea were utilized for stream survey activities. In addition, another team consisting of Ketchikan office staff was flown out, as needed, to help complete the survey of primary recovery streams.

Tag recovery was accomplished by employing five-prong spears attached to 12 foot poles. This method was quite effective on the spawning riffles; however, when fish were schooled in deep pools complete recovery was difficult. Recovery crews however, made an intensive effort to count all tags seen during surveys. This information was used to determine if further surveys were needed to recover a large number of remaining tags. Additionally, the crews examined dead fish, and many tags were recovered in the process. Polorized sunglasses were utilized to eliminate glare and increase visiblity.

Data Analysis

A data file consisting of the tag release and recovery information was established on the Ketchikan office's Vector Graphics computer terminal. A computer program devised by Ivan Frohne (ADF&G Biometrician) and Larry Talley (ADF&G Programmer) was used to edit and sort the data for analysis.

RESULTS

The results presented are only those of the initial season of tagging in southern Southeast Alaska and should be viewed with some caution prior to management application. Additional studies will be required to determine the consistency of stock migration, run timing, and stock intermingling patterns. The tagging study should be repeated in 1982, 1983, and 1984 to compare even and odd year cycles.

Tagging

Tagging was initiated on 1 July and continued until 13 August. During this period 22 days of tagging were accomplished. A total of 11,244 pink salmon were tagged and released, including 2,278 along the Tolstoi Point shoreline, 4,668 along the Myers Chuck shoreline, 355 in Union Bay, 2,584 along the Steamer Point shoreline, 14 near Point Baker, 670 along the Shipley Bay shoreline, and 675 along the Port Beauclerc shoreline (Table 3). Tolstoi Point releases were accomplished during July, as were the Myers Chuck, Union Bay, and Point Baker releases. The distribution of releases was even greater for Steamer Point, Shipley Bay, and Port Beauclerc; beginning in early July and terminating on 13 August. The number of tagged fish released at any of these locations varied greatly and was dependent upon weather and/or the availability of fish at a given time.

Spawning Ground Tag Recovery

Spawning ground tag recovery efforts were initiated in late July and continued through September. A total of 236 tag recovery surveys were completed in 158 southern Southeastern spawning streams (Appendix Table 2). All streams were surveyed twice. The timing of surveys was considered the critical factor for successful recovery. Stream escapement records were reviewed to determine the peak spawning time and recovery surveys were scheduled during, or two weeks after the usual peak spawning time. The timing of the tag recovery surveys seemed adequate for good escapement coverage, as a comparison of the numbers of pink salmon observed during tag recovery efforts and seasonal escapement counts indicated that a sufficient percentage of the escapement was examined for tags. Overall, the sum of the peak escapements observed on the spawning grounds during tag recovery surveys (1,119,351) was 43% of the total of the peak counts (2,593,509) noted for the inside tag recovery spawning streams of southern Southeastern during 1981 (Table 4).

Table 3. Number of tagged pink salmon released, southern Southeast Alaska, 1981.

Tagging Period	Tolstoi Point Shoreline		Myers Chuck Shoreline		Union Bay Shoreline		Steamer Point Shoreline		Point Baker Shoreline		Shipley Bay Shoreline		Port Beauclerc Shoreline		Total
	Date	Number	Date	Number	Date	Number	Date	Number	Date	Number	Date	Number	Date	Number	
Early July	10,15 July	5	10,11,14,15 July	1,945	1,2,15 July	355	3,8,9 July	465	8 July	5	7 July	0	7 July	0	2,775
Late July	24,29 July	2,273	23,28 July	2,723	-	-	16,22,31 July	1,451	17 July	9	17,21 July	6	17,21 July	23	6,485
Early August	-	-	-	-	-	-	5 August	668	-	-	8,13 August	654	8,13 August	652	1,974
Season Totals	4 days	2,278	6 days	4,668	3 days	355	7 days	2,584	2 days	14	5 days	670	5 days	675	11,244

Table 4. Spawning stream tag recovery efforts, southern Southeast Alaska, 1981.

District	Number of Streams Surveys	Number of Surveys	Sum of peak stream escapements observed during tag recovery	Sum of seasonal peak observed escapements	Number of tags recovered
101	31	32	180,788	697,020	27
102	19	30	138,947	343,905	69
103	19	19	178,009	576,838	0
104	0	0	not recorded	N/A	0
105	25	44	212,372	307,516	291
106	28	54	134,356	176,017	214
107	25	45	224,257	255,123	475
108	3	4	11,773	12,270	7
109	2	2	1,633	19,800	0
110	6	6	37,216	205,020	2
Total	158	236	1,119,351	2,593,509	1,085

Commercial Tag Recovery Efforts

The majority of the commercial recoveries were reported from the southern Southeastern commercial net fisheries where approximately 10,023,312 pink salmon were harvested (Table 5). The majority of the harvest was in the District 101, 103, and 104 seine fisheries. Both District 101 and 103 seine fisheries opened on 30 July, while District 104 opened on 5 July. The last opening in District 101 occurred on 21 August, District 103 on 31 August, and District 104 on 15 August. Seine fishery openings in District 102 opened on 26 July and closed 21 August. A total of 697,608 pink salmon were caught during this period. District 105 and 106 seine openings started on 2 August, ended on 15 and 27 August respectively, with a total harvest of 309,471 in District 105 and 381,824 in District 106. Seine openings in District 107 occurred only on 10 and 11 August with 31,128 pink salmon harvested. District 108 was not open for seine fisheries in 1981. The southern Southeastern gillnet fisheries caught 416,348 pink salmon in District 101 (Tree Point), 419,200 in District 106 (upper Clarence Strait), and 1,440 in District 108.

It would be impossible to determine the specific home streams of tagged pink salmon recovered in the various net fisheries; however, whenever a majority of the harvest was confined to a discrete area the recovered tags could be allocated to a distinct stock group with a high degree of confidence. Thus, the majority of tagged pink salmon recovered in the District 105 (Affleck Canal only) seine fishery and the District 107 seine fishery were probably destined for the local spawning streams and the tag recovery information could be utilized to describe their total stock group migration patterns.

Tags Recovered

A total of 1,212 tags (10.8% of the releases) were recovered from the spawning grounds, and an additional 819 (7.3%) were reported from the commercial fisheries (Table 6). A majority of the stream recoveries (1,095) were collected during tag recovery and escapement surveys conducted by Fish and Game personnel (Table 7). The public reward system accounted for 101 stream recoveries; additionally, 17 were reported by the ADF&G FRED Division escapement weir on McDonald Lake. Commercial seine harvests accounted for most of the fishery returns (576), while others were reported from the gillnet fisheries (194), troll fisheries (5), Annette Island fish traps (16), Canadian (6), or were of unknown origin (21).

Distribution of Recoveries

Tagged pink salmon were recovered over a widespread area (Appendix Table 3). However, only two were reported from northern Southeastern (Districts 9-15), and one from the Skeena River in Canada. No tags were reported as being recovered from the outside coasts of northern Southeastern (Appendix Table 1). The distribution of recovered tags strongly suggested that the pink salmon which passed through the Sumner and Clarence Strait tagging areas were almost exclusively destined for the southern Southeastern spawning streams.

Commercial fishery recoveries were mostly from the southern Southeastern seine fisheries in Clarence Strait (Districts 101, 102, and 106), the District 101 (Tree Point) and District 106 (upper Clarence Strait) gillnet fisheries, and the Canadian gillnet fisheries (4). Recoveries from the net fisheries indicated that major portions of these catches migrated through Sumner and Clarence Strait on their return to their natal streams.

Table 5. Southern Southeast Alaska net fisheries, 1981.

Fishery	Fishing Season	Days Open *	Number of Pink ** Salmon Harvested
District 1B gillnet	15 June - 15 September	38	416,348
District 1 seine	30 July - 21 August	7.125	1,122,628
District 2 seine	26 July - 21 August	10.375	697,608
District 3 (3A, 3B, & 3C) Seine	30 July - 31 August	11.03	3,563,735
District 4 seine	5 July - 15 August	16.50	3,079,930
District 5 seine	2 August - 27 August	11.75	309,471
District 6 gillnet	16 June - 1 September	24.5	419,200
District 6 seine	2 August - 15 August	6.5	381,824
District 7 seine	10 August - 11 August	1.63	31,128
District 8 gillnet	16 June - 1 September	8.5	1,440
District 8 seine	Not Open		
		Total	10,023,312

* 24 hour days.

** 1981 catch data is preliminary.

Table 6. Number and percent of tags recovered, southern Southeast Alaska, 1981.

Release Location	Number of tagged pink salmon	Number and percentage of tagged pink salmon recovered		
		Ocean waters	Spawning	Total
Tolstoi Point	2,278	187 (8.2%)	142 (6.2%)	329 (14.4%)
Myers Chuck	4,668	226 (4.8%)	436 (9.3%)	662 (14.1%)
Union Bay	355	9 (2.5%)	21 (5.9%)	30 (8.5%)
Steamer Point	2,584	354 (13.7%)	316 (12.2%)	670 (25.9%)
Point Baker	14	2 (14.3%)	2 (14.3%)	4 (28.6%)
Shipley Bay	670	30 (4.5%)	211 (31.5%)	241 (36.0%)
Port Beauclerc	675	11 (1.6%)	84 (12.4%)	95 (14.0%)
All Areas	11,244	819 (7.3%)	1,212 (10.8%)	2,031 (18.1%)

Table 7. Number of reported tag recoveries by method, southern Southeast Alaska, 1981.

Tag recovery method	Number and percent of reported recoveries	
Alaska Department of Fish and Game stream recovery	1,095	53.9%
Public reward system stream recovery	101	4.9%
Alaska Department of Fish and Game stream escapement weirs	17	.8%
Commercial sene fishery	576	28.4%
Commercial gillnet fishery	194	9.6%
Commercial troll fishery	5	.3%
Annette Island fish traps	16	.8%
Unknown or miscellaneous	21	1.0%
Canadian	6*	.3%
Total	2,031	100%

*Canadian recoveries were 5 commercial and 1 in-stream recovery.

Numerous spawning ground tag recoveries in Districts 105-107 indicated that most of these stocks migrated to their natal streams via Sumner Strait and upper to mid-Clarence Strait. However, the return to District 101 and 102 was noted to occur mainly through lower Clarence Strait as indicated by the numerous tag recoveries from the mid-Clarence Strait release sites recovered within these districts.

Migration Patterns

Migration patterns of pink salmon that passed through the tagging areas were analyzed for the net fisheries and the escapement. The analysis was based on the estimated percentages of the escapement or harvest passing through the release areas in bi-monthly time segments (i.e., early July 1-15, late July 16-31, and early August 1-15). The percentages were based on the number of tags recovered from each of the release sites by the bi-monthly time segments (Appendix Tables 3 and 4). Separate analysis were performed for movement along the Tolstoi Point, Myers Chuck, Union Bay, Steamer Point, Point Baker, Shipley Bay, and Port Beauclerc shorelines (Appendix Fig. 1). Return characteristics were evaluated for each stream and, based on run timing similarities and geographical distribution, various stock groups were identified. The migration patterns of the stock groups were analyzed by combining the recovery information from the various streams within the group and then evaluating group characteristics in the same manner as the individual streams.

District 101

A total of 145 tags were recovered from District 101 (58, spawning stream; 87, commercial). Of the tags recovered, 53 were released near Tolstoi Point, 58 near Myers Chuck, 8 in Union Bay, 24 at Steamer Point, and 2 near Shipley Bay. A review of these figures indicates that this District's escapement returned via two pathways. First, it appears that a percentage of this District's escapement (18% of the tags recovered) returned via Sumner and upper Clarence Strait and were destined mainly for Behm Canal and lower District 101. On the other hand, a significant portion of this District's return (82% of the tags recovered) passed through lower Clarence Strait, migrated as far north as the confluence of Ernest Sound with Clarence Strait, and then reversed their migration direction before returning to their natal streams in West Behm Canal and the lower portions of District 101 (Fig. 2). In addition, the Tree Point gillnet fishery harvested 416,348 pink salmon, while the District 101 seine fishery harvested 1,122,628 pinks. The majority of commercial fishery tag recoveries came from the District 101 seine harvest (56 seine, 6 gillnet; Table 3).

District 102

A total of 155 tags were recovered from District 102 (94, spawning stream; 61, commercial). Tolstoi Point releases represented 103 of the recoveries, Myers Chuck 48, Union Bay 1, and Steamer Point 3. A review of these figures indicates a majority of this District's pink salmon stocks (97% of the tags recovered) returned through lower Clarence Strait, migrated as far north as the confluence of Ernest Sound with Clarence Strait, and then returned to their natal streams along the lower Southeastern shore of Prince of Wales Island. Only a minor portion of the return to this District (3% of the tags recovered) represented pinks which migrated through Sumner Strait and down Clarence Strait from the north (Fig. 3). In addition, the District 102 seine fishery harvested 697,608 pink salmon, with all but two of the 61 commercial recoveries coming from Tolstoi Point and Myers Chuck release sites (Table 3).

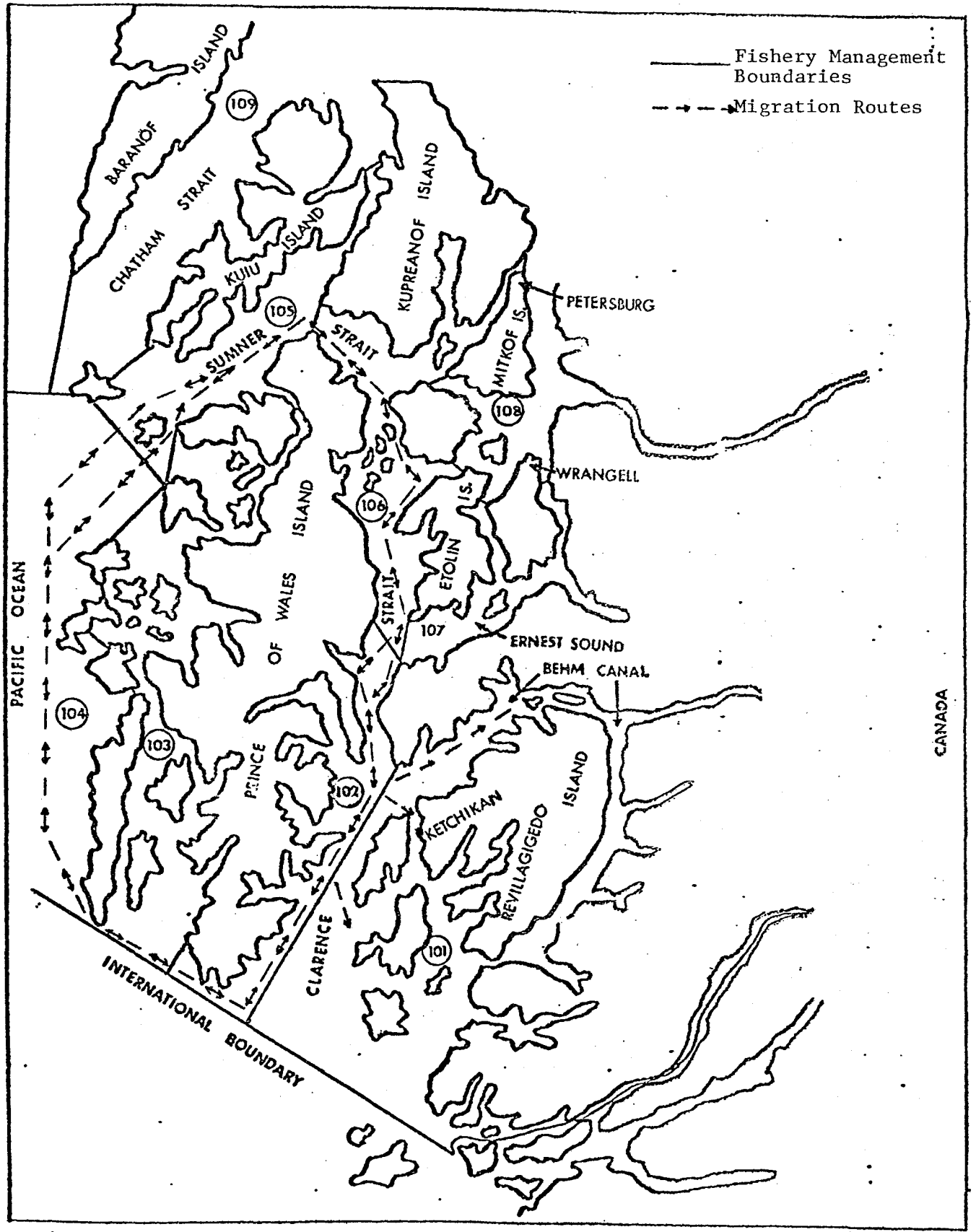

Figure 2. District 101 pink salmon migration patterns as indicated by commercial and stream recoveries of tagged pink salmon released at Tolstoi Point, Myers Chuck, Steamer Point, Point Baker, Shipley Bay, and Port Beauclerc, southern Southeast Alaska, 1981.

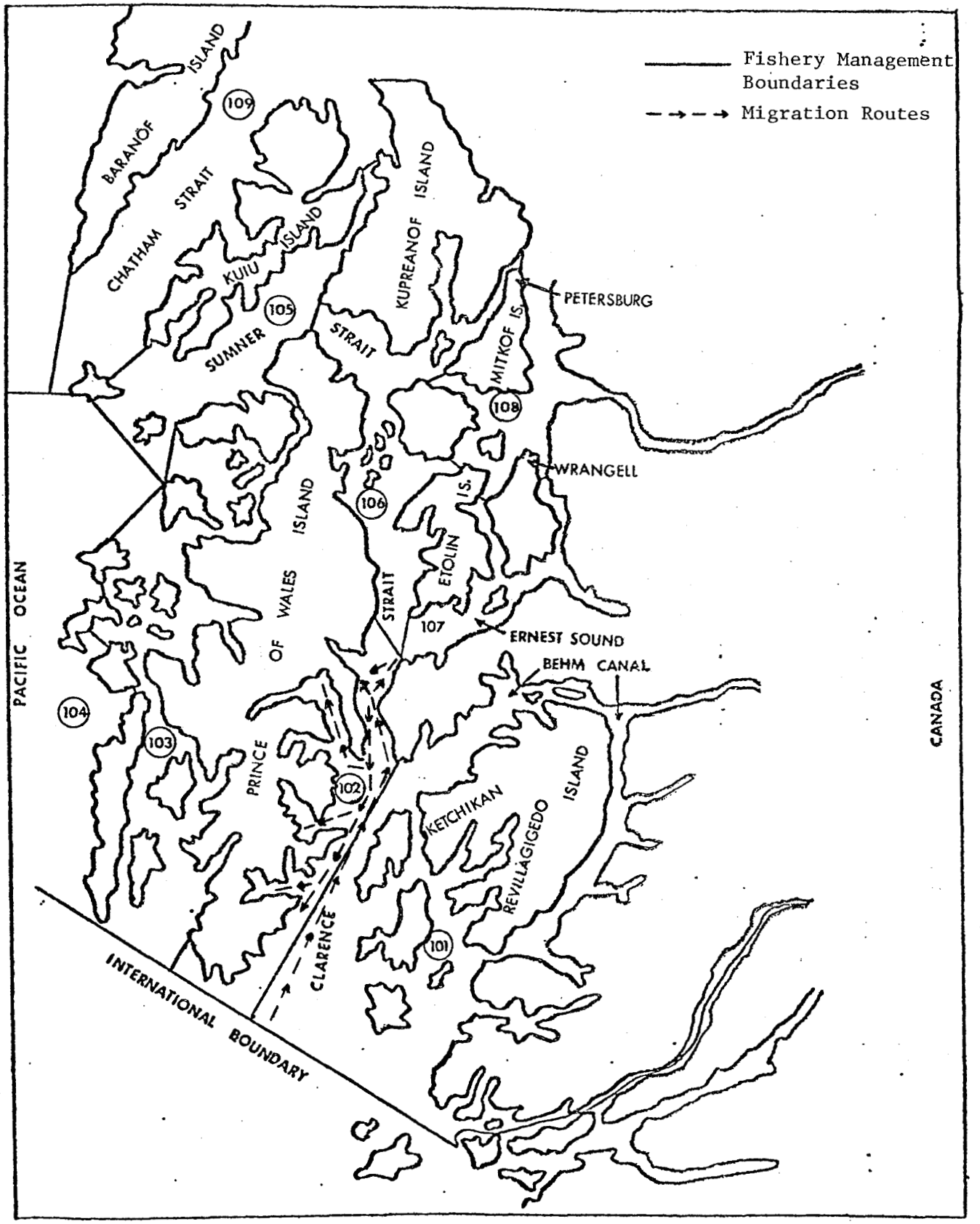

Figure 3. District 102 pink salmon migration patterns as indicated by commercial and stream recoveries of tagged pink salmon released at Tolstoi Point, Myers Chuck, Steamer Point, Point Baker, Shipley Bay, and Port Beauclerc, southern Southeast Alaska, 1981.

District 103

A total of 38 tags were recovered in District 103 (all commercial fisheries recoveries). Tolstoi Point releases represented 15 of these recoveries, Myers Chuck 6, Steamer Point 11, and Shipley Bay 6. The distribution of recoveries from this district was highly varied, with tagged pink salmon from both the Sumner and Clarence Strait release sites being recovered within this district. Indications are that pink salmon destined for District 103 enter Sumner Strait, migrate around the north end of Prince of Wales Island, pass into Clarence Strait, and either back out to District 103 (i.e., Sea Otter Sound) or continue down Clarence Strait and then migrate around the southern end of Prince of Wales Island before returning to their natal streams. In addition, it was also apparent that a portion of this District's pink salmon stocks migrated in the opposite direction, passing around the south end of Prince of Wales Island before either continuing around the Island or backing out to District 103 streams. Finally, another portion of this District's stocks migrated into Sumner Strait and then backed out to District 103 spawning streams in Sea Otter Sound (Fig. 4). Commercial seine openings in District 103 harvested 3,563,735 pink salmon. All 38 tag recoveries in this district were reported from these fisheries (Table 3).

District 104

A total of five tags were recovered from District 104 (all from the commercial fisheries). Tolstoi Point releases represented 3 recoveries, Myers Chuck 1, and Steamer Point 1. Due to the limited number of tag recoveries from this district, it would be impossible to determine definite migration patterns. All that can be noted is that this District's stocks may follow a similar pattern to District 103 stocks; that is, pink salmon migration may also consist of circumnavigation of Prince of Wales Island or movement past either end of Prince of Wales Island as illustrated by recoveries from both the upper and middle Clarence Strait release sites. Only extensive tagging of District 103 and 104 stocks will confirm or deny this conclusion (Fig. 5). The seine fishery in this district harvested 3,079,930 pink salmon from which all five tag recoveries were reported (Table 3).

District 105

A total of 305 tags were recovered from District 105 (290, spawning; 15, commercial). Tolstoi Point releases represented 2 recoveries, Steamer Point 2, Shipley Bay 217 and Port Beauclerc 84. A review of the figures indicates the majority of this District's stocks return through lower Sumner Strait and disribute to their natal streams. One minor anomoly noted was that a small percentage apparently travel as far inland as upper Clarence Strait before returning to their spawning streams. The overall incidence of this is minor, however, when compared to the portion of the return which doesn't exhibit this pattern (Fig. 6). The seine fishery in District 105 (Affleck Canal only) harvested 309,471 pink salmon with all 15 commercial tag recoveries coming from this fishery (Table 3).

