

SOUTHEASTERN DISTRICT MAINLAND (ALASKA PENINSULA AREA)  
SALMON MANAGEMENT PLAN, 1999

By

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Regional Information Report<sup>1</sup> No. 4K99-30

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Division of Commercial Fisheries  
211 Mission Road  
Kodiak, Alaska

April 1999

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# TABLE OF CONTENTS

	<u>Page</u>
LIST OF TABLES .....	i
LIST OF FIGURES .....	i
LIST OF APPENDICES .....	i
INTRODUCTION.....	1
DESCRIPTION OF AREA .....	1
MANAGEMENT PLAN .....	1
1999 Management Plan .....	1
Chignik Lakes Sockeye Salmon Forecast and SEDM Allocation.....	2
Harvest Scenarios .....	3
Harvest Goals.....	3
Fishing Periods.....	4
Legal Gear Types.....	4
LOCAL STOCKS .....	4
Northwest Stepovak Section .....	4
Stepovak Flats Section .....	5
AIRCRAFT .....	5
LITERATURE CITED .....	6
TABLES .....	7
FIGURES.....	10
APPENDIX .....	14

## LIST OF TABLES

<u>Table</u>	<u>Page</u>
1. Southeastern District Mainland commercial salmon fishery regulatory history, 1970-98.....	7
2. Southeastern District Mainland, effort and assignment of sockeye salmon harvests June 1- July 25, 1985-98 .....	8
3. Sockeye salmon adult escapement requirements for Orzinski Lake .....	9

## LIST OF FIGURES

<u>Figure</u>	<u>Page</u>
1. Map of the Alaska Peninsula Management Area with the Southeastern District Mainland area defined by darkened area.....	10
2. Map of the Southeastern District Mainland fishery from Kupreanof Point to McGinty Point with the salmon sections defined .....	11
3. Map of the Northwest Stepovak Section, with Dorenoi Bay closed waters, through July 25, defined by darkened area .....	12
4. Map of Kupreanof Point area with closed waters defined .....	13

## LIST OF APPENDICES

<u>Appendix</u>	<u>Page</u>
A. Southeastern District Mainland Salmon Management Plan .....	15
B. Chignik Management Area Preliminary Sockeye Salmon Forecast .....	17
C. Application of Fishery Management Plans .....	19

## **INTRODUCTION**

This document is intended to provide commercial fishers and processors with information the Alaska Department of Fish and Game (ADF&G) will use to manage the Southeastern District Mainland (SEDM) fishery.

Inseason announcements will be broadcast on VHF radio channels 6 and 73, and Single Side Band (SSB) radio frequency 3.230 MHz. Information may also be obtained over the ADF&G 24 hour record-a-phone in Sand Point at 383-2334 (383-ADFG).

As required by 5 AAC 39.130 (a)(3) buyers must report daily their salmon purchases by species, (in both numbers of fish and pounds) and number of deliveries by gear to the ADF&G office in Sand Point by 9:00 a.m. the following day. Contact can be made over VHF 6 & 73, and SSB radio 3.230 MHz. Buyers may also phone or fax their information to the ADF&G office in Sand Point.

ADF&G Sand Point Telephone: 383-2066 Fax: 383-2606

Fish tickets must be mailed to the ADF&G office in Sand Point (listed below) within seven days of the purchase date.

Alaska Department of Fish and Game  
P.O. Box 129  
Sand Point, AK 99661

## **DESCRIPTION OF AREA**

The SEDM fishery is located on the south side of the Alaska Peninsula (Figure 1). Included in this fishery are the Beaver Bay, Balboa Bay, Southwest Stepovak, Northwest Stepovak, East Stepovak, and Stepovak Flats Sections (Figure 2). The SEDM fishery is conducted according to a management plan originally established by the Alaska Board of Fisheries (BOF) in 1985, updated in 1991, and most recently revised in 1998 (Table 1; Appendix A). The fishery is allocated 6.0% of the total Chignik bound sockeye salmon harvest through July 25 while providing for specific biological and allocative requirements in the Chignik Management Area (CMA). After July 25, the SEDM fishery is managed for local salmon stocks.

## **MANAGEMENT PLAN**

### ***1999 Management Plan***

Under the current SEDM management plan (Appendix A):

1. The area to be managed for local Orzinski Lake sockeye salmon includes the entire Northwest Stepovak Section (Figure 3). Prior to July 1, the entire SEDM will be managed on an allocation based on the strength of the Chignik sockeye salmon runs 5 AAC 09.360(a)(1) and (b)-(h) and 80% of the sockeye caught will be considered Chignik bound salmon. However, beginning July 1, all sockeye salmon caught in the Northwest Stepovak Section will be considered 100% local fish and not counted toward the Chignik allocation. From July 1 through July 25, the Northwest Stepovak Section, outside Orzinski Bay, may open to commercial salmon fishing if the Orzinski Lake and Chignik Lakes System (