District 106

A total of 825 tags were recovered from District 106 (242, spawning; 583, commercial). Tolstoi Point releases represented 110 of the recoveries, Myers Chuck 211, Union Bay 4, Steamer Point 473, Point Baker 2, Shipley Bay 15, and

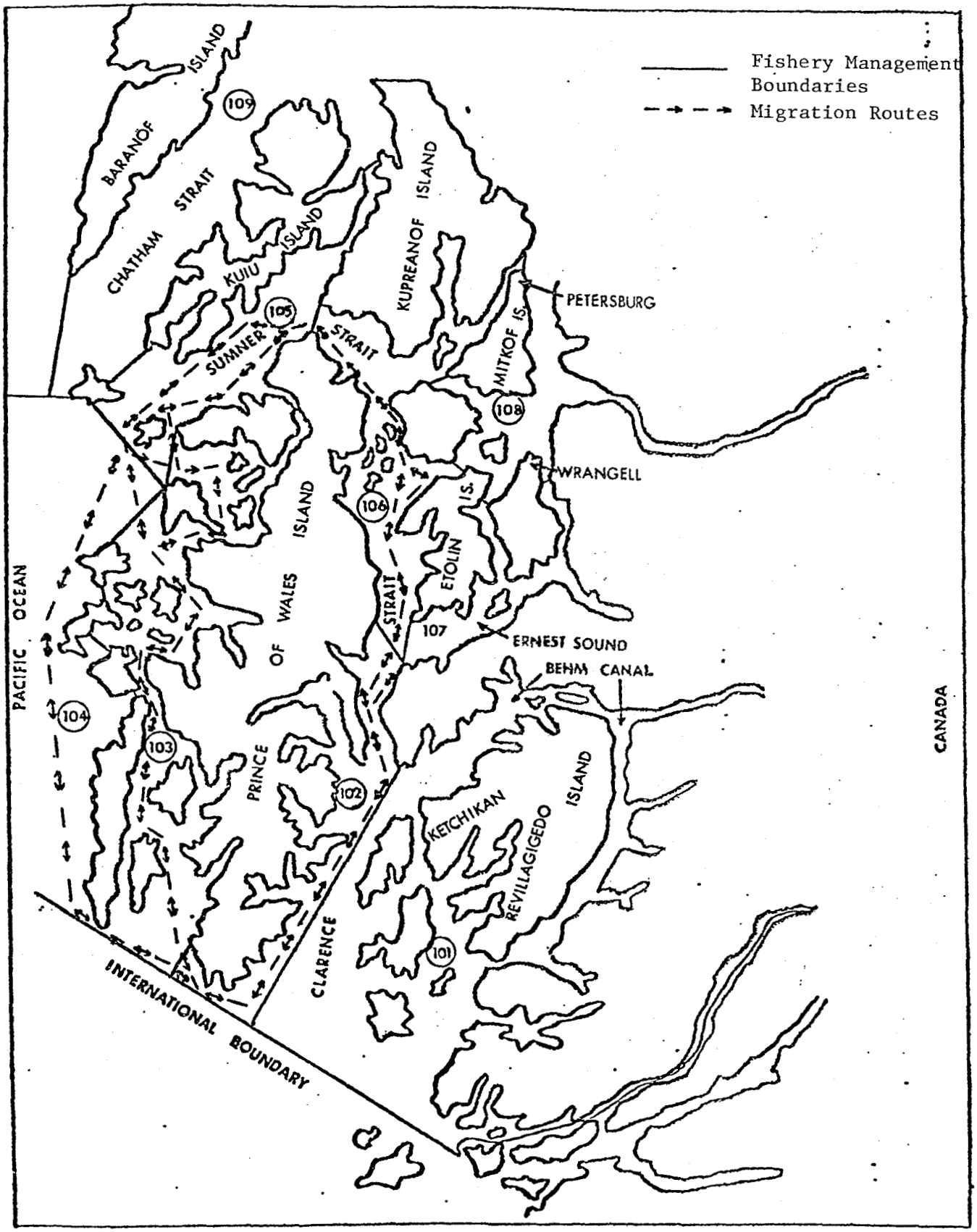

Figure 4. District 103 pink salmon migration patterns as indicated by commercial and stream recoveries of tagged pink salmon released at Tolstoi Point, Myers Chuck, Steamer Point, Point Baker, Shipley Bay, and Port Beauclerc, southern Southeast Alaska, 1981.

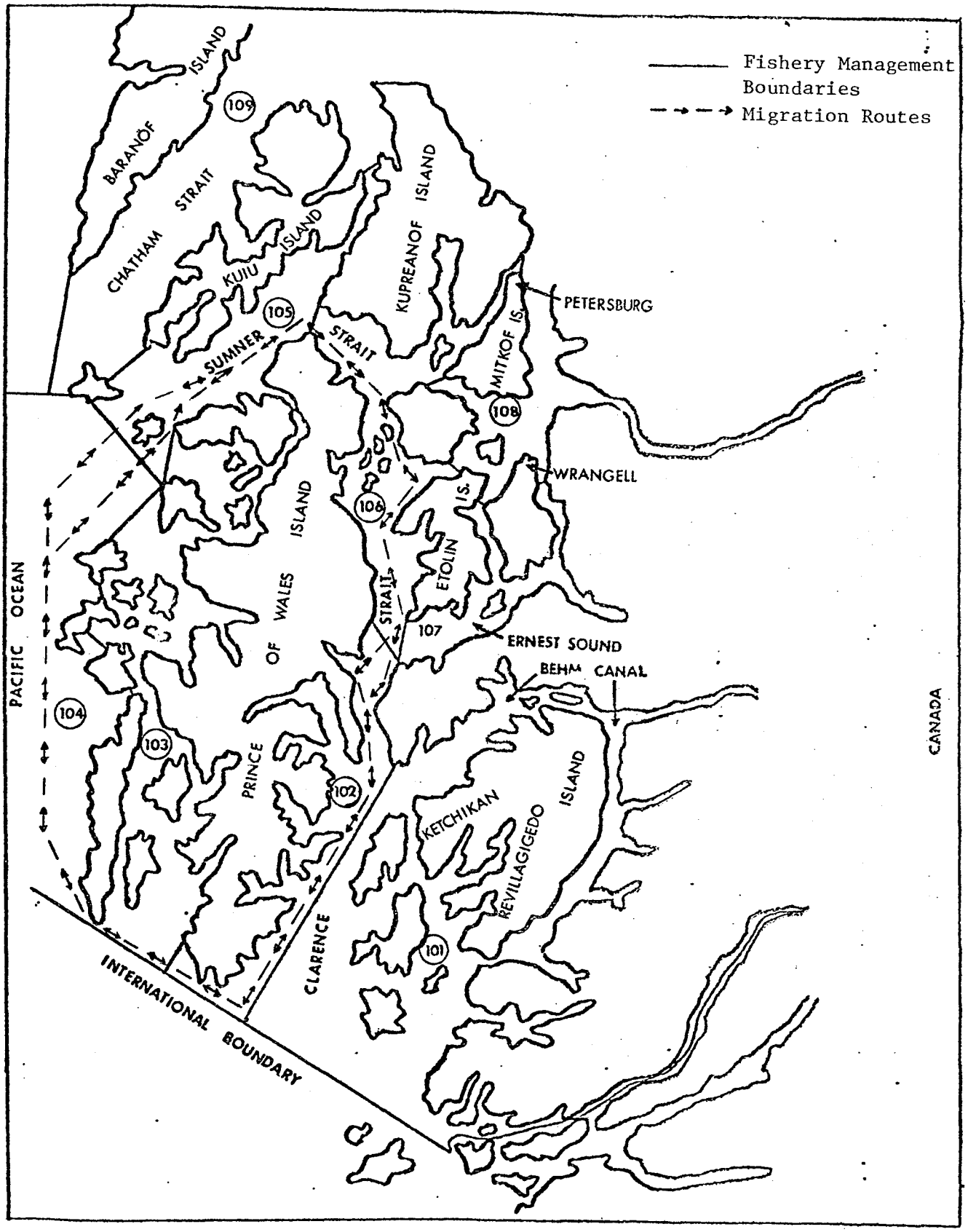

Figure 5. District 104 pink salmon migration patterns as indicated by commercial and stream recoveries of tagged pink salmon released at Tolstoi Point, Myers Chuck, Steamer Point, Point Baker, Shipley Bay, and Port Beauclerc, southern Southeast Alaska, 1981.

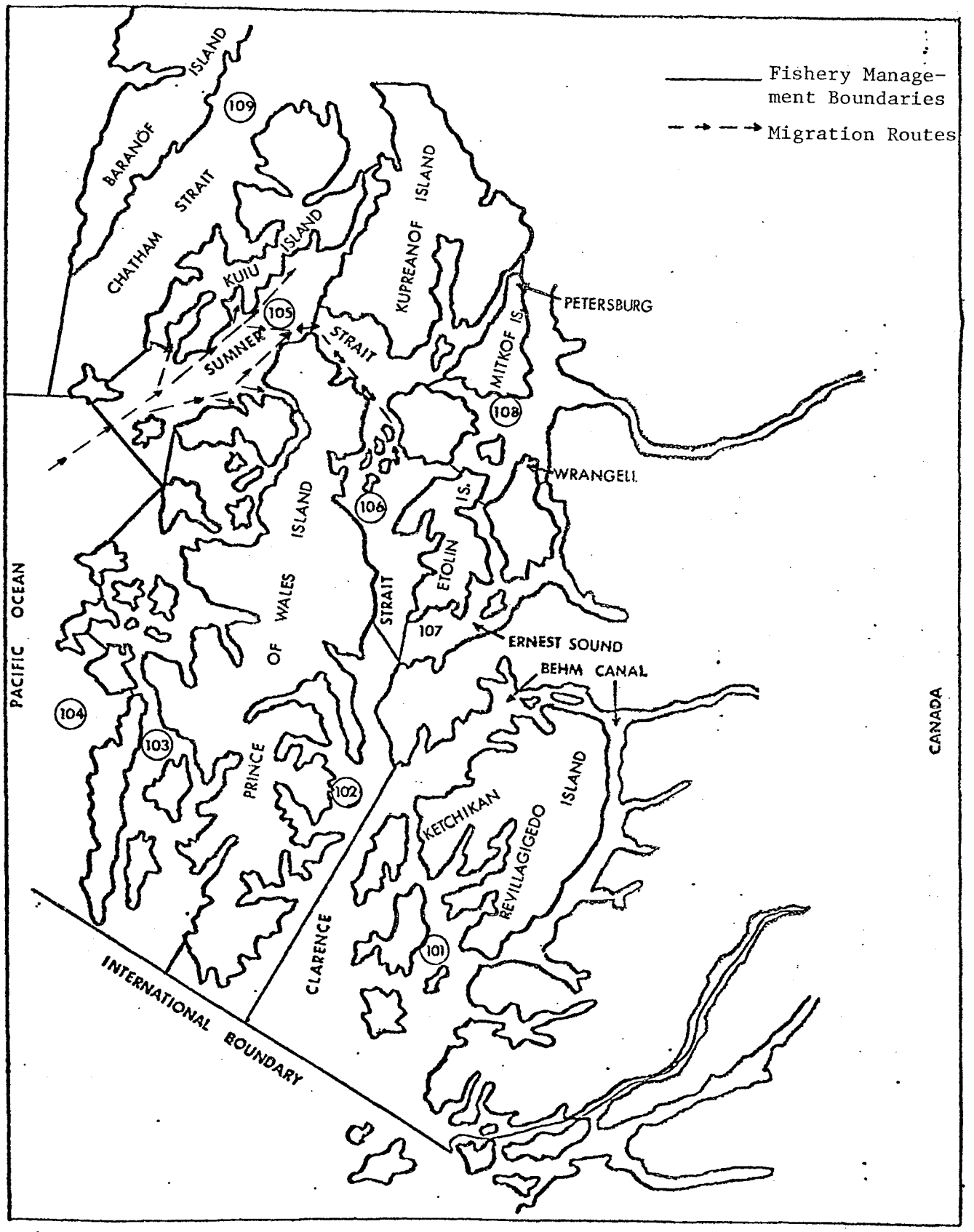

Figure 6. District 105 pink salmon migration patterns as indicated by commercial and stream recoveries of tagged pink salmon released at Tolstoi Point, Myers Chuck, Steamer Point, Point Baker, Shipley Bay, and Port Beauclerc, southern Southeast Alaska, 1981.

Port Beauclerc 10. A review of these figures indicates that the majority of this District's pink salmon return entered through lower Sumner Strait, migrated around the northern end of Prince of Wales Island and then migrated to their natal streams within this district. A small percentage of this District's pink salmon stocks were noted to migrate down Clarence Strait as far as Ernest Sound before returning to their spawning streams. This phenomenon was noted particularly for the pink salmon stocks bound for Burnett, Mosman, and McHenry Inlets on the Southwest Coast of Etolin Island (Fig. 7). The gillnet fishery in District 106 harvested 419,200 pink salmon while the seine fishery harvested 381,824 pink salmon. A total of 167 tag recoveries were reported from the gillnet fishery and 475 from the seine fishery (Table 3).

District 107

A total of of 543 tags were recovered from District 107 (521, spawning; 22, commercial). Tolstoi Point release represented 41 of the recoveries, Myers Chuck 323, Union Bay 15, Steamer Point 161, Point Baker 2, and Shipley Bay 1. A review of these figures indicates the majority of the District's return migrated through Sumner Strait, passed around the northern end of Prince of Wales Island, migrated down Clarence Strait, and traveled past the confluence of Ernest Sound with Clarence Strait before returning to their natal streams in Ernest Sound, Zimovia Strait, Eastern Passage, and Bradfield Canal (Fig. 8). The seine fishery in lower Ernest Sound harvested 31,128 pink salmon, with all 22 reported commercial recoveries coming from this fishery (Table 3).

District 108

A total of seven tags were recovered in District 108, all from the spawning grounds. Myers Chuck releases represented five recoveries while Steamer Point recoveries totaled two. Due to the limited number of recoveries in this District it is impossible to state conclusively what direction pink salmon stocks used to return to this district. Apparently some pink salmon destined for this area returned via Sumner Strait, while others returned via Clarence Strait. Further work is necessary to determine the importance of Sumner Strait verses Clarence Strait as avenues of migration for lower District 108 pink salmon stocks (Fig. 9). The gillnet fishery in this district harvested only 1,440 pink salmon.

Run Timing

Three major run timing periods were apparent from the tag release and recovery information. These were based on the time of passage along the Tolstoi Point, Myers Chuck, Union Bay, Steamer Point, Point Baker, Shipley Bay, and Port Beauclerc shorelines and should not be confused with time of appearance on the spawning grounds.

The peak migration periods ranged from early July through mid-August. The stock units were considered as either early (July 1-15), middle (July 16-31), or late run (August 1-15) according to similarities of passage in time. In general, with a few exceptions, the time of passage was noted to be similar for stocks spawning within large contiguous geographical areas.

Early run pink salmon consisted of those stocks which had a majority of their escapement pass the release sites during early July. Early run pink salmon were found only along the Myers Chuck, Union Bay, and Steamer Point shorelines.

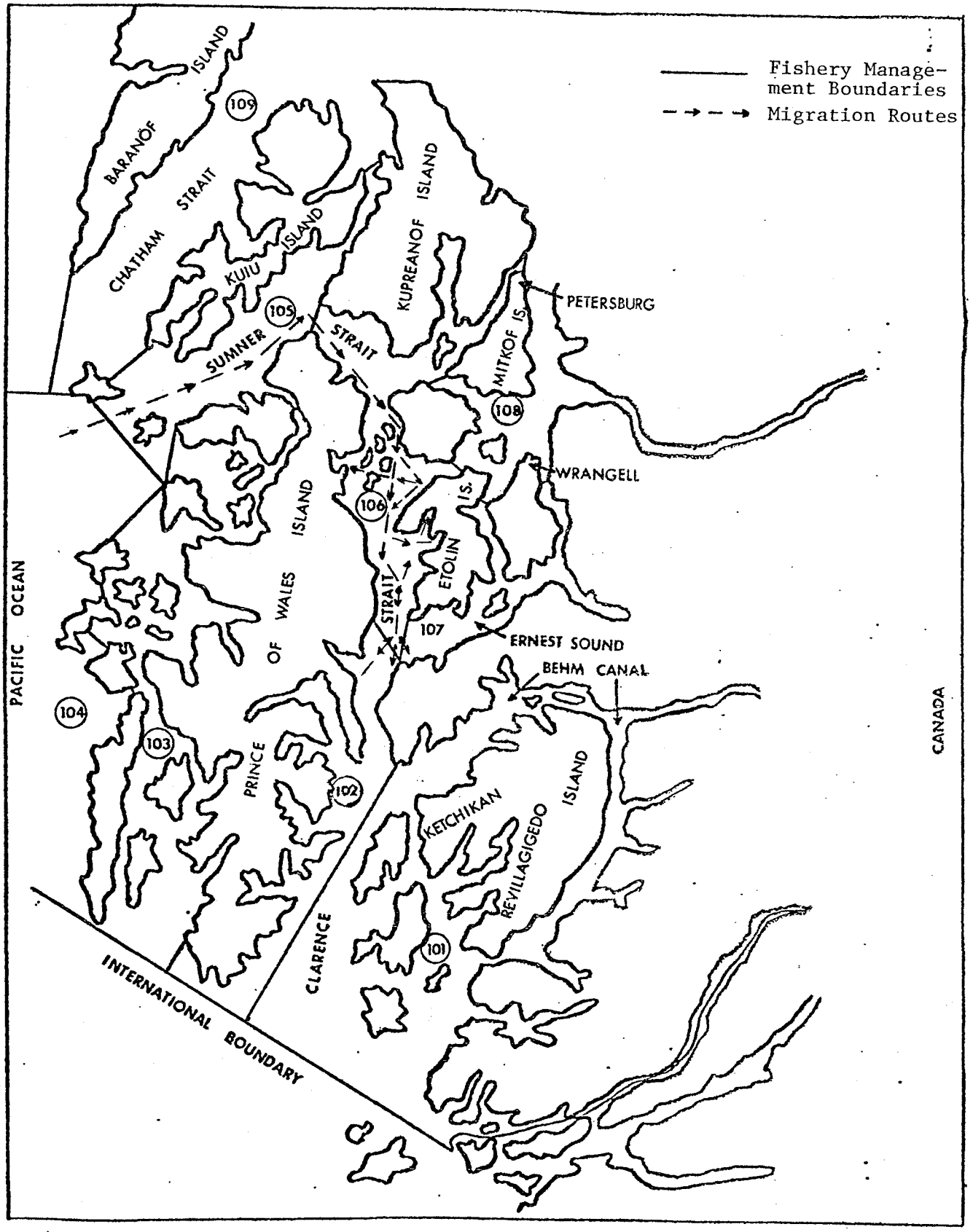

Figure 7. District 106 pink salmon migration patterns as indicated by commercial and stream recoveries of tagged pink salmon released at Tolstoi Point, Myers Chuck, Steamer Point, Point Baker, Shipley Bay, and Port Beauclerc, southern Southeast Alaska, 1981.

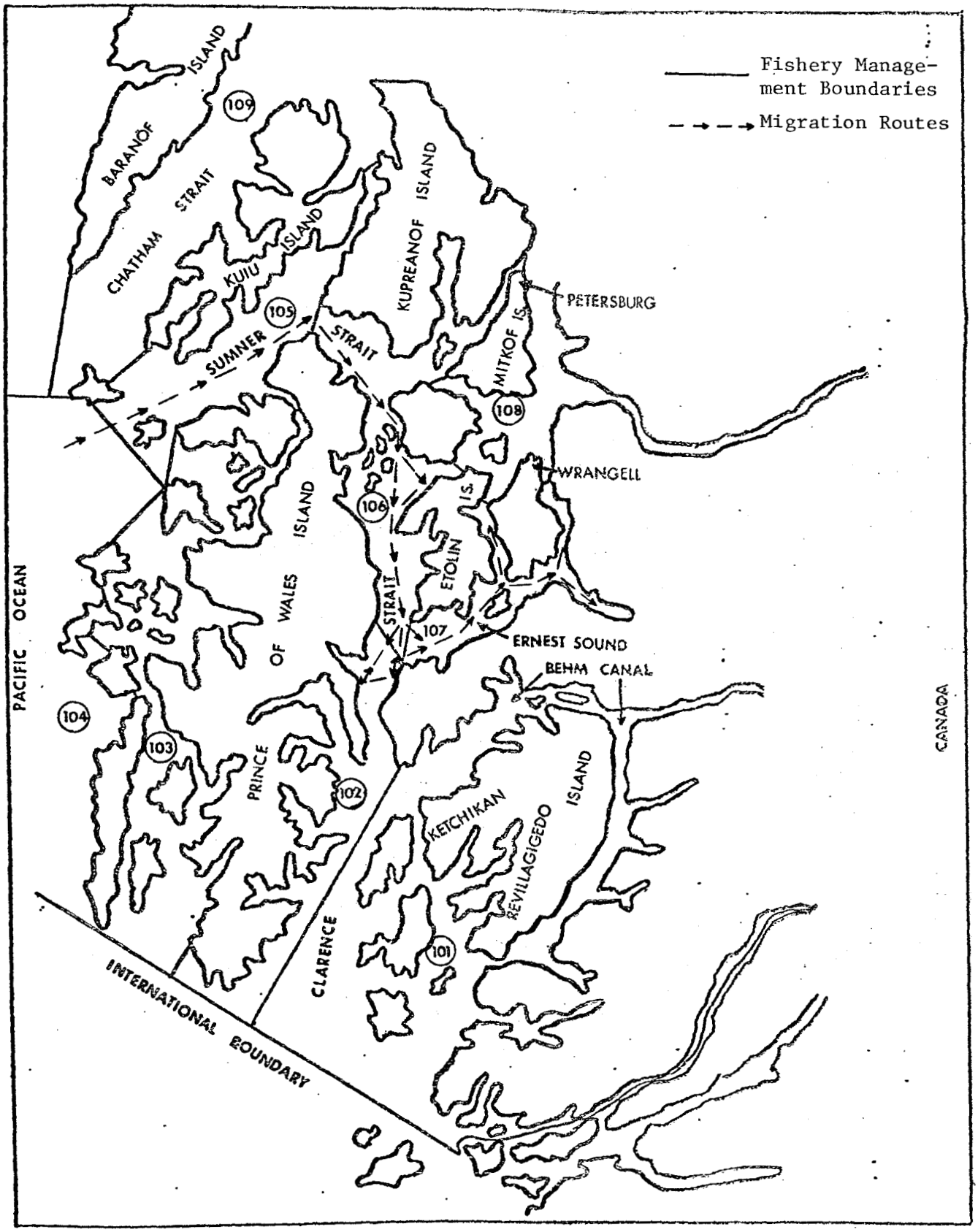

Figure 8. District 107 pink salmon migration patterns as indicated by commercial and stream recoveries of tagged pink salmon released at Tolstoi Point, Myers Chuck, Steamer Point, Point Baker, Shipley Bay, and Port Beauclerc, southern Southeast Alaska, 1981.

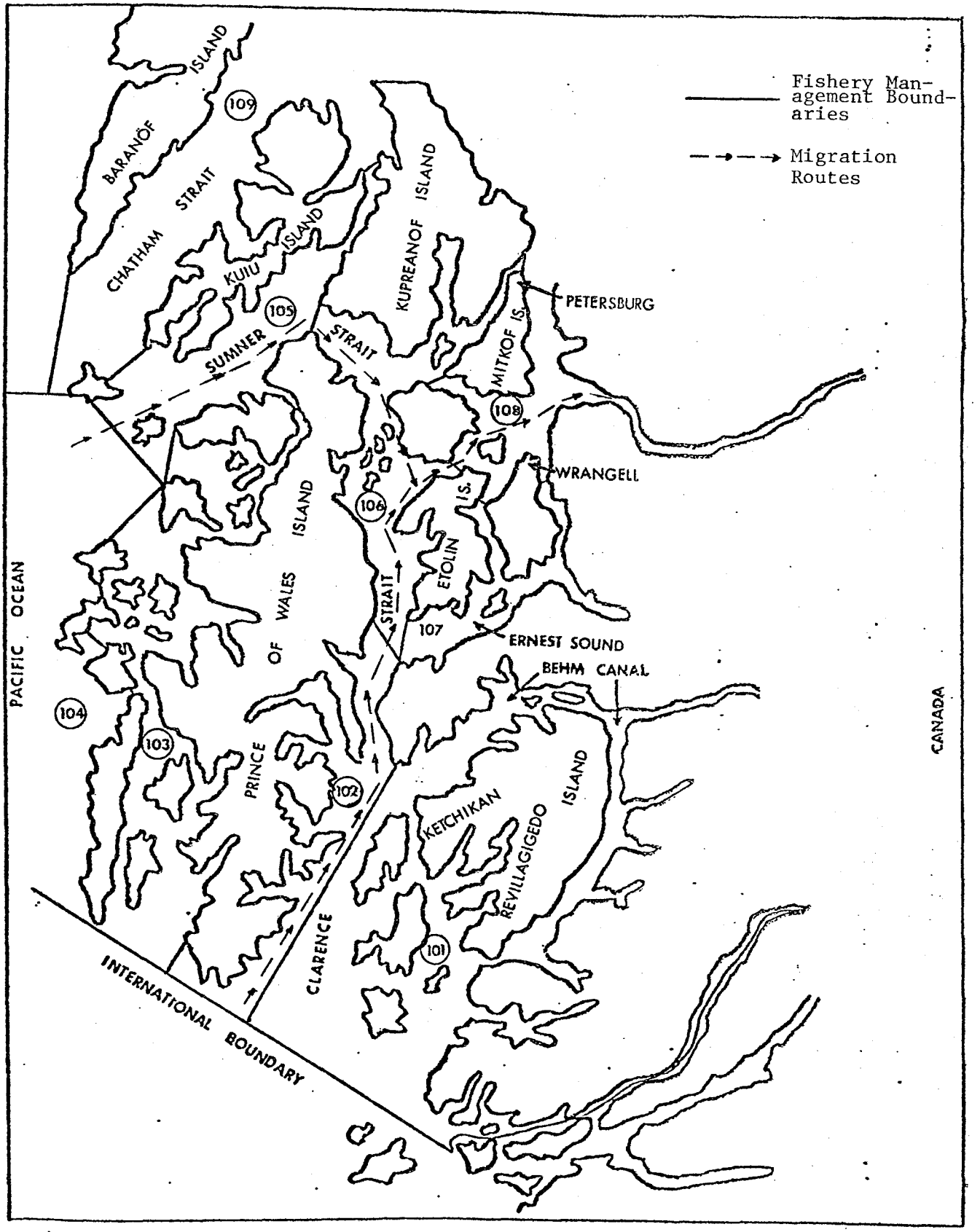

Figure 9. District 108 pink salmon migration patterns as indicated by commercial and stream recoveries of tagged pink salmon released at Tolstoi Point, Myers Chuck, Steamer Point, Point Baker, Shipley Bay, and Port Beauclerc, southern Southeast Alaska, 1981.

Pink salmon tagged near Myers Chuck during this period were destined for lower District 101 (i.e., Tree Point gillnet fishery), Behm Canal (District 101), the Southeast shore of Prince of Wales Island in District 102, District 106 (i.e., upper Clarence Strait gillnet and seine fisheries), District 107, and District 108 (Stikine River) (Fig. 10). Similarly, Union Bay early run pink salmon were destined for the same area as those passing Myers Chuck, except for District 108 (Fig. 11). Finally, Steamer Point early run pink salmon were destined for lower District 101, Behm Canal (District 101), the Southeast shore of Prince of Wales Island in District 102, District 106, District 107, and District 108 (Fig. 12, Appendix Fig. 1, and Appendix Table 5).

Middle run stocks were those which demonstrated a peak migration past the release sites during the late July (16-31) release period. The geographical distribution of the middle run stocks was widely dispersed . Pink salmon tagged and released during this period at Tolstoi Point were recovered in Districts 101-107, with the majority reported from Districts 101, 102, 106, and 107 (Fig. 13). Pink salmon tagged and released near Myers Chuck were recovered in Districts 101-104 and 106-108, with the highest number reported for District 106 and 107 (Fig. 10). Steamer Point releases were recovered in Districts 101-108, with the majority of recoveries reported from Districts 106 and 107 (Fig. 12). Only a limited number of pink salmon were tagged and released near Point Baker; all of the reported recoveries came from Districts 106 and 107 (Fig. 14). Shipley Bay and Port Beauclerc recoveries during this period were also limited, with all Shipley Bay recoveries reported from District 106 (Fig. 15) and Port Beauclerc recoveries reported from Districts 105 and 106 (Fig. 16, Appendix Fig. 1 and Appendix Table 5).

The late run consisted of stocks that passed the release sites in early August (August 1-15). Major concentrations of these stocks were noted along the Port Beauclerc, Shipley Bay, and Steamer Point shorelines (Fig. 12, 15, and 16). Pink salmon tagged and released near Port Beauclerc were recovered in Districts 105 and 106. Shipley Bay recoveries were reported from Districts 101, 103, 105, 106, and 107, with the majority recovered in Districts 105 and 106 (96.1%). Steamer Point recoveries were much more widely dispersed. Recoveries from this site were reported from Districts 101, 102, 105, 106, and 107, with 94.9% of the recoveries made in Districts 106 and 107 (Appendix Fig. 1 and Table 5).

Stock Intermingling

The degree of pink salmon stock intermingling was found to vary seasonally and between release sites. Most southern Southeast Alaska pink salmon were noted to return to their natal streams within a six week period. Distinct differences in run timing were apparent for some stocks, however, while overlap and similarities were noted for many others (Appendix Fig. 1). A high degree of stock intermingling was evident along the Tolstoi Point, Myers Chuck, Union Bay, and Steamer Point shorelines throughout the season. Recoveries from Tolstoi Point and Myers Chuck releases occurred in Districts 101-104 and 106-107, with minor recoveries in District 108. Tags recovered from Union Bay releases occurred in Districts 101-102 and 106-107, while Steamer Point releases were reported from Districts 101-103 and 105-108, with minor recoveries in District 104. On the other hand, tags recovered from releases at Point Baker occurred only in Districts 106 and 107, while Shipley Bay and Port Beauclerc releases were mainly in District 105, with minor recoveries in District 103, 106, and 107.

The intermingling of pink salmon stocks along the Tolstoi Point, Myers Chuck,

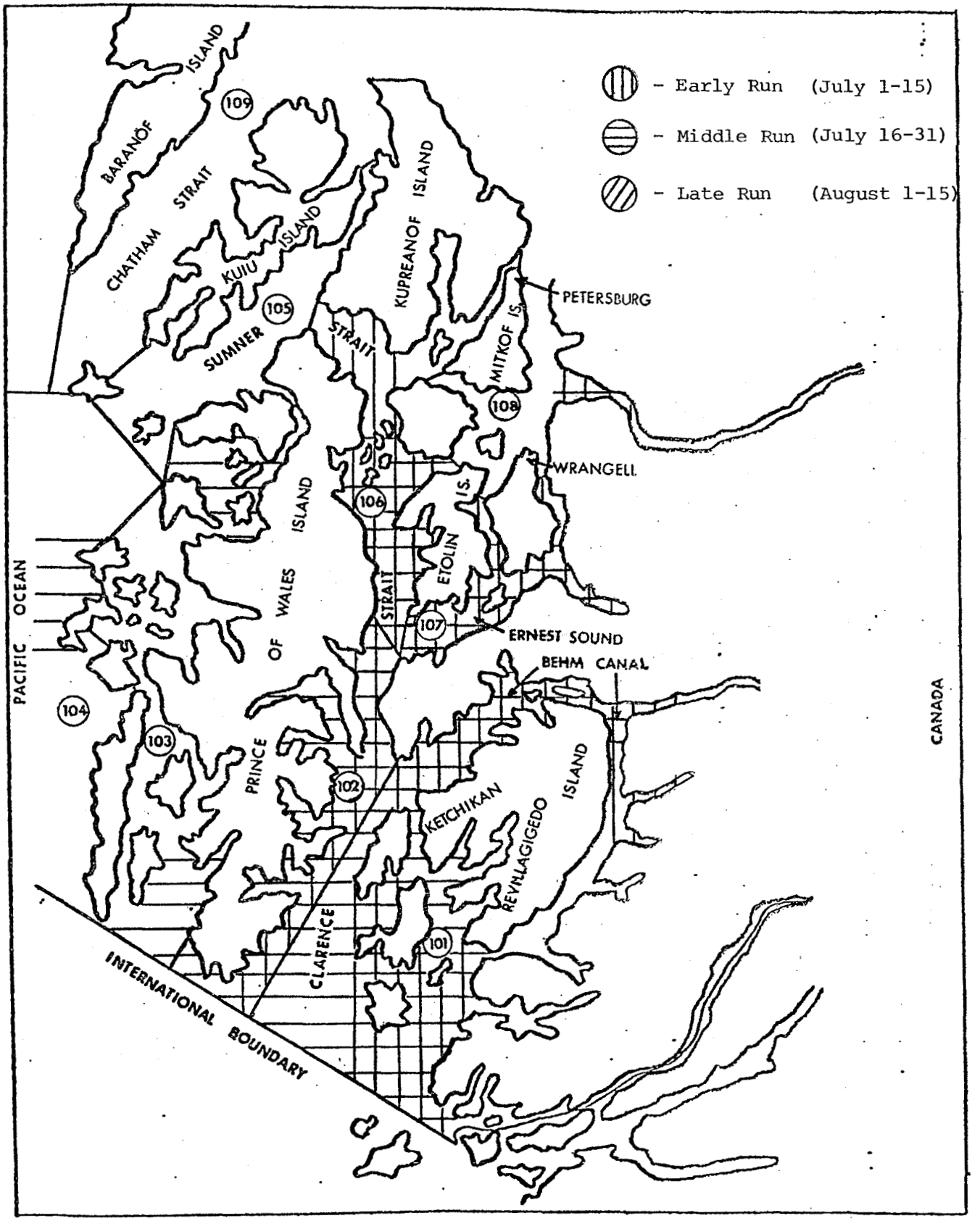

Figure 10. Early and middle run pink salmon spawning areas as determined by time of passage past the Myers Chuck shoreline, southern Southeast Alaska, 1981.

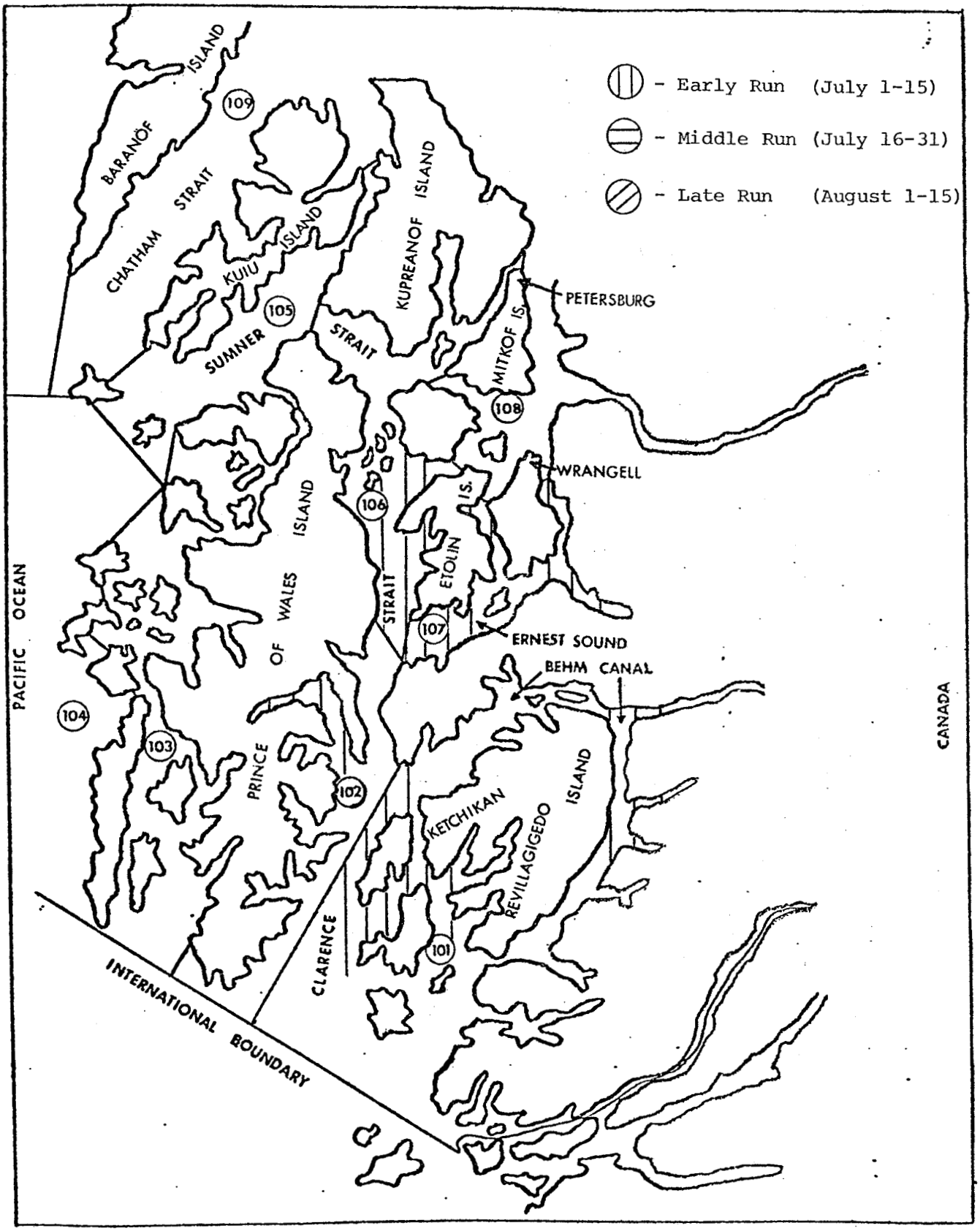

Figure 11. Early run pink salmon spawning areas as determined by time of passage past the Union Bay shoreline, southern Southeast Alaska, 1981.

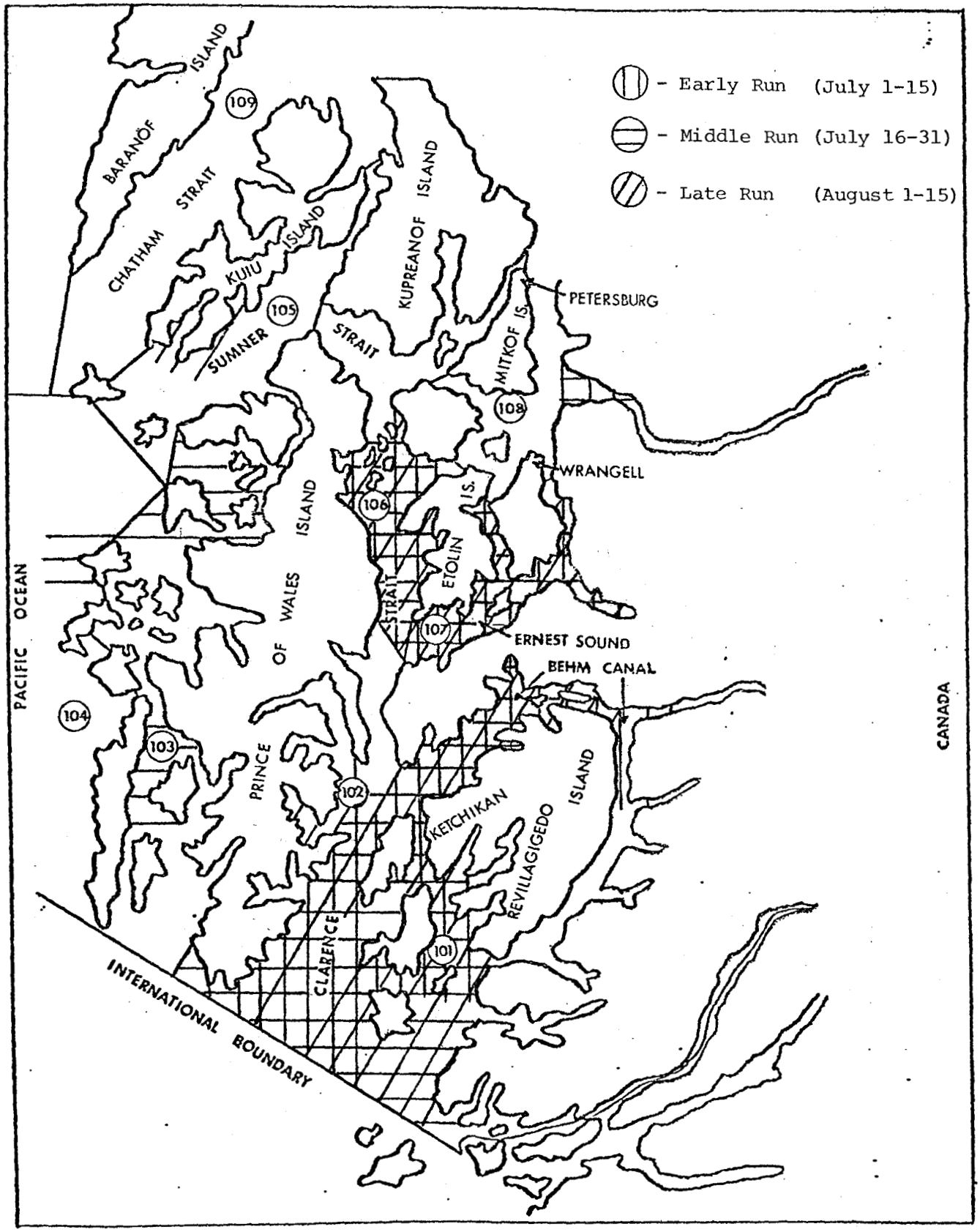

Figure 12. Early, middle, and late run pink salmon spawning areas as determined by time of passage past the Steamer Point shoreline, southern Southeast Alaska, 1981.

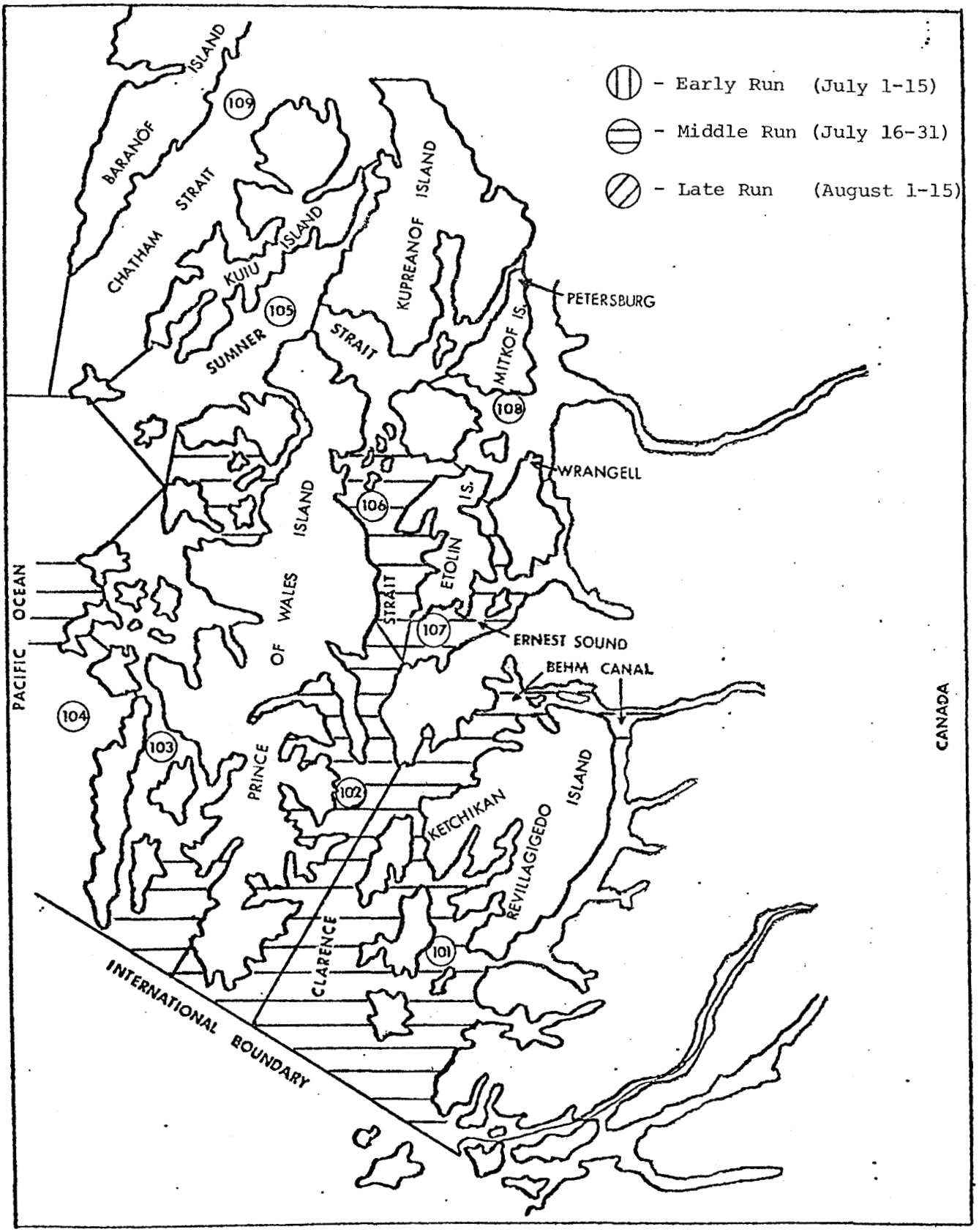

Figure 13. Middle run pink salmon spawning areas as determined by time of passage past the Tolstoi Point shoreline, southern Southeast Alaska, 1981.

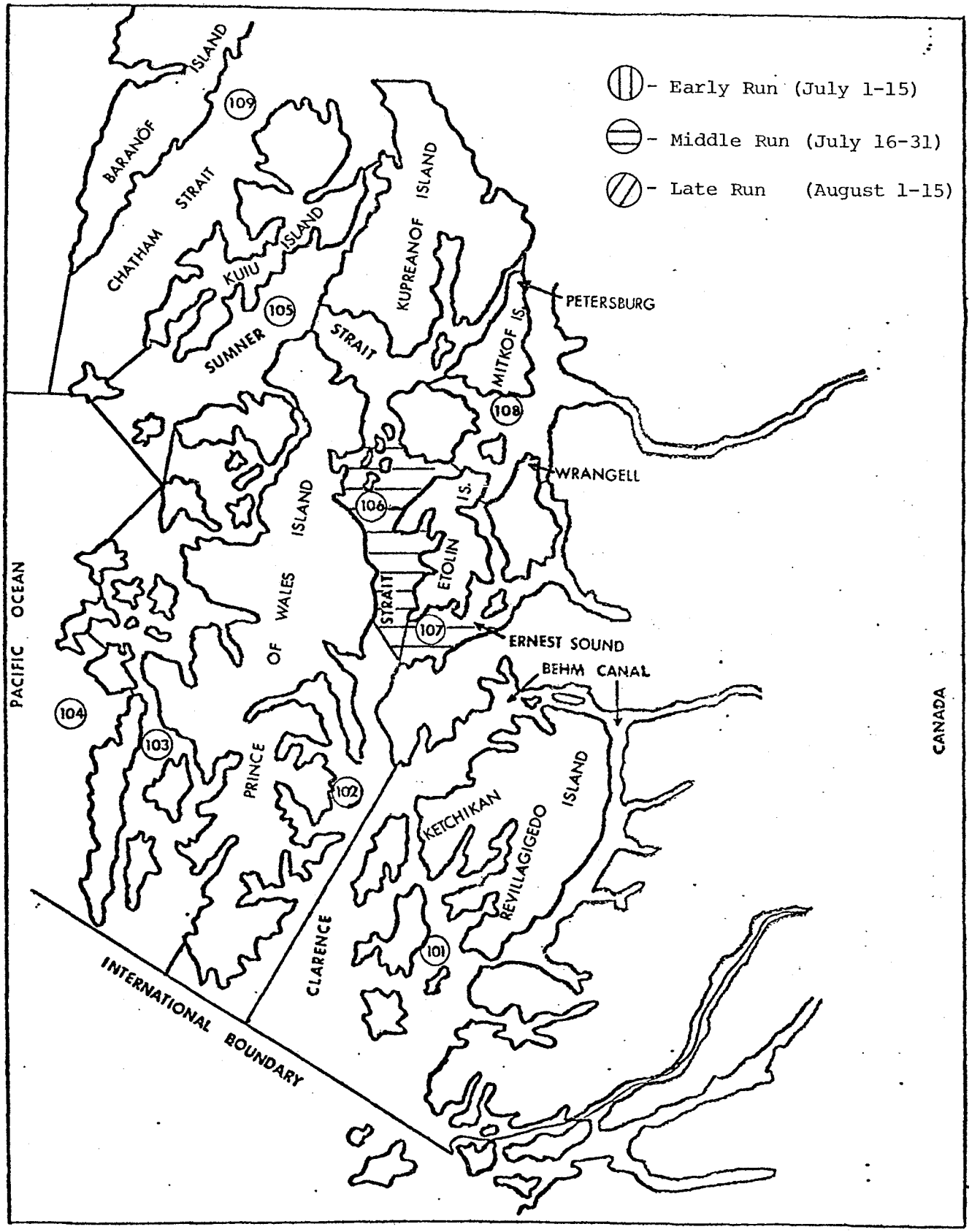

Figure 14. Middle run pink salmon spawning areas as determined by time of passage past the Point Baker shoreline, southern Southeast Alaska, 1981.

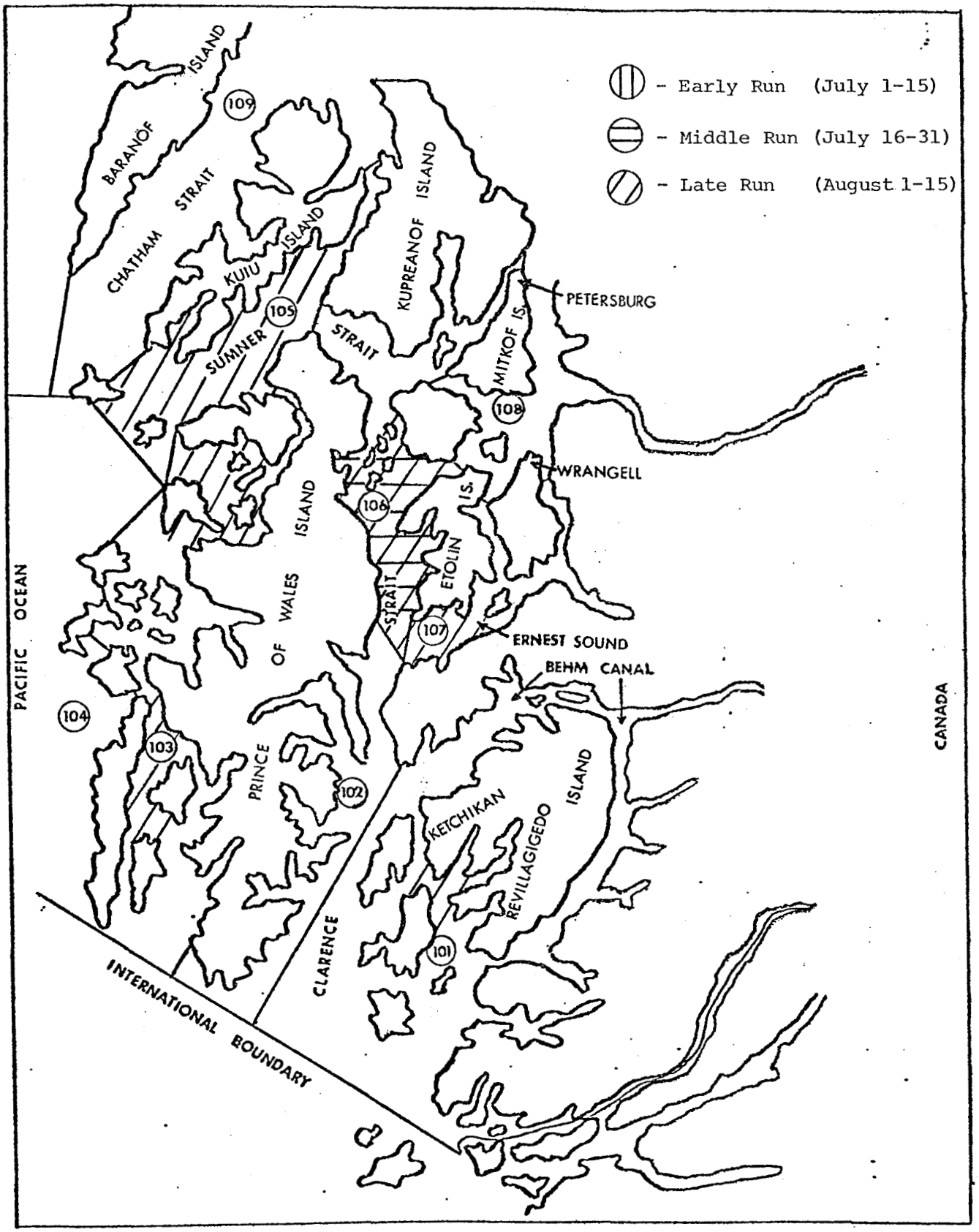

Figure 15. Middle and late run pink salmon spawning areas as determined by time of passage past the Shipley Bay shoreline, southern Southeast Alaska, 1981.

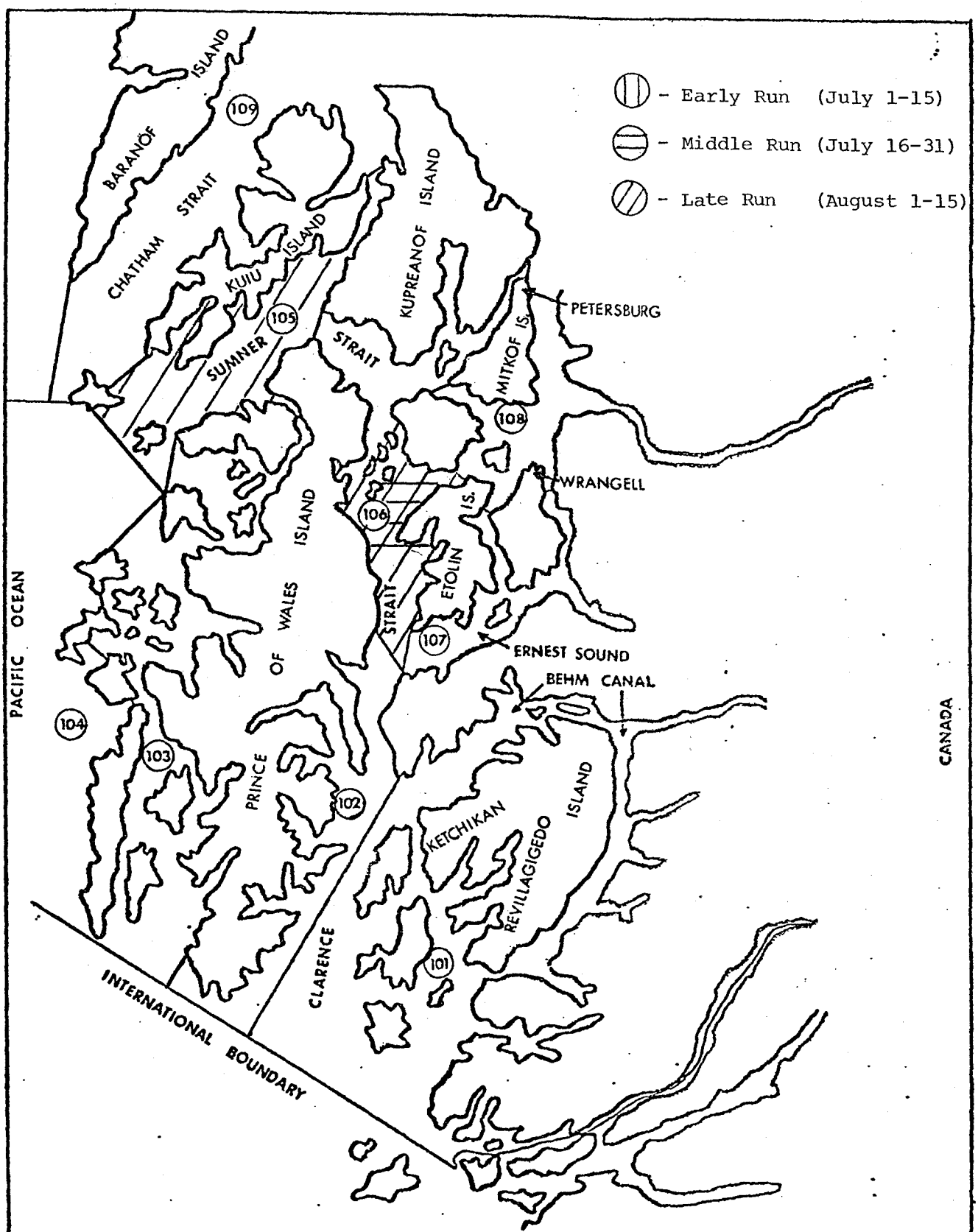

Figure 16. Middle and late run pink salmon spawning areas as determined by time of passage past the Port Beauclerc shoreline, southern Southeast Alaska, 1981.

Union Bay, and Steamer Point shorelines demonstrated the difficulties of implementing sound stock management strategies for the harvest of pink salmon in Clarence Strait due to the heterogeneous mixture of pink salmon stocks noted in this area. This was complicated even further by the fact that pink salmon stocks from two different Southeastern management areas (Petersburg and Ketchikan) were observed to migrate through Clarence Strait.

On the other hand, implementation of sound stock management concept for harvesting pink salmon in Sumner Strait would be less difficult. A fairly homogeneous group of pink salmon prevails within this area, especially during August, when a high percentage of the pink salmon present are local stocks destined for District 105 spawning streams.

Movement of pink salmon thorugh Sumner and Clarence Strait occurred in a time-oriented, progressive manner. Peak migration periods were noted for individual stocks and larger mixed-stock groups. This infers that fishery openings could be adjusted accordingly to peak escapement periods to protect or direct harvest to selected stock groups.

MANAGEMENT IMPLICATIONS

The following specific results of the 1981 Sumner and Clarence Strait tagging investigations are suggested as having important fishery management implications.

1. Pink salmon passing through Sumner and Clarence Strait are almost exclusively southern Southeast Alaska stocks.

2. The majority of District 101 pink salmon return via lower Clarence Strait. A large portion of these fish migrate up Clarence Strait as far north as the confluence of Ernest Sound before returning to their natal streams.

3. The majority of District 102 pink salmon stocks return via lower Clarence Strait, while a portion of these fish migrate as far north as the confluence of Ernest Sound, and then return to their natal streams.

4. A small percentage of District 103 pink salmon stocks appear to travel around either end of Prince of Wales Island or circumnavigate the Island from the north or south before returning to their natal streams. Extensive tagging in District 103 and 104 on the West Coast of Prince of Wales Island is needed to confirm either of these apparent patterns.

5. A portion of the District 103 (Sea Otter Sound, especially) pink salmon stocks migrate north into Sumner Strait as far as Shipley Bay and Port Beauclerc before returning to their spawning streams.

6. The limited number of tag recoveries in District 104 suggest a migration pattern similar to that noted for District 103 stocks. Again, extensive tagging of District 104 stocks will be required to answer this question.

7. District 105 pink salmon stocks return via lower Sumner Strait.

8. District 106 pink salmon stocks return via lower Sumner Strait, migrate around the north end of Prince of Wales Island, and then enter upper Clarence Strait (District 106).

9. A portion of the District 106 stocks travel as far south as the confluence of Ernest Sound before returning to their natal streams. This is especially true for stocks bound for Burnett, Mosman, and McHenry Inlets.

10. District 107 pink salmon stocks exhibited the same migration patterns as noted for District 106 stocks.

11. The lower portion of District 108 pink salmon stocks appear to return via both Sumner and Clarence Strait. Futher tagging is needed to more accurately define this pattern.

12. The most heterogeneous mixture of pink salmon stocks was noted along the Tolstoi Point, Myers Chuck, Union Bay, and Steamer Point shorelines. This suggests that derivation of sound stock management strategies for harvesting pink salmon at these locations would be difficult.

13. The most homogeneous mixture of pink salmon stocks was noted along the Shipley Bay and Port Beauclerc shorelines. This was especially true in August, which suggests that derivation of sound management strategies for harvesting pink salmon is possible for this area.

14. A higher percentage of Anan Creek pink salmon stocks passed by the Myers Chuck, Union Bay, and Steamer Point release sites in early July than the remaining pink salmon systems in upper Ernest Sound.

15. Fishery openings in early July along the Myers Chuck, Union Bay, and Steamer Point shorelines would target on District 106 and 107 pink salmon stocks.

16. Fishery openings in late July along the Tolstoi Point, Myers Chuck, anSteamer Point shorelines would target on District 101, 102, 106, and 107 pink salmon stocks.

17. Fishery openings in August along the Steamer Point shoreline would target on District 106 and 107 pink salmon stocks, while openings in lower Sumner Strait would harvest predominately District 105 stocks.

ACKNOWLEDGEMENTS

This investigation was the first year of a four year research program conducted by ADF&G, Commercial Fisheries Division, for determining migration routes, run timing, and degree of stock intermingling for major pink salmon stocks in southern Southeast Alaska.

I would like to thank Larry Talley for his programming input used during the analysis of the data included within this report. In addition, a special thanks to Gary Gunstrom for his editing work, and Debra Geoffrion for typing this lengthy text and its accompanying figures and tables.

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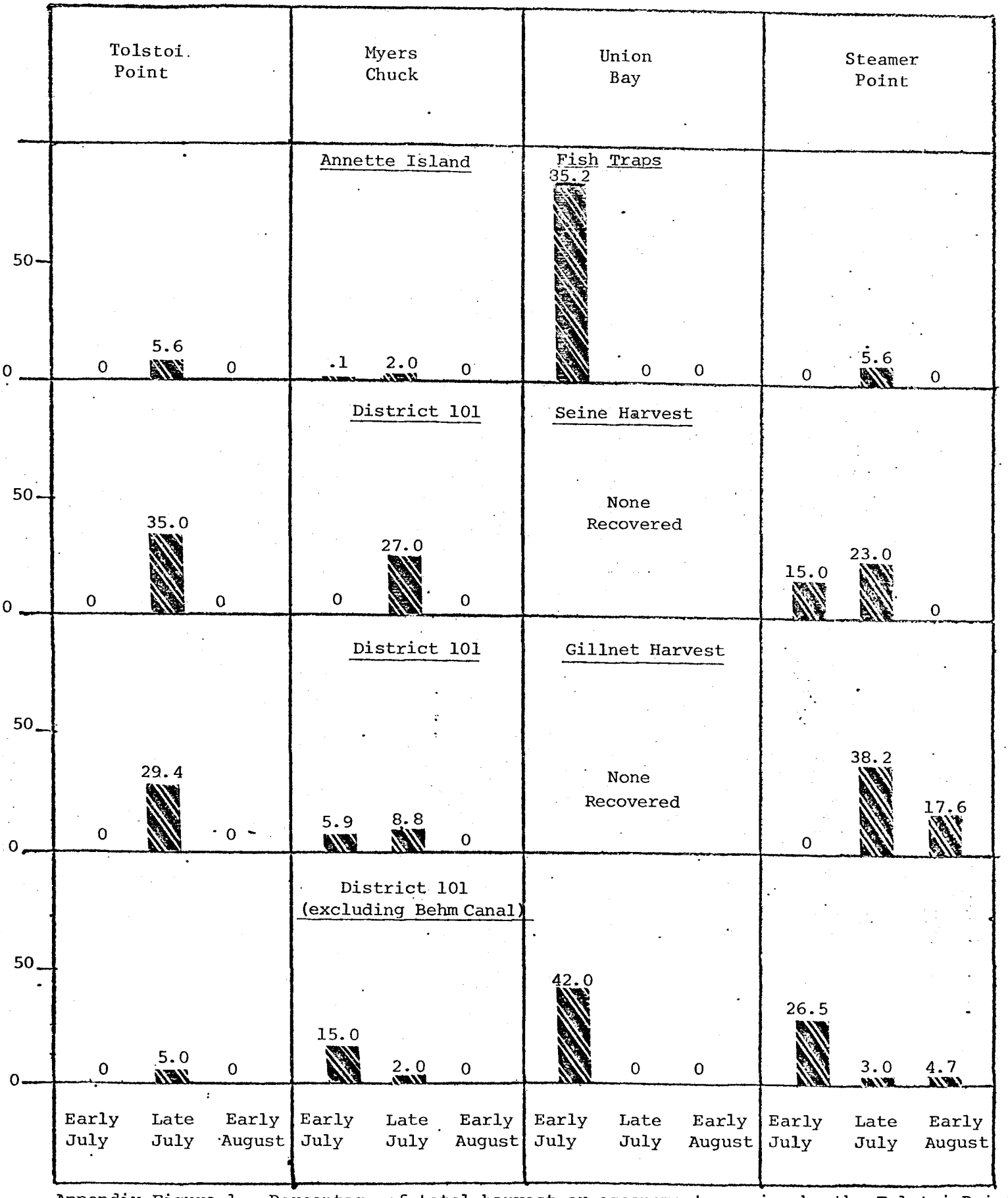
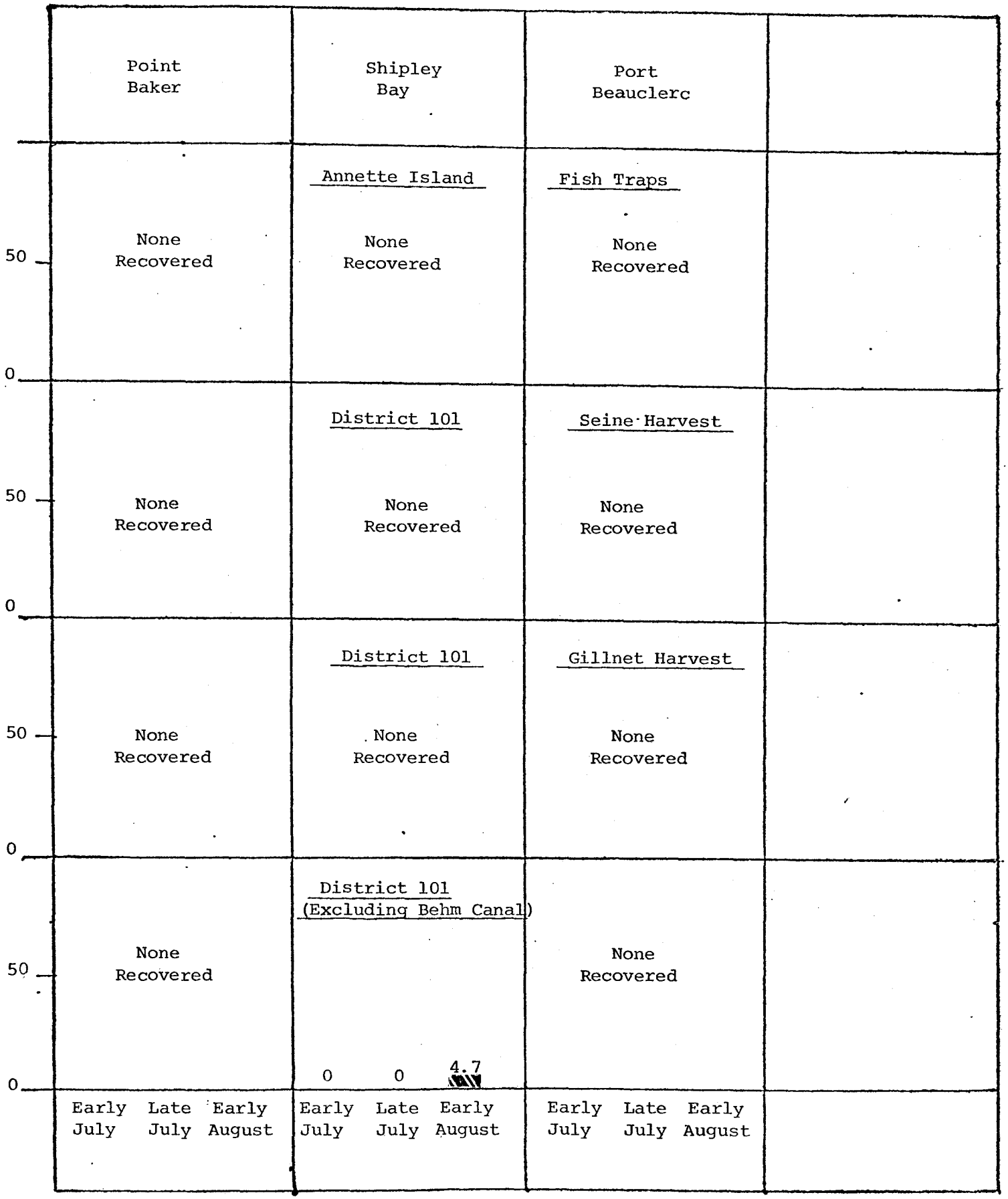
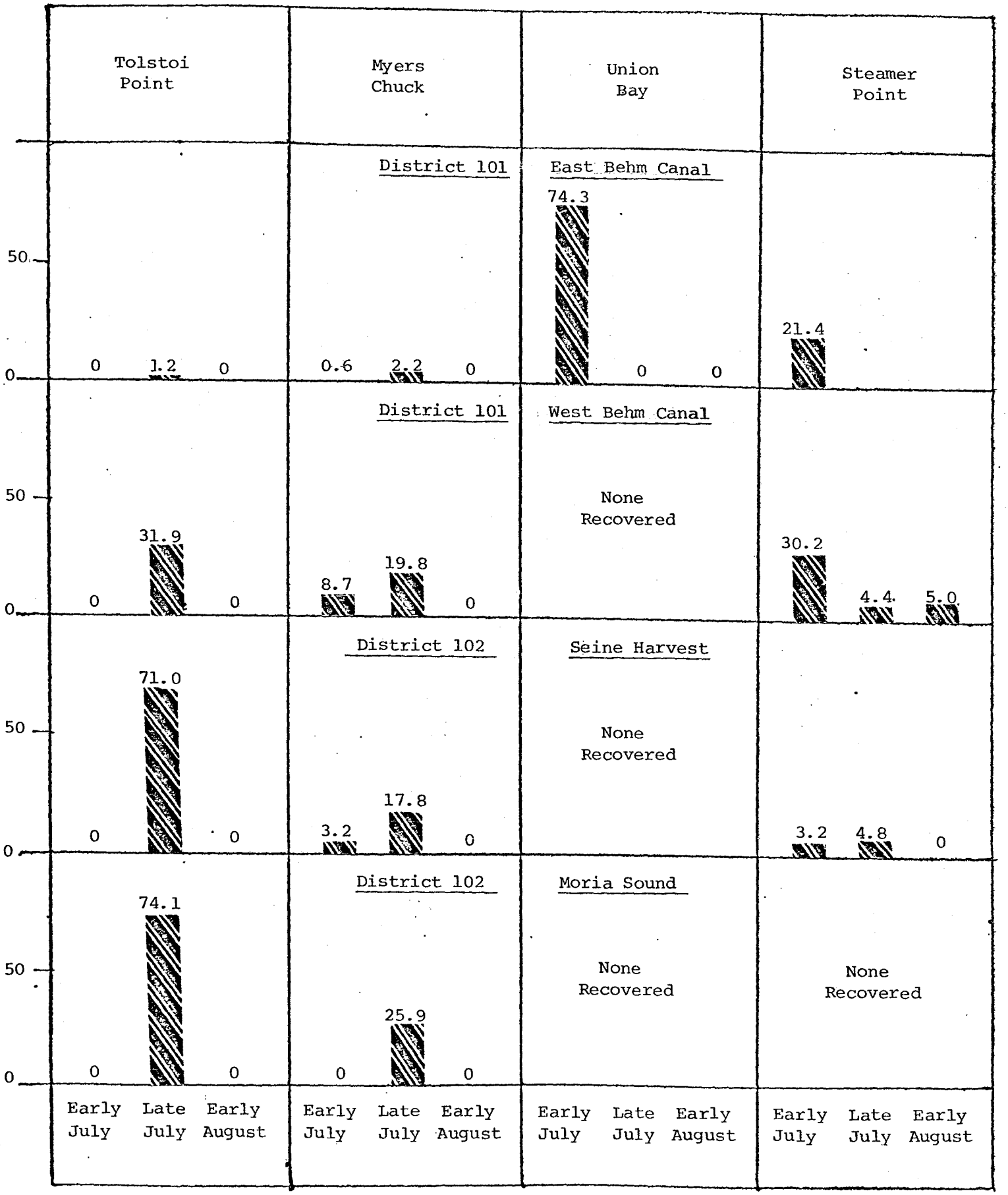
APPENDICES



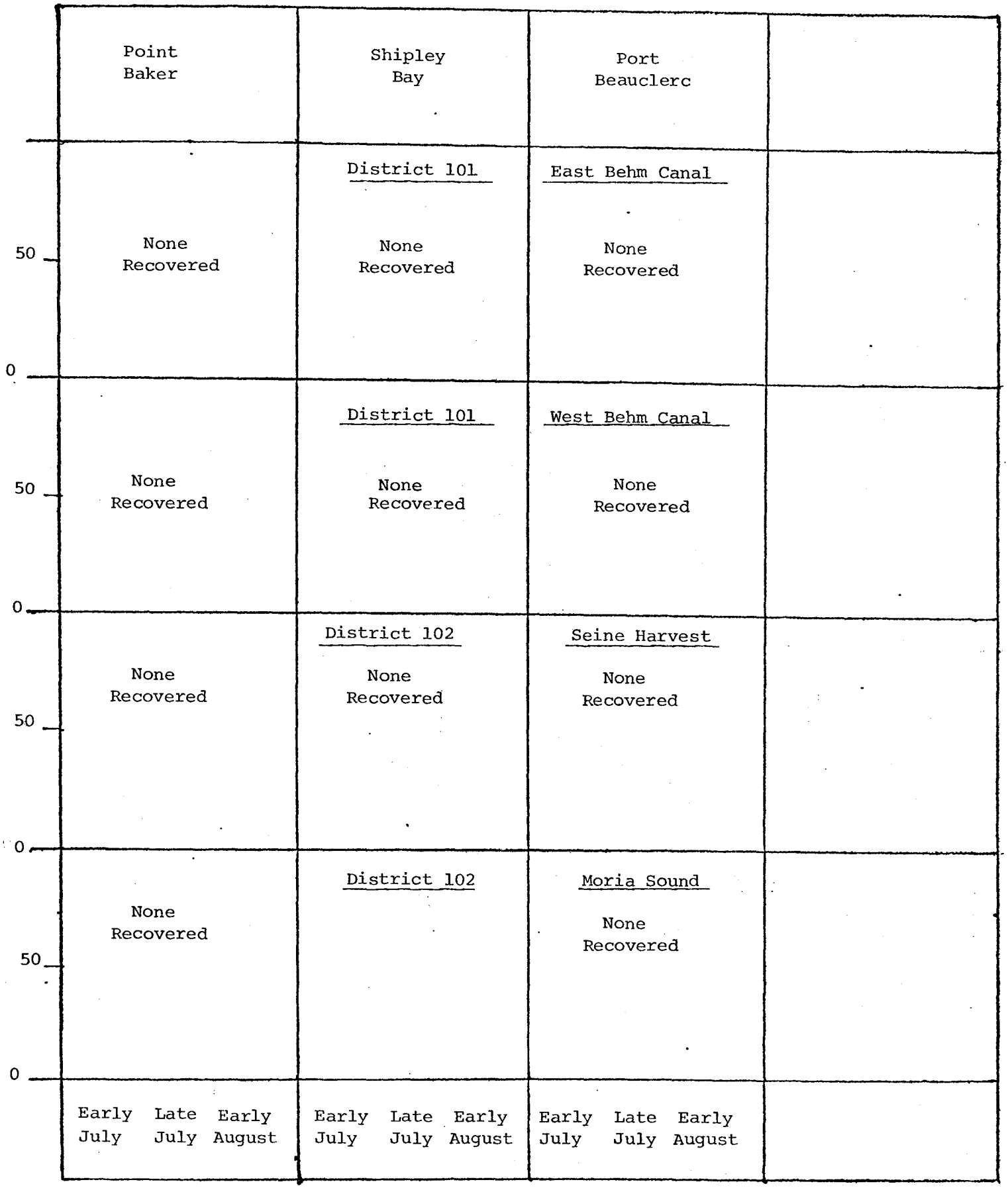
Appendix Figure 1. Percentage of total harvest or escapement passing by the Tolstoi Point, Myers Chuck, Union Bay, Steamer Point, Point Baker, Shipley Bay, and Port Beauclerc shorelines during bi-monthly time periods, southern Southeast Alaska, 1981.



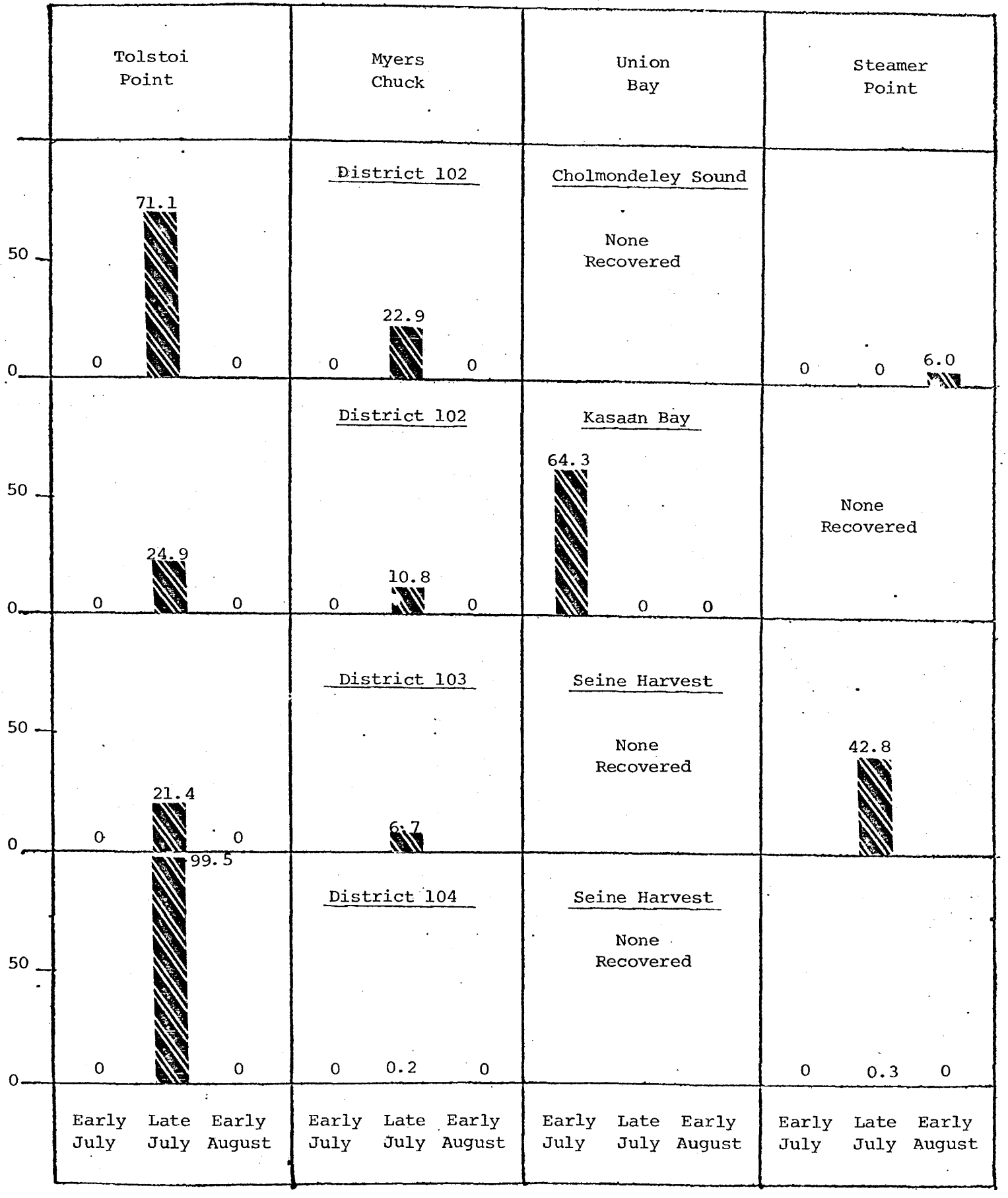
Appendix Figure 1. (continued)



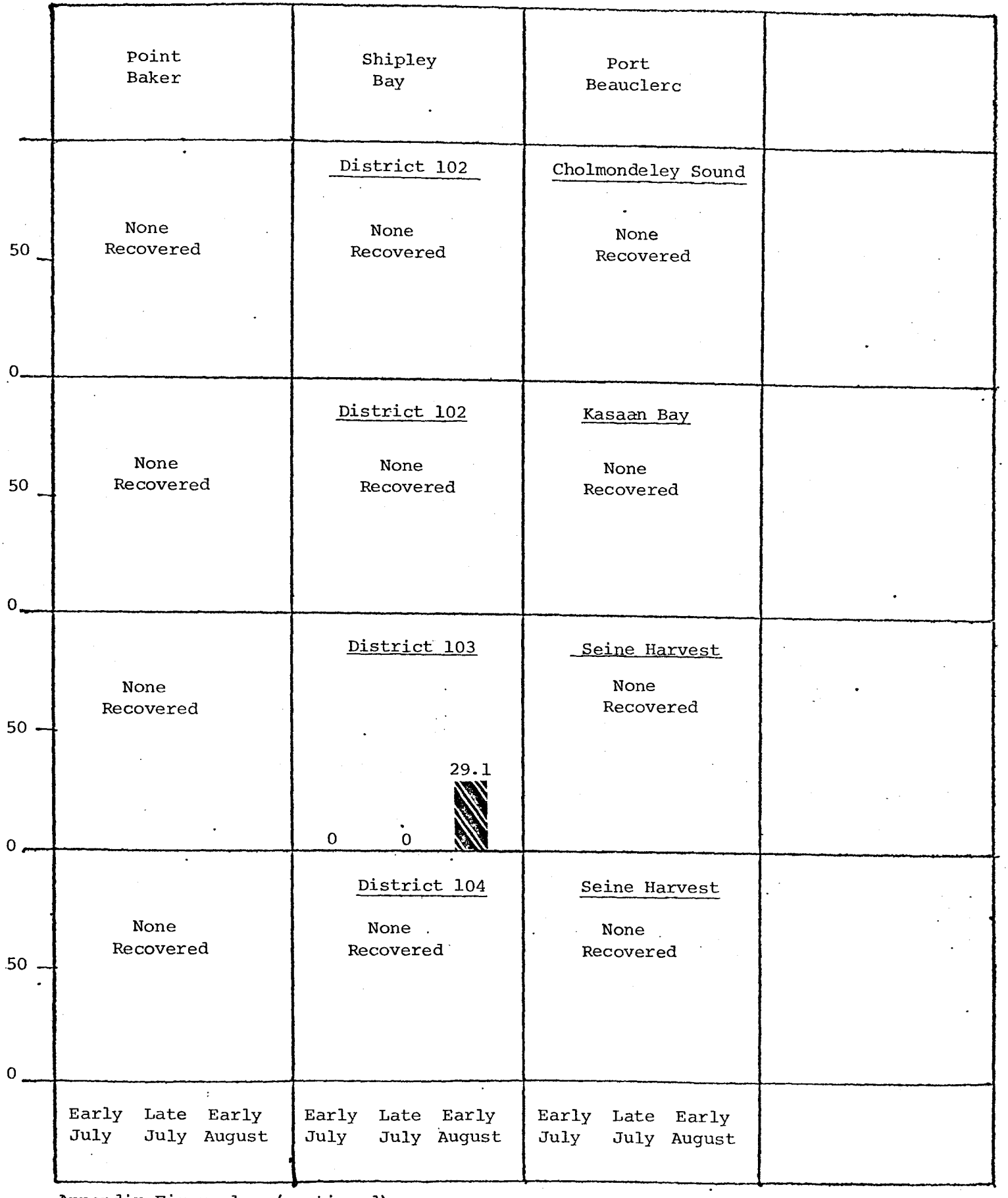
Appendix Figure 1. (continued)



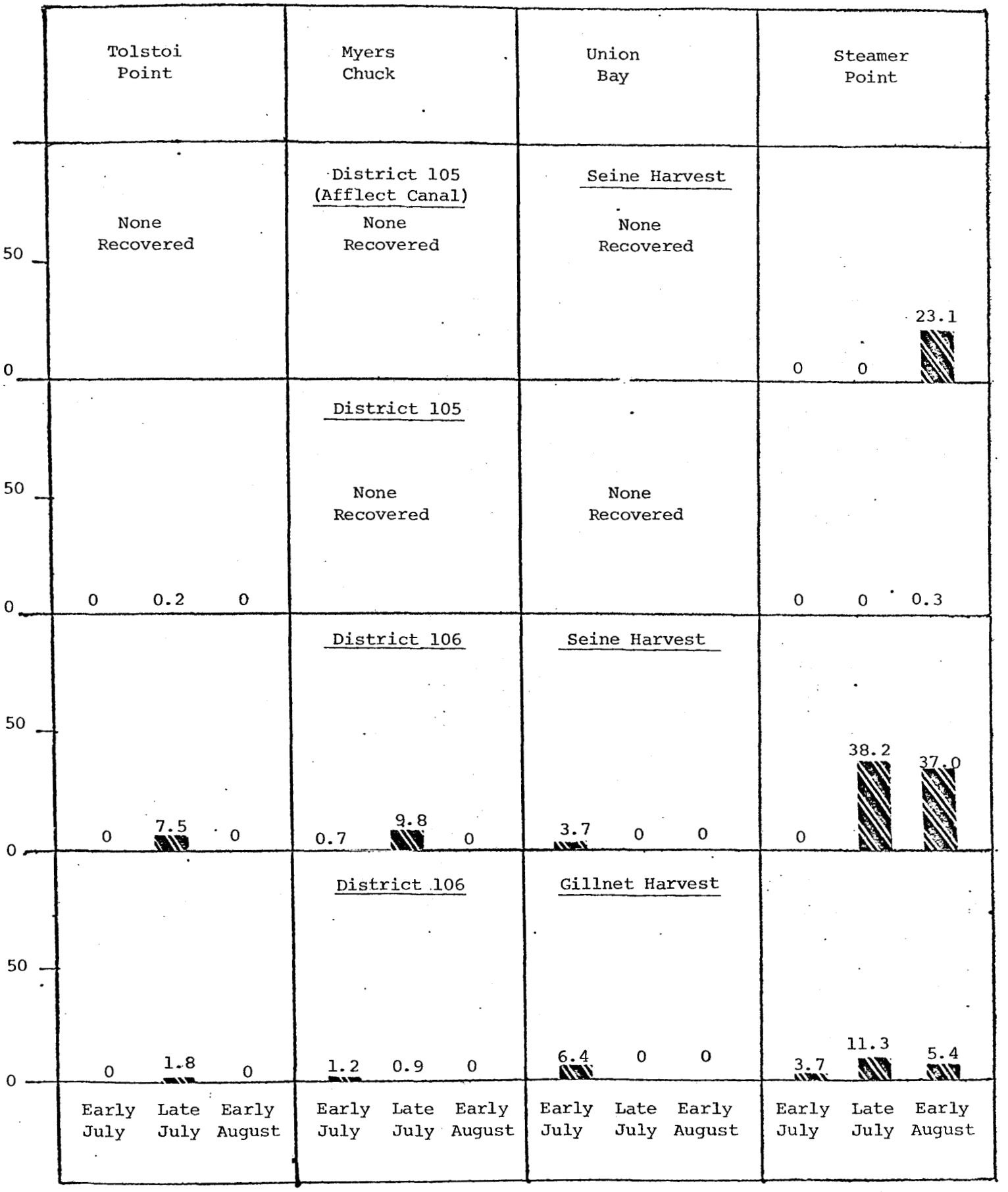
Appendix Figure 1. (continued)



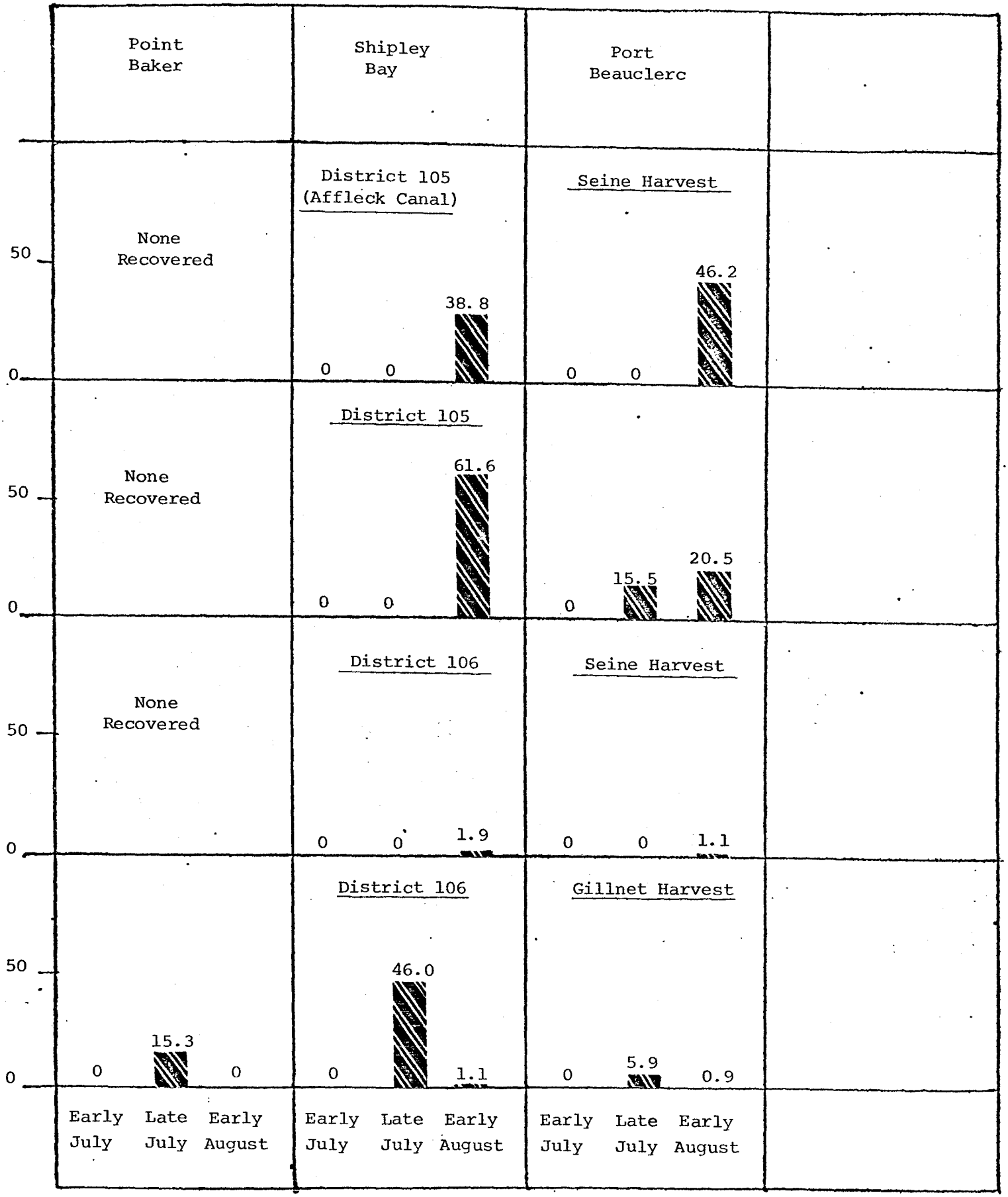
Appendix Figure 1. (continued)



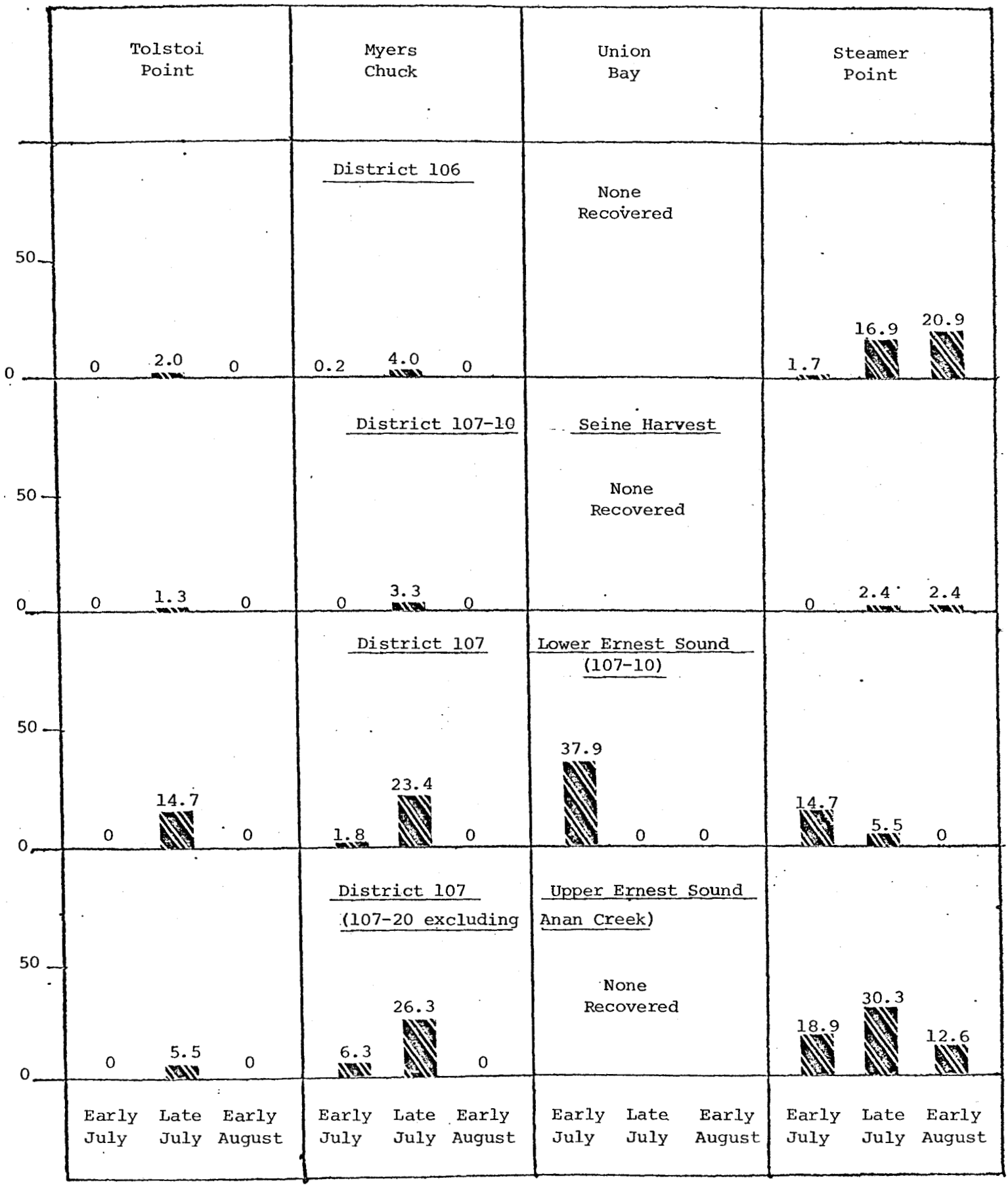
Appendix Figure 1. (continued)



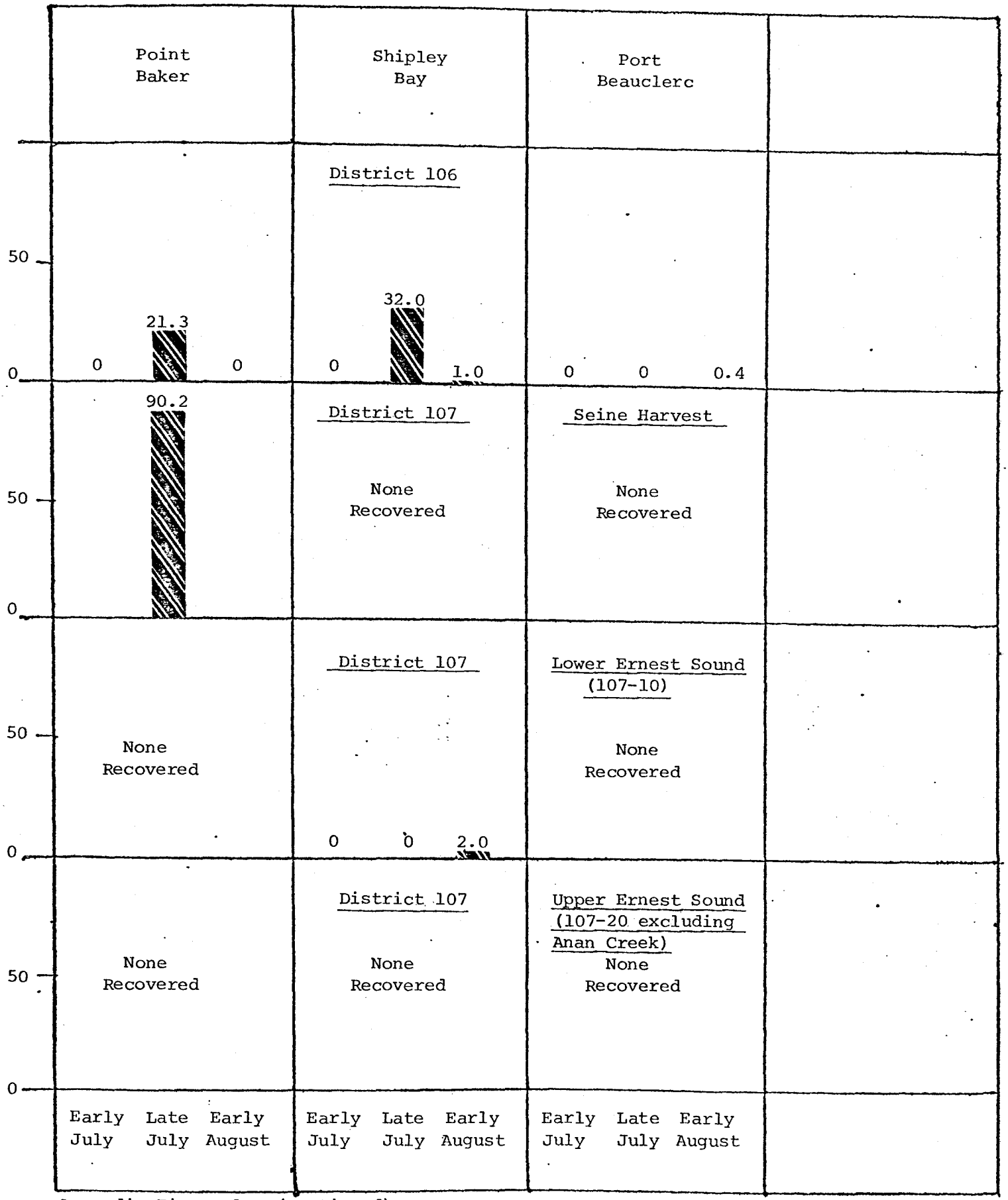
Appendix Figure 1. (continued)



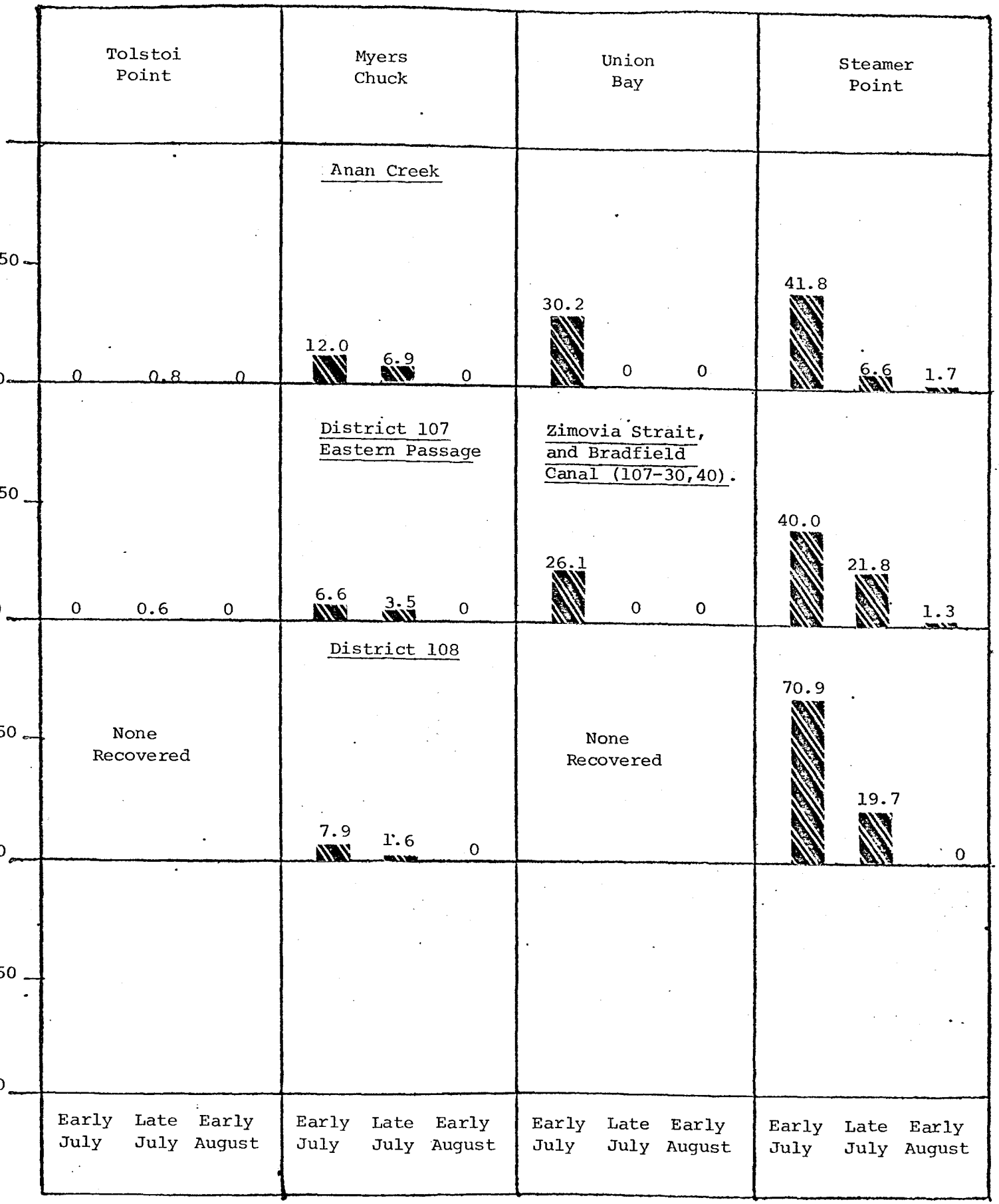
Appendix Figure 1. (continued)



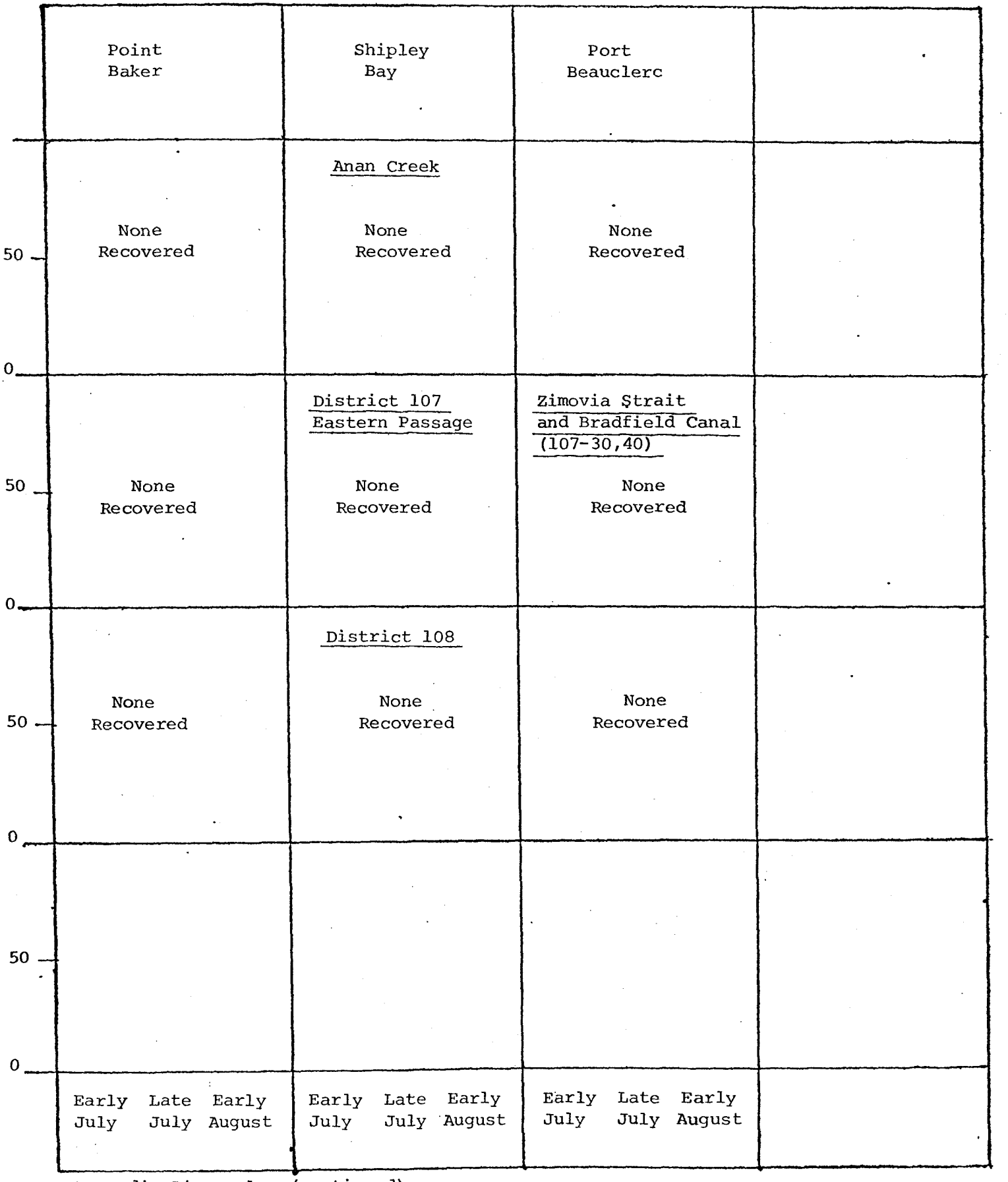
Appendix Figure 1. (continued)



Appendix Figure 1. (continued)



Appendix Figure 1. (continued)



Appendix Figure 1. (continued)

Appendix Table 1. Distribution of tags recovered, southern Southeast Alaska, 1981.

1981 Areas	Tolstoi Point Releases		Myers Chuck Releases		Union Bay Releases		Steamer Point Releases	
	Spawning streams	Ocean waters	Spawning streams	Ocean waters	Spawning streams	Ocean waters	Spawning streams	Ocean waters
District 101	19	34	25	33	5	3	8	16
District 102	61	42	31	17	1	0	1	2
District 103	0	15	0	6	0	0	0	11
District 104	0	3	0	1	0	0	0	1
District 105	1	1	0	0	0	0	1	1
District 106	23	87	59	152	0	4	155	318
District 107	37	4	311	12	15	0	156	5
District 108	0	0	5	0	0	0	2	0
District 109-115 Northern Southeast	0	1	1	3	0	1	0	0
Canadian	0	4	0	0	0	1	1	0

Appendix Table 1. (continued)

1981 Areas	Point Baker Releases		Shipley Bay Releases		Port Beauclerc Releases		Total Recoveries
	Spawning streams	Ocean waters	Spawning streams	Ocean waters	Spawning streams	Ocean waters	
District 101	0	0	0	0	0	0	145
District 102	0	0	0	0	0	0	155
District 103	0	0	0	6	0	0	38
District 104	0	0	0	0	0	0	5
District 105	0	0	206	11	82	2	305
District 106	1	1	3	12	1	9	825
District 107	1	1	1	0	0	0	543
District 108	0	0	0	0	0	0	7
District 109-115 Northern Southeast	0	0	0	0	0	0	6
Canadian	0	0	0	0	0	0	6
Total							2,035

Appendix Table 2. Spawning stream tag recovery efforts, southern Southeast Alaska, 1981.

Stream	Number of Surveys	Survey Dates	Peak Escapement Observed	Number of Tags Recovered	Number of Tags Observed
101-30-83	1	30 August	80,000	0	0
101-47-15	1	2 September	634	1	0
101-47-25	1	17 August	1,471	0	5
101-55-20	1	31 August	22,750	0	0
101-55-50	1	31 August	6,434	0	0
101-71-08	1	31 August	6,055	0	0
101-71-14	1	31 August	2,950	1	0
101-71-16	1	31 August	505	0	0
101-71-63	1	31 August	2,000	1	1
101-75-15	1	28 August	15,655	4	3
101-75-50	1	14 August	Not Recorded	2	0
101-75-76	1	28 August	1,020	0	0
101-75-80	1	28 August	599	1	0
101-80-30	1	27 August	3,700	2	3
101-80-40	1	25 August	13	0	0
101-80-52	1	25 August	3,458	4	1
101-80-84	1	27 August	9,149	2	0
101-90-29	2	23 August	3,370	0	2
		13 October	Not Recorded	1	0
101-90-39	1	23 August	3,424	0	0
101-90-50	1	19 August	3,904	0	5
101-90-60	1	19 August	0	0	0
101-90-61	1	19 August	2	0	0
101-90-62	1	19 August	2,280	1	2
101-90-71	1	19 August	61	0	0
101-90-72	1	19 August	0	0	0
101-90-80	2	19 August	4,984	7	3
		14 September	4,053	0	0
101-90-84	2	13 September	348	0	0
		14 September	300	0	0
101-90-86	1	24 August	1,669	0	5
102-30-17	1	19 September	6,653	0	0
102-30-28	1	28 August	2,027	0	0
102-30-37	2	28 August	2,138	0	0
		19 September	2,890	0	0
102-30-51	2	28 August	9,204	1	0
		19 September	27,003	0	0
102-30-67	1	27 August	7,759	1	1
102-30-87	2	28 August	15,500	4	1
		19 August	17,000	1	0
102-30-89	1	19 September	700	0	0
102-40-43	2	26 August	358	0	0
		19 September	Not Recorded	1	0

Appendix Table 2. (continued)

Stream	Number of Surveys	Survey Dates	Peak Escapement Observed	Number of Tags Recovered	Number of Tags Observed
102-40-52	1	26 August	1,405	3	0
102-40-60	2	26 August	8,815	24	5
		17 September	Not Recorded	3	1
102-40-71	2	27 August	15,303	8	0
		18 September	12,000	0	0
102-40-73	2	27 August	492	2	0
		18 September	3,241	1	0
102-40-87	2	27 August	32,741	8	4
		17 September	26,500	1	0
102-50-21	1	26 August	1,222	4	2
102-60-24	2	25 August	2,747	2	0
		16 September	3,327	0	0
102-60-72	1	25 August	4,300	4	5
102-60-82	1	16 September	None	0	0
102-60-84	1	24 August	4,202	1	0
102-60-87	3	24 August	1	0	0
		25 August	Not Recorded	0	2
		15 September	None	0	1
103-80-26	1	6 September	18	0	0
103-80-35	1	6 September	559	0	0
103-80-46	1	6 September	None	0	0
103-80-50	1	6 September	None	0	0
103-90-04	1	3 September	4,890	0	0
103-90-10	1	5 September	15,000	0	0
103-90-26	1	5 September	20,300	0	0
103-90-25	1	5 September	14,361	0	0
103-90-27	1	5 September	21,317	0	0
103-90-30	1	5 September	3,275	0	0
103-90-42	1	6 September	116	0	0
103-90-58	1	4 September	33	0	0
103-90-59	1	4 September	3	0	0
103-90-61	1	4 September	484	0	0
103-90-63	1	4 September	6,650	0	0
103-90-69	1	4 September	46,400	0	1
103-90-72	1	4 September	29,000	0	0
103-90-80	1	3 September	8,110	0	0
103-90-81	1	3 September	7,493	0	0
104		None	Not Recorded	0	0
105-10-19	3	30 July	200	0	0
		12 August	5,675	0	0
		16 September	6,660	0	0
105-10-21	3	30 July	102	0	0
		12 August	2,255	0	0
		16 September	8,780	2	0

Appendix Table 2. (continued)

Stream	Number of Surveys	Survey Dates	Peak Escapement Observed	Number of Tags Recovered	Number of Tags Observed
105-10-24	4	30 July	7,550	0	0
		12 August	17,383	0	0
		13 August	8,383	0	1
		16 September	5,460	7	1
105-10-32	2	13 August	7,500	0	0
		16 September	15,720	2	0
105-10-28	1	16 September	1,469	0	0
105-20-02	1	17 September	1,210	27	0
105-20-04	2	11 August	113	0	0
		17 September	277	6	0
105-20-06	1	11 August	50	0	1
105-20-07	1	11 August	54	0	0
105-20-08	2	11 August	426	0	1
		4 September	1,195	17	2
105-20-10	2	11 August	232	1	0
		4 September	2,144	13	0
105-20-12	2	11 August	154	0	0
		4 September	1,247	9	0
105-41-05	2	11 August	3,778	0	0
		1 September	4,055	5	1
105-42-05	2	12 August	18,753	2	2
		2 September	65,654	12	3
105-42-08	1	1 September	238	0	0
105-42-09	2	12 August	7,675	1	0
		2 September	23,545	5	0
105-42-10	2	12 August	4,190	0	0
		2 September	7,100	1	0
105-42-11	1	12 August	555	0	0
105-42-12	1	1 September	10,166	0	0
105-42-14	1	1 September	711	2	0
105-43-01	1	3 September	8	0	0
105-43-02	2	12 August	303	2	0
		3 September	7,046	42	8
105-43-05	1	12 August	3	0	0
105-43-06	2	12 August	6,328	19	0
		3 September	18,022	91	10
105-50-01	2	12 August	3,563	4	8
		3 September	19,080	21	5
106-10-04	2	3 September	3	0	0
		21 September	1,250	0	0
106-10-06	2	3 September	None	0	0
		21 September	1,900	1	0

Appendix Table 2. (continued)

Stream	Number of Surveys	Survey Dates	Peak Escapement Observed	Number of Tags Recovered	Number of Tags Observed
106-10-10	1	3 September	7,860	20	5
106-10-11	1	21 September	1,900	0	0
106-10-30	2	3 September	19,351	2	5
		22 September	29,170	2	2
106-20-23	1	21 September	4,032	1	2
106-20-34	1	21 September	180	0	0
106-21-03	3	6 August	451	0	0
		27 August	2,007	2	1
		20 September	1,520	0	0
106-21-04	3	6 August	4,000	7	10
		27 August	12,405	17	7
		20 September	6,660	1	1
106-21-05	3	6 August	1,080	6	0
		27 August	15,964	21	5
		20 September	3,600	0	0
106-22-04	3	6 August	637	6	2
		26 August	1,746	8	0
		20 September	1,493	0	0
106-22-06	3	6 August	682	2	3
		26 Augsut	2,228	1	2
		20 September	4,820	6	0
106-22-08	3	6 August	1,348	0	8
		26 August	6,470	3	0
		20 September	8,932	1	0
106-22-10	3	6 August	29	0	0
		26 August	Not Recorded	1	1
		20 September	337	0	0
106-22-14	2	6 August	0	0	0
		20 September	96	0	0
106-22-14B	1	20 September	90	0	0
106-22-14D	1	20 September	49	0	0
106-22-16	3	6 August	8,800	5	5
		26 August	18,730	27	3
		20 September	5,890	3	3
106-30-10	1	5 September	3,509	59	7
106-30-12	2	4 September	195	1	0
		22 September	516	0	0
106-30-15	1	22 September	690	1	0
106-30-72	2	4 September	924	0	0
		22 September	1,445	0	0
106-30-74	1	22 September	0	0	0
106-30-75	2	4 September	500	0	0
		22 September	193	0	0
106-30-77	2	4 September	97	0	0
		23 September	425	0	0

Appendix Table 2. (continued)

Stream	Number of Surveys	Survey Dates	Peak Escapement Observed	Number of Tags Recovered	Number of Tags Observed
106-30-80	2	4 September	12,423	2	5
		23 September	12,660	1	0
106-30-82	1	5 September	224	1	0
		22 September	590	1	0
106-30-85	1	4 September	2,553	5	0
107-10-10	1	25 August	8,118	21	2
107-10-20	1	19 September	2,510	1	0
107-10-24	2	25 August	664	1	0
		19 September	84	0	0
107-10-25	1	19 September	1,270	0	0
107-10-30	2	5 August	153	0	0
		25 August	26,910	46	0
107-10-70	1	24 August	30,487	19	20
107-10-71	1	24 August	3,020	4	1
107-20-01	6	22 July	6,600	15	55
		30 July	79,100	32	18
		4 August	42,013	15	0
		20 August	71,630	30	4
		23 August	22,040	32	8
		25 August	18,500	6	4
107-20-05	1	4 August	109	0	0
107-20-15	1	19 September	803	0	0
107-20-20	2	5 August	3	0	0
		24 August	4,884	16	0
107-20-23	2	5 August	44	0	0
		24 August	5,642	6	2
107-20-30	2	5 August	3	0	0
		24 August	11,379	20	0
107-20-70	4	24 July	20	0	0
		30 July	2,510	3	5
		4 August	230	0	0
		23 August	4,120	15	2
107-30-30	3	22 July	600	0	0
		30 July	27	0	0
		19 August	3,423	20	4
107-30-70	3	24 July	5,320	0	12
		29 July	19,430	6	24
		19 August	19,100	90	0
107-30-76	1	18 August	450	3	0
107-30-78	1	18 August	955	3	0
107-30-80	1	18 August	1,915	12	0
107-40-38	3	31 July	8,170	7	28
		4 August	2,030	0	0
		22 August	3,500	2	3
107-40-40	1	22 August	5,503	20	11

Appendix Table 2. (continued)

Stream	Number of Surveys	Survey Dates	Peak Escapement Observed	Number of Tags Recovered	Observed
107-40-45	1	4 August	1,551	7	0
107-40-47	1	20 August	2,495	12	0
107-40-49	2	14 August	Not Recorded	2	2
		20 August	1,116	4	0
107-40-55	1	20 August	233	5	0
108-20-01	1	18 September	70	0	0
108-40-20	2	19 September	8,337	5	4
		1 September	2,338	2	0
108-60-06	1	7 August	1,028	0	0
109-30-03	1	28 July	1,533	0	0
109-62-20	1	28 July	100	0	0
110-13-04	1	31 July	2,960	2	0
110-32-09	1	24 July	5,903	0	0
110-33-10	1	24 July	6,550	0	0
110-34-06	1	23 July	13,803	0	0
110-34-08	1	23 July	7,400	0	0
110-34-14	1	24 July	600	0	0

Appendix Table 3. Spawning stream recoveries of pink salmon released in southern Southeast Alaska, 1981.

Stream Number	Tolstoi Point				Myers Chuck				Union Bay			
	Early July	Late July	Early August	Total	Early July	Late July	Early August	Total	Early July	Late July	Early August	Total
101-30-75	-	-	-	-	-	-	-	-	-	-	-	-
101-30-83	-	-	-	-	-	-	-	-	-	-	-	-
101-45-73	-	-	-	-	-	1	-	1	-	-	-	-
101-45-78	-	-	-	-	-	-	-	-	-	-	-	-
101-47-15	-	2	-	2	-	1	-	1	-	-	-	-
101-47-25	-	-	-	-	-	-	-	-	-	-	-	-
101-55-20	-	-	-	-	-	-	-	-	-	-	-	-
101-55-40	-	-	-	-	-	-	-	-	-	-	-	-
101-71-08	-	-	-	-	-	-	-	-	-	-	-	-
101-71-14	-	1	-	1	-	-	-	-	-	-	-	-
101-71-16	-	-	-	-	-	-	-	-	-	-	-	-
101-71-63	-	-	-	-	-	1	-	1	-	-	-	-
101-75-05	-	-	-	-	-	-	-	-	1	-	-	1
101-75-15	-	1	-	1	3	-	-	3	2	-	-	2
101-75-50	-	-	-	-	-	-	-	-	1	-	-	1
101-75-76	-	-	-	-	-	-	-	-	-	-	-	-
101-75-80	-	-	-	-	-	1	-	1	-	-	-	-
101-80-05	-	1	-	1	-	1	-	1	-	-	-	-
101-80-40	-	-	-	-	-	-	-	-	-	-	-	-
101-80-52	-	2	-	2	1	1	-	2	-	-	-	-
101-80-68 (weir)	-	3	-	3	4	5	-	9	-	-	-	-
101-80-84	-	1	-	1	-	1	-	1	-	-	-	-
101-90-29	-	-	-	-	-	1	-	1	-	-	-	-
101-90-39	-	-	-	-	-	-	-	-	-	-	-	-
101-90-50	-	-	-	-	-	-	-	-	-	-	-	-
101-90-60	-	-	-	-	-	-	-	-	-	-	-	-

Appendix Table 3. (continued)

Stream Number	Tolstoi Point				Myers Chuck				Union Bay			
	Early July	Late July	Early August	Total	Early July	Late July	Early August	Total	Early July	Late July	Early August	Total
101-90-61	-	-	-	-	-	-	-	-	-	-	-	-
101-90-62	-	1	-	1	-	-	-	-	-	-	-	-
101-90-68	-	2	-	2	-	2	-	2	-	-	-	-
101-90-71	-	-	-	-	-	-	-	-	-	-	-	-
101-90-72	-	-	-	-	-	-	-	-	-	-	-	-
101-90-80	-	5	-	5	-	2	-	2	1	-	-	1
101-90-84	-	-	-	-	-	-	-	-	-	-	-	-
101-90-86	-	-	-	-	-	-	-	-	-	-	-	-
102-30-17	-	-	-	-	-	-	-	-	-	-	-	-
102-30-28	-	-	-	-	-	-	-	-	-	-	-	-
102-30-37	-	-	-	-	-	-	-	-	-	-	-	-
102-30-51	-	1	-	1	-	-	-	-	-	-	-	-
102-30-67	-	1	-	1	-	-	-	-	-	-	-	-
102-30-87	-	3	-	3	-	2	-	2	-	-	-	-
102-30-89	-	-	-	-	-	-	-	-	-	-	-	-
102-40-43	-	1	-	1	-	-	-	-	-	-	-	-
102-40-52	-	2	-	2	-	-	-	-	-	-	-	-
102-40-60	-	17	-	17	-	10	-	10	-	-	-	-
102-40-71	-	5	-	5	-	3	-	3	-	-	-	-
102-40-73	-	2	-	2	-	1	-	1	-	-	-	-
102-40-87	-	6	-	6	-	3	-	3	-	-	-	-
102-50-21	-	3	-	3	-	1	-	1	-	-	-	-
102-60-24	-	-	-	-	-	2	-	2	-	-	-	-
102-60-38	-	-	-	-	-	1	-	1	-	-	-	-
102-60-42	-	-	-	-	-	1	-	1	-	-	-	-
102-60-72	-	2	-	2	-	3	-	3	1	-	-	1
102-60-82	-	4	-	4	-	-	-	-	-	-	-	-

Appendix Table 3. (continued)

Stream Number	Tolstoi Point				Myers Chuck				Union Bay			
	Early July	Late July	Early August	Total	Early July	Late July	Early August	Total	Early July	Late July	Early August	Total
102-60-84	-	5	-	5	-	-	-	-	-	-	-	-
102-60-87	-	-	-	-	-	-	-	-	-	-	-	-
102-70-58	-	2	-	2	-	-	-	-	-	-	-	-
102-80-13	-	7	-	7	-	4	-	4	-	-	-	-
103-80-26	-	-	-	-	-	-	-	-	-	-	-	-
103-80-35	-	-	-	-	-	-	-	-	-	-	-	-
103-80-46	-	-	-	-	-	-	-	-	-	-	-	-
103-80-50	-	-	-	-	-	-	-	-	-	-	-	-
103-90-04	-	-	-	-	-	-	-	-	-	-	-	-
103-90-10	-	-	-	-	-	-	-	-	-	-	-	-
103-90-25	-	-	-	-	-	-	-	-	-	-	-	-
103-90-26	-	-	-	-	-	-	-	-	-	-	-	-
103-90-27	-	-	-	-	-	-	-	-	-	-	-	-
103-90-30	-	-	-	-	-	-	-	-	-	-	-	-
103-90-42	-	-	-	-	-	-	-	-	-	-	-	-
103-90-58	-	-	-	-	-	-	-	-	-	-	-	-
103-90-59	-	-	-	-	-	-	-	-	-	-	-	-
103-90-61	-	-	-	-	-	-	-	-	-	-	-	-
103-90-63	-	-	-	-	-	-	-	-	-	-	-	-
103-90-69	-	-	-	-	-	-	-	-	-	-	-	-
103-90-72	-	-	-	-	-	-	-	-	-	-	-	-
103-90-80	-	-	-	-	-	-	-	-	-	-	-	-
103-90-81	-	-	-	-	-	-	-	-	-	-	-	-
104-none	-	-	-	-	-	-	-	-	-	-	-	-
105-10-19	-	-	-	-	-	-	-	-	-	-	-	-

Appendix Table 3. (continued)

Stream Number	Tolstoi Point				Myers Chuck				Union Bay			
	Early July	Late July	Early August	Total	Early July	Late July	Early August	Total	Early July	Late July	Early August	Total
105-10-21	-	-	-	-	-	-	-	-	-	-	-	-
105-10-24	-	-	-	-	-	-	-	-	-	-	-	-
105-10-28	-	-	-	-	-	-	-	-	-	-	-	-
105-10-32	-	-	-	-	-	-	-	-	-	-	-	-
105-20-02	-	-	-	-	-	-	-	-	-	-	-	-
105-20-04	-	-	-	-	-	-	-	-	-	-	-	-
105-20-06	-	-	-	-	-	-	-	-	-	-	-	-
105-20-07	-	-	-	-	-	-	-	-	-	-	-	-
105-20-08	-	-	-	-	-	-	-	-	-	-	-	-
105-20-10	-	-	-	-	-	-	-	-	-	-	-	-
105-20-12	-	-	-	-	-	-	-	-	-	-	-	-
105-41-05	-	-	-	-	-	-	-	-	-	-	-	-
105-42-05	-	1	-	1	-	-	-	-	-	-	-	-
105-42-08	-	-	-	-	-	-	-	-	-	-	-	-
105-42-09	-	-	-	-	-	-	-	-	-	-	-	-
105-42-10	-	-	-	-	-	-	-	-	-	-	-	-
105-42-11	-	-	-	-	-	-	-	-	-	-	-	-
105-42-12	-	-	-	-	-	-	-	-	-	-	-	-
105-42-14	-	-	-	-	-	-	-	-	-	-	-	-
105-43-02	-	-	-	-	-	-	-	-	-	-	-	-
105-43-05	-	-	-	-	-	-	-	-	-	-	-	-
105-43-06	-	-	-	-	-	-	-	-	-	-	-	-
105-50-01	-	-	-	-	-	-	-	-	-	-	-	-
106-10-04	-	-	-	-	-	-	-	-	-	-	-	-
106-10-06	-	1	-	1	-	-	-	-	-	-	-	-
106-10-10	-	5	-	5	-	7	-	7	-	-	-	-

Appendix Table 3. (continued)

Stream Number	Tolstoi Point				Myers Chuck				Union Bay			
	Early July	Late July	Early August	Total	Early July	Late July	Early August	Total	Early July	Late July	Early August	Total
106-10-11	-	-	-	-	-	-	-	-	-	-	-	-
106-10-30	-	-	-	-	-	-	-	-	-	-	-	-
106-20-23	-	1	-	1	-	-	-	-	-	-	-	-
106-20-34	-	-	-	-	-	-	-	-	-	-	-	-
106-21-03	-	-	-	-	-	1	-	1	-	-	-	-
106-21-04	-	-	-	-	-	10	-	10	-	-	-	-
106-21-05	-	3	-	3	-	8	-	8	-	-	-	-
106-22-04	-	2	-	2	-	5	-	5	-	-	-	-
106-22-06	-	2	-	2	-	3	-	3	-	-	-	-
106-22-08	-	1	-	1	1	1	-	2	-	-	-	-
106-22-10	-	-	-	-	1	-	-	1	-	-	-	-
106-22-14	-	-	-	-	-	-	-	-	-	-	-	-
106-22-14B	-	-	-	-	-	-	-	-	-	-	-	-
106-22-14D	-	-	-	-	-	-	-	-	-	-	-	-
106-22-16	-	6	-	6	-	12	-	12	-	-	-	-
106-30-10	-	2	-	2	-	1	-	1	-	-	-	-
106-30-12	-	-	-	-	-	1	-	1	-	-	-	-
106-30-15	-	-	-	-	-	1	-	1	-	-	-	-
106-30-72	-	-	-	-	-	-	-	-	-	-	-	-
106-30-75	-	-	-	-	-	-	-	-	-	-	-	-
106-30-77	-	-	-	-	-	-	-	-	-	-	-	-
106-30-80	-	-	-	-	-	2	-	2	-	-	-	-
106-30-82	-	-	-	-	-	-	-	-	-	-	-	-
106-30-85	-	-	-	-	-	4	-	4	-	-	-	-
107-10-10	-	7	-	7	-	10	-	10	-	-	-	-
107-10-20	-	-	-	-	-	1	-	1	-	-	-	-

Appendix Table 3. (continued)

Stream Number	Tolstoi Point				Myers Chuck				Union Bay			
	Early July	Late July	Early August	Total	Early July	Late July	Early August	Total	Early July	Late July	Early August	Total
107-10-24	-	-	-	-	-	1	-	1	-	-	-	-
107-10-25	-	-	-	-	-	-	-	-	-	-	-	-
107-10-30	-	8	-	8	2	28	-	30	2	-	-	2
107-10-70	-	7	-	7	-	9	-	9	-	-	-	-
107-10-71	-	-	-	-	1	3	-	4	-	-	-	-
107-20-01	-	4	-	4	62	50	-	112	5	-	-	5
107-20-05	-	-	-	-	-	-	-	-	-	-	-	-
107-20-15	-	-	-	-	-	-	-	-	-	-	-	-
107-20-20	-	3	-	3	2	9	-	11	-	-	-	-
107-20-23	-	1	-	1	1	2	-	3	-	-	-	-
107-20-30	-	1	-	1	2	9	-	11	-	-	-	-
107-20-70	-	-	-	-	-	14	-	14	-	-	-	-
107-30-30	-	-	-	-	4	10	-	14	1	-	-	1
107-30-70	-	2	-	2	22	16	-	38	-	-	-	-
107-30-76	-	-	-	-	2	-	-	2	-	-	-	-
107-30-78	-	-	-	-	-	1	-	1	-	-	-	-
107-30-80	-	-	-	-	3	4	-	7	-	-	-	-
107-30-90	-	1	-	1	3	4	-	7	-	-	-	-
107-40-38	-	-	-	-	2	3	-	5	-	-	-	-
107-40-40	-	3	-	3	8	4	-	12	2	-	-	2
107-40-45	-	-	-	-	2	2	-	4	1	-	-	1
107-40-47	-	-	-	-	8	-	-	8	1	-	-	1
107-40-49	-	-	-	-	4	-	-	4	2	-	-	2
107-40-55	-	-	-	-	3	-	-	3	1	-	-	1
108-20-01	-	-	-	-	-	-	-	-	-	-	-	-
108-40-20	-	-	-	-	4	1	-	5	-	-	-	-
108-60-06	-	-	-	-	-	-	-	-	-	-	-	-

Appendix Table 3. (continued)

	Tolstoi Point				Myers Chuck				Union Bay			
Stream Number	Early July	Late July	Early August	Total	Early July	Late July	Early August	Total	Early July	Late July	Early August	Total
109-30-03	-	-	-	-	-	-	-	-	-	-	-	-
109-43-06	-	-	-	-	-	-	-	-	-	-	-	-
109-43-08	-	-	-	-	-	-	-	-	-	-	-	-
109-44-37	-	-	-	-	-	-	-	-	-	-	-	-
109-62-13	-	-	-	-	-	-	-	-	-	-	-	-
109-62-14	-	-	-	-	-	-	-	-	-	-	-	-
109-62-20	-	-	-	-	-	-	-	-	-	-	-	-
109-62-24	-	-	-	-	-	-	-	-	-	-	-	-
109-62-26	-	-	-	-	-	-	-	-	-	-	-	-
109-62-28	-	-	-	-	-	-	-	-	-	-	-	-
110-13-04	-	-	-	-	1	-	-	1	-	-	-	-
110-32-09	-	-	-	-	-	-	-	-	-	-	-	-
110-33-10	-	-	-	-	-	-	-	-	-	-	-	-
110-34-06	-	-	-	-	-	-	-	-	-	-	-	-
110-34-08	-	-	-	-	-	-	-	-	-	-	-	-
110-34-14	-	-	-	-	-	-	-	-	-	-	-	-
Canadian	-	-	-	-	-	-	-	-	-	-	-	-
Total	0	140	0	140	146	285	0	431	21	0	0	21

Appendix Table 3. (continued)

Stream Number	Steamer Point				Point Baker				Shipley Bay			
	Early July	Late July	Early August	Total	Early July	Late July	Early August	Total	Early July	Late July	Early August	Total
101-30-83	-	-	-	-	-	-	-	-	-	-	-	-
101-30-75	-	-	1	1	-	-	-	-	-	-	-	-
101-45-78	1	-	-	1	-	-	-	-	-	-	-	-
101-45-15	-	-	1	1	-	-	-	-	-	-	-	-
101-47-25	-	-	-	-	-	-	-	-	-	-	-	-
101-55-20	-	-	-	-	-	-	-	-	-	-	-	-
101-55-40	-	-	-	-	-	-	-	-	-	-	-	-
101-71-08	-	-	-	-	-	-	-	-	-	-	-	-
101-71-14	-	-	-	-	-	-	-	-	-	-	-	-
101-71-16	-	-	-	-	-	-	-	-	-	-	-	-
101-71-63	-	-	-	-	-	-	-	-	-	-	-	-
101-75-10	1	-	-	1	-	-	-	-	-	-	-	-
101-75-50	1	-	-	1	-	-	-	-	-	-	-	-
101-75-76	-	-	-	-	-	-	-	-	-	-	-	-
101-75-80	-	-	-	-	-	-	-	-	-	-	-	-
101-80-03	-	-	-	-	-	-	-	-	-	-	-	-
101-80-40	-	-	-	-	-	-	-	-	-	-	-	-
101-80-52	-	-	-	-	-	-	-	-	-	-	-	-
101-80-68 (weir)	1	-	-	1	-	-	-	-	-	-	-	-
101-80-84	-	-	-	-	-	-	-	-	-	-	-	-
101-90-29	-	-	-	-	-	-	-	-	-	-	-	-
101-90-39	-	-	-	-	-	-	-	-	-	-	-	-
101-90-50	-	-	-	-	-	-	-	-	-	-	-	-
101-90-60	-	-	-	-	-	-	-	-	-	-	-	-
101-90-61	-	-	-	-	-	-	-	-	-	-	-	-
101-90-62	-	-	-	-	-	-	-	-	-	-	-	-
101-90-68	-	-	1	1	-	-	-	-	-	-	-	-
101-90-71	-	-	-	-	-	-	-	-	-	-	-	-

Appendix Table 3. (continued)

Stream Number	Steamer Point				Point Baker				Shipley Bay			
	Early July	Late July	Early August	Total	Early July	Late July	Early August	Total	Early July	Late July	Early August	Total
101-90-72	-	-	-	-	-	-	-	-	-	-	-	-
101-90-80	-	1	-	1	-	-	-	-	-	-	-	-
101-90-84	-	-	-	-	-	-	-	-	-	-	-	-
101-90-86	-	-	-	-	-	-	-	-	-	-	-	-
102-30-17	-	-	-	-	-	-	-	-	-	-	-	-
102-30-28	-	-	-	-	-	-	-	-	-	-	-	-
102-30-37	-	-	-	-	-	-	-	-	-	-	-	-
102-30-51	-	-	-	-	-	-	-	-	-	-	-	-
102-30-67	-	-	-	-	-	-	-	-	-	-	-	-
102-30-87	-	-	-	-	-	-	-	-	-	-	-	-
102-30-89	-	-	-	-	-	-	-	-	-	-	-	-
102-40-43	-	-	-	-	-	-	-	-	-	-	-	-
102-40-52	-	-	1	1	-	-	-	-	-	-	-	-
102-40-60	-	-	-	-	-	-	-	-	-	-	-	-
102-40-71	-	-	-	-	-	-	-	-	-	-	-	-
102-40-73	-	-	-	-	-	-	-	-	-	-	-	-
102-40-87	-	-	-	-	-	-	-	-	-	-	-	-
102-50-21	-	-	-	-	-	-	-	-	-	-	-	-
102-60-24	-	-	-	-	-	-	-	-	-	-	-	-
102-60-72	-	-	-	-	-	-	-	-	-	-	-	-
102-60-82	-	-	-	-	-	-	-	-	-	-	-	-
102-60-84	-	-	-	-	-	-	-	-	-	-	-	-
102-60-87	-	-	-	-	-	-	-	-	-	-	-	-
103-80-26	-	-	-	-	-	-	-	-	-	-	-	-
103-80-35	-	-	-	-	-	-	-	-	-	-	-	-
103-80-46	-	-	-	-	-	-	-	-	-	-	-	-

Appendix Table 3. (continued)

Stream Number	Steamer Point				Point Baker				Shipley Bay			
	Early July	Late July	Early August	Total	Early July	Late July	Early August	Total	Early July	Late July	Early August	Total
103-80-50	-	-	-	-	-	-	-	-	-	-	-	-
103-90-04	-	-	-	-	-	-	-	-	-	-	-	-
103-90-10	-	-	-	-	-	-	-	-	-	-	-	-
103-90-25	-	-	-	-	-	-	-	-	-	-	-	-
103-90-26	-	-	-	-	-	-	-	-	-	-	-	-
103-90-27	-	-	-	-	-	-	-	-	-	-	-	-
103-90-30	-	-	-	-	-	-	-	-	-	-	-	-
103-90-58	-	-	-	-	-	-	-	-	-	-	-	-
103-90-59	-	-	-	-	-	-	-	-	-	-	-	-
103-90-61	-	-	-	-	-	-	-	-	-	-	-	-
103-90-63	-	-	-	-	-	-	-	-	-	-	-	-
103-90-69	-	-	-	-	-	-	-	-	-	-	-	-
103-90-72	-	-	-	-	-	-	-	-	-	-	-	-
103-90-80	-	-	-	-	-	-	-	-	-	-	-	-
103-90-81	-	-	-	-	-	-	-	-	-	-	-	-
104-none	-	-	-	-	-	-	-	-	-	-	-	-
105-10-19	-	-	-	-	-	-	-	-	-	-	-	-
105-10-21	-	-	-	-	-	-	-	-	-	-	1	1
105-10-24	-	-	-	-	-	-	-	-	-	-	4	4
105-10-28	-	-	-	-	-	-	-	-	-	-	-	-
105-10-32	-	-	-	-	-	-	-	-	-	-	2	2
105-20-06	-	-	-	-	-	-	-	-	-	-	-	-
105-20-07	-	-	-	-	-	-	-	-	-	-	-	-
105-20-08	-	-	-	-	-	-	-	-	-	-	-	-
105-20-10	-	-	-	-	-	-	-	-	-	-	-	-
105-20-12	-	-	-	-	-	-	-	-	-	-	-	-
105-41-05	-	-	-	-	-	-	-	-	-	-	5	5

Appendix Table 3. (continued)

Stream Number	Steamer Point				Point Baker				Shipley Bay			
	Early July	Late July	Early August	Total	Early July	Late July	Early August	Total	Early July	Late July	Early August	Total
105-42-05	-	-	-	-	-	-	-	-	-	-	13	13
105-42-08	-	-	-	-	-	-	-	-	-	-	-	-
105-42-09	-	-	-	-	-	-	-	-	-	-	5	5
105-42-10	-	-	-	-	-	-	-	-	-	-	-	-
105-42-11	-	-	-	-	-	-	-	-	-	-	-	-
105-42-12	-	-	-	-	-	-	-	-	-	-	-	-
105-42-14	-	-	-	-	-	-	-	-	-	-	1	1
105-43-02	-	-	-	-	-	-	-	-	-	-	43	43
105-43-05	-	-	-	-	-	-	-	-	-	-	-	-
105-43-06	-	-	-	-	-	-	-	-	-	-	109	109
105-50-01	-	-	1	1	-	-	-	-	-	-	23	23
106-10-04	-	-	-	-	-	-	-	-	-	-	-	-
106-10-06	-	-	-	-	-	-	-	-	-	-	-	-
106-10-10	-	2	5	7	-	-	-	-	-	-	1	1
106-10-11	-	-	-	-	-	-	-	-	-	-	-	-
106-10-30	-	-	3	3	-	-	-	-	-	-	-	-
106-20-23	-	-	-	-	-	-	-	-	-	-	-	-
106-20-34	-	-	-	-	-	-	-	-	-	-	-	-
106-21-03	-	1	-	1	-	-	-	-	-	-	-	-
106-21-04	-	8	7	15	-	-	-	-	-	-	-	-
106-21-05	-	6	10	16	-	-	-	-	-	-	-	-
106-22-04	-	2	3	5	-	1	-	1	-	-	-	-
106-22-06	-	2	2	4	-	-	-	-	-	-	-	-
106-22-08	-	-	1	1	-	-	-	-	-	-	-	-
106-22-10	1	9	6	16	-	-	-	-	-	-	-	-
106-22-14	-	-	-	-	-	-	-	-	-	-	-	-
106-22-14B	-	-	-	-	-	-	-	-	-	-	-	-

Appendix Table 3. (continued)

Stream Number	Steamer Point				Point Baker				Shipley Bay			
	Early July	Late July	Early August	Total	Early July	Late July	Early August	Total	Early July	Late July	Early August	Total
106-22-14D	-	-	-	-	-	-	-	-	-	-	-	-
106-22-16	-	-	-	-	-	-	-	-	-	-	1	1
106-30-10	-	42	41	83	-	-	-	-	-	-	-	-
106-30-12	-	1	-	1	-	-	-	-	-	-	-	-
106-30-15	-	-	-	-	-	-	-	-	-	-	-	-
106-30-72	-	-	-	-	-	-	-	-	-	-	-	-
106-30-75	-	-	-	-	-	-	-	-	-	-	-	-
106-30-77	-	-	-	-	-	-	-	-	-	-	-	-
106-30-80	-	-	1	1	-	-	-	-	-	-	-	-
106-30-82	-	-	1	1	-	-	-	-	-	-	1	1
106-44-55	-	1	-	1	-	-	-	-	-	-	-	-
107-10-10	-	3	1	4	-	-	-	-	-	-	-	-
107-10-20	-	-	-	-	-	-	-	-	-	-	-	-
107-10-24	-	-	-	-	-	-	-	-	-	-	-	-
107-10-25	-	-	-	-	-	-	-	-	-	-	-	-
107-10-30	-	4	1	5	-	-	-	-	-	-	1	1
107-10-70	-	2	1	3	-	-	-	-	-	-	-	-
107-10-71	-	-	-	-	-	-	-	-	-	-	-	-
107-20-01	12	13	3	28	-	-	-	-	-	-	-	-
107-20-05	-	-	-	-	-	-	-	-	-	-	-	-
107-20-15	-	-	-	-	-	-	-	-	-	-	-	-
107-20-20	1	1	-	2	-	-	-	-	-	-	-	-
107-20-23	-	1	1	2	-	-	-	-	-	-	-	-
107-20-30	-	6	2	8	-	-	-	-	-	-	-	-
107-20-70	-	3	1	4	-	-	-	-	-	-	-	-
107-30-30	2	8	1	11	-	-	-	-	-	-	-	-
107-30-70	8	50	2	60	-	-	-	-	-	-	-	-

Appendix Table 3. (continued)

Stream Number	Steamer Point				Point Baker				Shipley Bay			
	Early July	Late July	Early August	Total	Early July	Late July	Early August	Total	Early July	Late July	Early August	Total
107-30-76	-	1	-	1	-	-	-	-	-	-	-	-
107-30-78	-	2	-	2	-	-	-	-	-	-	-	-
107-30-80	-	5	-	5	-	-	-	-	-	-	-	-
107-30-90	-	11	1	12	-	-	-	-	-	-	-	-
107-40-38	1	1	-	2	-	1	-	1	-	-	-	-
107-40-40	2	-	-	2	-	-	-	-	-	-	-	-
107-40-45	1	1	-	2	-	-	-	-	-	-	-	-
107-40-47	1	2	-	3	-	-	-	-	-	-	-	-
107-40-49	1	-	-	1	-	-	-	-	-	-	-	-
107-40-55	1	-	-	1	-	-	-	-	-	-	-	-
108-20-01	-	-	-	-	-	-	-	-	-	-	-	-
108-40-20	-	2	-	2	-	-	-	-	-	-	-	-
108-60-06	-	-	-	-	-	-	-	-	-	-	-	-
109-30-03	-	-	-	-	-	-	-	-	-	-	-	-
109-43-06	-	-	-	-	-	-	-	-	-	-	-	-
109-43-08	-	-	-	-	-	-	-	-	-	-	-	-
109-44-37	-	-	-	-	-	-	-	-	-	-	-	-
107-62-13	-	-	-	-	-	-	-	-	-	-	-	-
107-62-14	-	-	-	-	-	-	-	-	-	-	-	-
107-62-20	-	-	-	-	-	-	-	-	-	-	-	-
107-62-24	-	-	-	-	-	-	-	-	-	-	-	-
107-62-26	-	-	-	-	-	-	-	-	-	-	-	-
107-62-28	-	-	-	-	-	-	-	-	-	-	-	-
110-13-04	-	1	-	1	-	-	-	-	-	-	-	-
110-13-09	-	-	-	-	-	-	-	-	-	-	-	-

Appendix Table 3. (continued)

Stream Number	Steamer Point				Point Baker				Shipley Bay			
	Early July	Late July	Early August	Total	Early July	Late July	Early August	Total	Early July	Late July	Early August	Total
110-33-10	-	-	-	-	-	-	-	-	-	-	-	-
110-34-06	-	-	-	-	-	-	-	-	-	-	-	-
110-34-08	-	-	-	-	-	-	-	-	-	-	-	-
110-34-14	-	-	-	-	-	-	-	-	-	-	-	-
Canadian	-	1	-	1	-	-	-	-	-	-	-	-
Total	36	191	99	326	0	2	0	2	0	0	143	143

Appendix Table 3. (continued)

	Point Beauclerc				Grand Total (all areas)			
Stream Number	Early July	Late July	Early August	Total	Early July	Late July	Early August	Total
101-30-83	-	-	-	-	-	-	-	-
101-30-75	-	-	-	-	-	-	1	1
101-45-75	-	-	-	-	-	1	-	1
101-45-78	-	-	-	-	1	-	-	1
101-47-15	-	-	-	-	-	3	1	4
101-47-25	-	-	-	-	-	-	-	-
101-55-20	-	-	-	-	-	-	-	-
101-55-40	-	-	-	-	-	-	-	-
101-71-08	-	-	-	-	-	-	-	-
101-71-14	-	-	-	-	-	1	-	1
101-71-16	-	-	-	-	-	-	-	-
101-71-63	-	-	-	-	-	1	-	1
101-75-05	-	-	-	-	6	1	-	7
101-75-10								
101-75-15								
101-75-50								
101-75-76								
101-75-80								
101-80-03	-	-	-	-	-	2	-	2
101-80-40	-	-	-	-	-	-	-	-
101-80-52	-	-	-	-	1	3	-	4
101-80-68 (weir)	-	-	-	-	5	8	-	13
101-80-84	-	-	-	-	-	2	-	2
101-90-29	-	-	-	-	-	1	-	1
101-90-39	-	-	-	-	-	-	-	-
101-90-50	-	-	-	-	-	-	-	-
101-90-60	-	-	-	-	-	-	-	-
101-90-61	-	-	-	-	-	-	-	-
101-90-62	-	-	-	-	-	1	-	1

Appendix Table 3. (continued)

	Point Beauclerc				Grand Total (all areas)			
Stream Number	Early July	Late July	Early August	Total	Early July	Late July	Early August	Total
101-90-68	-	-	-	-	-	4	1	5
101-90-71	-	-	-	-	-	-	-	-
101-90-72	-	-	-	-	-	-	-	-
101-90-80	-	-	-	-	-	8	-	8
101-90-84	-	-	-	-	-	-	-	-
101-90-86	-	-	-	-	-	-	-	-
102-30-17	-	-	-	-	-	-	-	-
102-30-28	-	-	-	-	-	-	-	-
102-30-37	-	-	-	-	-	-	-	-
102-30-51	-	-	-	-	-	1	-	1
102-30-67	-	-	-	-	-	1	-	1
102-30-87	-	-	-	-	-	5	-	5
102-30-89	-	-	-	-	-	-	-	-
102-40-43	-	-	-	-	-	1	-	1
102-40-52	-	-	-	-	-	2	1	3
102-40-60	-	-	-	-	-	27	-	27
102-40-71	-	-	-	-	-	8	-	8
102-40-73	-	-	-	-	-	3	-	3
102-40-87	-	-	-	-	-	9	-	9
102-50-21	-	-	-	-	-	4	-	4
102-60-24	-	-	-	-	-	2	-	2
102-60-38	-	-	-	-	-	1	-	1
102-60-42	-	-	-	-	-	1	-	1
102-60-72	-	-	-	-	1	5	-	6
102-60-82	-	-	-	-	-	4	-	4
102-60-84	-	-	-	-	-	5	-	5
102-60-87	-	-	-	-	-	-	-	-
102-70-58	-	-	-	-	-	2	-	2

Appendix Table 3. (continued)

Stream Number	Point Beauclerc				Grand Total (all areas)			
	Early July	Late July	Early August	Total	Early July	Late July	Early August	Total
102-80-13	-	-	-	-	-	10	-	10
103-80-26	-	-	-	-	-	-	-	-
103-80-35	-	-	-	-	-	-	-	-
103-80-46	-	-	-	-	-	-	-	-
103-80-50	-	-	-	-	-	-	-	-
103-90-04	-	-	-	-	-	-	-	-
103-90-10	-	-	-	-	-	-	-	-
103-90-25	-	-	-	-	-	-	-	-
103-90-26	-	-	-	-	-	-	-	-
103-90-27	-	-	-	-	-	-	-	-
103-90-30	-	-	-	-	-	-	-	-
103-90-42	-	-	-	-	-	-	-	-
103-90-58	-	-	-	-	-	-	-	-
103-90-59	-	-	-	-	-	-	-	-
103-90-61	-	-	-	-	-	-	-	-
103-90-63	-	-	-	-	-	-	-	-
103-90-69	-	-	-	-	-	-	-	-
103-90-72	-	-	-	-	-	-	-	-
103-90-80	-	-	-	-	-	-	-	-
103-90-81	-	-	-	-	-	-	-	-
104-none	-	-	-	-	-	-	-	-
105-10-19	-	-	-	-	-	-	-	-
105-10-21	-	-	1	1	-	-	1	1
105-10-24	-	-	3	3	-	-	4	4

Appendix Table 3. (continued)

Stream Number	Point Beauclerc				Grand Total (all areas)			
	Early July	Late July	Early August	Total	Early July	Late July	Early August	Total
105-10-28	-	-	-	-	-	-	-	-
105-10-32	-	-	-	-	-	-	-	-
105-20-02	-	-	27	27	-	-	27	27
105-20-04	-	-	6	6	-	-	5	5
105-20-06	-	-	-	-	-	-	-	-
105-20-07	-	-	-	-	-	-	-	-
105-20-08	-	-	17	17	-	-	17	17
105-20-10	-	1	13	14	-	1	9	10
105-20-12	-	-	9	9	-	-	9	9
105-41-05	-	-	-	-	-	-	5	5
105-42-05	-	-	-	-	-	1	9	10
105-42-08	-	-	-	-	-	-	-	-
105-42-09	-	1	-	1	-	1	3	4
105-42-10	-	-	1	1	-	-	1	1
105-42-11	-	-	-	-	-	-	-	-
105-42-12	-	-	-	-	-	-	-	-
105-42-14	-	-	1	1	-	-	2	2
105-43-02	-	-	1	1	-	-	27	27
105-43-05	-	-	-	-	-	-	-	-
105-43-06	-	-	-	-	-	-	81	81
105-50-01	-	-	1	1	-	-	14	14
106-10-04	-	-	-	-	-	-	-	-
106-10-06	-	-	-	-	-	1	-	1
106-10-10	-	-	-	-	-	14	6	20
106-10-11	-	-	-	-	-	-	-	-
106-10-30	-	-	-	-	-	1	3	4
106-20-23	-	-	-	-	-	1	-	1
106-20-34	-	-	-	-	-	-	-	-
106-21-03	-	-	-	-	-	2	-	2

Appendix Table 3. (continued)

	Point Beauclerc				Grand Total (all areas)			
Stream Number	Early July	Late July	Early August	Total	Early July	Late July	Early August	Total
106-21-04	-	-	-	-	-	18	7	25
106-21-05	-	-	-	-	-	17	10	27
106-22-04	-	-	1	1	-	10	3	13
106-22-06	-	-	-	-	-	7	2	9
106-22-08	-	-	-	-	1	2	1	4
106-22-10	-	-	-	-	2	9	6	17
106-22-14	-	-	-	-	-	-	-	-
106-22-14B	-	-	-	-	-	-	-	-
106-22-14D	-	-	-	-	-	-	-	-
106-22-16	-	-	-	-	-	18	1	19
106-30-10	-	-	-	-	-	45	41	86
106-30-12	-	-	-	-	-	2	-	2
106-30-15	-	-	-	-	-	1	-	1
106-30-72	-	-	-	-	-	-	-	-
106-30-75	-	-	-	-	-	-	-	-
106-30-77	-	-	-	-	-	-	-	-
106-30-80	-	-	-	-	-	2	1	3
106-30-82	-	-	-	-	-	-	2	1
106-30-85	-	-	1	1	-	5	1	6
106-44-55	-	-	-	-	-	1	-	1
107-10-10	-	-	-	-	-	20	1	21
107-10-20	-	-	-	-	-	-	-	-
107-10-24	-	-	-	-	-	1	-	1
107-10-25	-	-	-	-	-	-	-	-
107-10-30	-	-	-	-	4	40	2	46
107-10-70	-	-	-	-	-	18	1	19
107-10-71	-	-	-	-	1	3	-	4
107-20-01	-	-	-	-	79	67	3	149

Appendix Table 3. (continued)

Stream Number	Point Beauclerc				Grand Total (all areas)			
	Early July	Late July	Early August	Total	Early July	Late July	Early August	Total
107-20-05	-	-	-	-	-	-	-	-
107-20-15	-	-	-	-	-	-	-	-
107-20-20	-	-	-	-	3	13	-	16
107-20-23	-	-	-	-	1	4	1	6
107-20-30	-	-	-	-	2	16	2	20
107-20-70	-	-	-	-	-	17	1	18
107-30-30	-	-	-	-	7	17	1	25
107-30-70	-	-	-	-	30	68	2	100
107-30-76	-	-	-	-	2	1	-	3
107-30-78	-	-	-	-	-	3	-	3
107-30-50	-	-	-	-	3	9	-	12
107-30-90	-	-	-	-	3	16	1	20
107-40-38	-	-	-	-	3	5	-	8
107-40-40	-	-	-	-	12	7	-	19
107-40-45	-	-	-	-	4	3	-	7
107-40-47	-	-	-	-	10	2	-	12
107-40-49	-	-	-	-	7	-	-	7
107-40-55	-	-	-	-	5	-	-	5
108-20-01	-	-	-	-	-	-	-	-
107-40-20	-	-	-	-	4	3	-	7
107-60-06	-	-	-	-	-	-	-	-
109-30-03	-	-	-	-	-	-	-	-
109-43-06	-	-	-	-	-	-	-	-
109-43-08	-	-	-	-	-	-	-	-
109-44-37	-	-	-	-	-	-	-	-

Appendix Table 3. (continued)

Stream Number	Point Beauclerc				Grand Total (all areas)			
	Early July	Late July	Early August	Total	Early July	Late July	Early August	Total
109-62-13	-	-	-	-	-	-	-	-
109-62-14	-	-	-	-	-	-	-	-
109-62-20	-	-	-	-	-	-	-	-
109-62-24	-	-	-	-	-	-	-	-
109-62-26	-	-	-	-	-	-	-	-
109-62-28	-	-	-	-	-	-	-	-
110-13-04	-	-	-	-	1	1	-	2
110-32-09	-	-	-	-	-	-	-	-
110-33-10	-	-	-	-	-	-	-	-
110-34-06	-	-	-	-	-	-	-	-
110-34-08	-	-	-	-	-	-	-	-
110-34-14	-	-	-	-	-	-	-	-
Canadian	-	-	-	-	-	1	-	1
Total	-	2	77	79	201	622	317	1140

Appendix Table 4. Ocean recoveries of pink salmon released in southern Southeast Alaska, 1981.

Stream Number	Tolstoi Point				Myers Chuck				Union Bay			
	Early July	Late July	Early August	Total	Early July	Late July	Early August	Total	Early July	Late July	Early August	Total
101-00	-	-	-	-	-	-	-	-	-	-	-	-
101-11	-	2	-	2	2	2	-	4	-	-	-	-
101-23	-	2	-	2	-	1	-	1	-	-	-	-
101-25	-	2	-	2	2	-	-	2	-	-	-	-
101-27	-	-	-	-	-	-	-	-	1	-	-	1
101-28	-	12	-	12	1	4	-	5	2	-	-	2
101-29	-	3	-	3	-	7	-	7	-	-	-	-
101-41	-	4	-	4	-	5	-	5	-	-	-	-
101-45	-	4	-	4	-	4	-	4	-	-	-	-
101-46	-	1	-	1	-	2	-	3	-	-	-	-
101-47	-	1	-	1	-	1	-	1	-	-	-	-
101-80	-	1	-	1	-	-	-	-	-	-	-	-
101-90	-	1	-	1	-	1	-	1	-	-	-	-
102-10	-	19	-	19	-	9	-	9	-	-	-	-
102-20	-	21	-	21	1	3	-	4	-	-	-	-
102-40	-	-	-	-	1	-	-	1	-	-	-	-
102-60	-	1	-	1	-	-	-	-	-	-	-	-
102-70	-	1	-	1	-	3	-	3	-	-	-	-
103-11	-	4	-	4	-	-	-	-	-	-	-	-
103-21	-	3	-	3	-	-	-	-	-	-	-	-
103-23	-	1	-	1	-	-	-	-	-	-	-	-
103-40	-	1	-	1	-	1	-	1	-	-	-	-
103-50	-	1	-	1	-	-	-	-	-	-	-	-
103-80	-	2	-	2	-	1	-	1	-	-	-	-
103-90	-	3	-	3	-	4	-	4	-	-	-	-

Appendix Table 4. (continued)

Stream Number	Tolstoi Point				Myers Chuck				Union Bay			
	Early July	Late July	Early August	Total	Early July	Late July	Early August	Total	Early July	Late July	Early August	Total
104-00	1	1	-	2	-	-	-	-	-	-	-	-
104-10	-	1	-	1	1	-	-	1	-	-	-	-
105-10	-	-	-	-	-	-	-	-	-	-	-	-
105-42	-	1	-	1	-	-	-	-	-	-	-	-
106-10	-	10	-	10	1	5	-	6	1	-	-	1
106-20	-	1	-	1	1	-	-	1	-	-	-	-
106-22	-	32	-	32	1	54	-	55	-	-	-	-
106-30	-	43	-	43	18	68	-	86	3	-	-	-
106-41	-	1	-	1	2	2	-	4	-	-	-	-
107-10	-	4	-	4	-	11	-	11	-	-	-	-
107-20	-	-	-	-	1	-	-	1	-	-	-	-
107-30	-	-	-	-	-	1	-	1	-	-	-	-
Northern Southeast Districts												
109-10	-	-	-	-	-	-	-	-	1	-	-	1
109-43	-	-	-	-	-	1	-	1	-	-	-	-
110-34	-	-	-	-	2	-	-	2	-	-	-	-
111-20	-	1	-	1	-	-	-	-	-	-	-	-

Appendix Table 4. (continued)

Stream Number	Tolstoi Point				Myers Chuck				Union Bay			
	Early July	Late July	Early August	Total	Early July	Late July	Early August	Total	Early July	Late July	Early August	Total
Canadian Statistical Area 1	-	-	-	-	-	-	-	-	-	-	-	-
2	-	1	-	1	-	-	-	-	-	-	-	-
3	-	2	-	2	-	-	-	-	-	-	-	-
4	-	1	-	1	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	1	-	-	1
Total	1	187	-	188	35	190	-	225	9	-	-	9

Appendix Table 4. (continued)

Stream Number	Steamer Point				Point Baker				Shipley Bay			
	Early July	Late July	Early August	Total	Early July	Late July	Early August	Total	Early July	Late July	Early August	Total
101-00	-	1	-	1	-	-	-	-	-	-	-	-
101-11	-	4	2	6	-	-	-	-	-	-	-	-
101-23	-	-	-	-	-	-	-	-	-	-	-	-
101-25	-	-	-	-	-	-	-	-	-	-	-	-
101-27	-	-	-	-	-	-	-	-	-	-	-	-
101-28	-	3	-	3	-	-	-	-	-	-	-	-
101-29	-	1	4	5	-	-	-	-	-	-	1	1
101-41	-	-	-	-	-	-	-	-	-	-	-	-
101-45	-	1	-	1	-	-	-	-	-	-	1	1
101-46	-	-	-	-	-	-	-	-	-	-	-	-
101-47	-	-	-	-	-	-	-	-	-	-	-	-
101-90	-	-	-	-	-	-	-	-	-	-	-	-
102-10	-	-	1	1	-	-	-	-	-	-	-	-
102-20	-	1	-	1	-	-	-	-	-	-	-	-
102-40	-	-	-	-	-	-	-	-	-	-	-	-
102-60	-	-	-	-	-	-	-	-	-	-	-	-
102-70	-	-	-	-	-	-	-	-	-	-	-	-
103-11	-	2	-	2	-	-	-	-	-	-	-	-
103-21	-	-	-	-	-	-	-	-	-	-	-	-
103-23	-	-	-	-	-	-	-	-	-	-	-	-
103-40	-	1	-	1	-	-	-	-	-	-	1	1
103-50	-	-	-	-	-	-	-	-	-	-	-	-
103-80	-	2	-	2	-	-	-	-	-	-	-	-
103-90	-	6	-	6	-	-	-	-	-	-	3	3

Appendix Table 4. (continued)

Stream Number	Steamer Point				Point Baker				Shipley Bay			
	Early July	Late July	Early August	Total	Early July	Late July	Early August	Total	Early July	Late July	Early August	Total
104-00	-	1	-	1	-	-	-	-	-	-	2	2
104-10	-	-	-	-	-	-	-	-	-	-	-	-
105-10	-	-	1	1	-	-	-	-	-	-	1	1
105-42	-	-	-	-	-	-	-	-	-	-	10	10
106-10	-	5	9	14	-	-	-	-	-	-	-	-
106-20	-	5	3	8	-	-	-	-	-	-	-	-
106-22	-	55	25	80	-	-	-	-	-	-	4	4
106-30	2	121	83	206	-	1	-	1	-	-	3	3
106-41	1	4	5	10	-	-	-	-	-	5	-	5
107-10	-	2	2	4	-	1	-	1	-	-	-	-
107-20	-	-	-	-	-	-	-	-	-	-	-	-
107-40	1	-	-	1	-	-	-	-	-	-	-	-
Northern Southeast Districts												
109-10	-	-	-	-	-	-	-	-	-	-	-	-
109-43	-	-	-	-	-	-	-	-	-	-	-	-
110-15	-	1	-	1	-	-	-	-	-	-	-	-
110-34	-	-	-	-	-	-	-	-	-	-	-	-
111-20	-	-	-	-	-	-	-	-	-	-	-	-
Canadian	-	-	-	-	-	-	-	-	-	-	-	-
Total	4	216	135	355	-	2	-	2	-	5	26	31

Appendix Table 4. (continued)

Stream Number	Point Beauclerc				Grand Total (all areas)			
	Early July	Late July	Early August	Total	Early July	Late July	Early August	Total
101-00	-	-	-	-	-	1	-	1
101-11	-	-	-	-	2	8	2	12
101-23	-	-	-	-	-	3	-	3
101-25	-	-	-	-	2	2	-	4
101-27	-	-	-	-	1	-	-	1
101-28	-	-	-	-	3	19	-	22
101-29	-	-	-	-	-	11	5	16
101-41	-	-	-	-	-	9	-	9
101-45	-	-	-	-	-	9	1	10
101-46	-	-	-	-	1	3	-	4
101-47	-	-	-	-	-	2	-	2
101-90	-	-	-	-	-	2	-	2
102-10	-	-	-	-	-	28	1	29
102-20	-	-	-	-	1	25	-	26
102-40	-	-	-	-	1	-	-	1
102-60	-	-	-	-	-	1	-	1
102-70	-	-	-	-	-	4	-	4
103-11	-	-	-	-	-	6	-	6
103-21	-	-	-	-	-	3	-	3
103-23	-	-	-	-	-	1	-	1
103-40	-	-	-	-	-	3	1	4
103-50	-	-	-	-	-	1	-	1
103-80	-	-	-	-	-	5	3	8
103-90	-	-	-	-	-	13	2	15

Appendix Table 4. (continued)

Stream Number	Point Beauclerc				Grand Total (all areas)			
	Early July	Late July	Early August	Total	Early July	Late July	Early August	Total
104-00	-	-	-	-	2	2	-	4
104-10	-	-	-	-	-	1	-	1
105-10	-	-	2	2	-	-	4	4
105-42	-	-	-	-	-	1	10	11
106-10	-	-	-	-	2	20	9	31
106-20	-	-	-	-	1	6	3	10
106-22	-	-	1	1	1	141	25	167
106-30	-	-	2	2	23	233	89	345
106-41	-	1	5	6	3	13	10	26
107-10	-	-	-	-	-	18	2	20
107-20	-	-	-	-	1	-	-	1
107-30	-	-	-	-	-	1	-	1
107-40	-	-	-	-	1	-	-	1
Northern Southeast Districts								
109-10	-	-	-	-	1	-	-	1
109-43	-	-	-	-	-	1	-	1
110-15	-	-	-	-	-	1	-	1
110-34	-	-	-	-	2	-	-	2
111-20	-	-	-	-	-	1	-	1
Canadian	-	-	-	-	1	4	-	5
Total	-	1	10	11	49	602	167	818

Appendix Table 5. Percentage of pink salmon tag recoveries, by year, release time, and district of recovery for Tolstoi Point, Myers Chuck, Union Bay, Steamer Point, Point Baker, Shipley Bay, and Port Beauclerc, 1981.

Year	Release Time	101	102	103	104	105	106	107	108	Total
					Tolstoi Point District of Recovery					
1981	Early	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.3
	Middle	16.1	31.9	4.6	0.6	0.6	33.4	12.7	0.0	99.7
	Late	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	TOTAL	16.0	31.8	4.6	.9	0.6	33.3	12.7	0.0	100.0
					Myers Chuck					
1981	Early	7.9	1.1	0.0	0.0	0.0	14.0	74.2	2.2	27.4
	Middle	9.3	9.8	1.3	0.2	0.0	39.0	40.5	0.2	72.6
	Late	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	TOTAL	8.9	7.4	0.9	0.2	0.0	32.2	49.7	0.7	100.0
					Union Bay					
1981	Early	28.6	3.6	0.0	0.0	0.0	14.3	53.6	0.0	100.0
	Middle	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Late	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	TOTAL	28.6	3.6	0.0	0.0	0.0	14.3	53.6	0.0	100.0
					Steamer Point					
1981	Early	10.3	0.0	0.0	0.0	0.0	10.3	79.4	0.0	5.7
	Middle	2.7	0.3	2.7	0.3	0.3	64.9	28.5	0.5	59.9
	Late	3.9	0.9	0.0	0.0	0.4	88.0	6.9	0.0	34.3
	TOTAL	3.5	0.4	1.6	0.1	0.3	69.7	24.0	0.3	100.0

Appendix Table 5. (continued)

Year	Release Time	District of Recovery 101	102	103	104	105	106	107	108	Total
		Point Baker								
1981	Early	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Middle	0.0	0.0	0.0	0.0	0.0	50.0	50.0	0.0	100.0
	Late	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	TOTAL	0.0	0.0	0.0	0.0	0.0	50.0	50.0	0.0	100.0
		Shipley Bay								
1981	Early	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Middle	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	2.1
	Late	0.9	0.0	2.5	0.0	91.9	4.2	0.4	0.0	97.9
	TOTAL	0.8	0.0	2.5	0.0	90.0	6.2	0.4	0.0	100.0
		Port Beauclerc								
1981	Early	0.0	.0.	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Middle	0.0	0.0	0.0	0.0	66.6	33.4	0.0	0.0	3.2
	Late	0.0	0.0	0.0	0.0	89.1	10.9	0.0	0.0	96.8
	TOTAL	0.0	0.0	0.0	0.0	88.4	11.6	0.0	0.0	100.0

1. Early = July 1 - July 15
2. Middle = July 16 - July 31
3. Late = August 1 - August 15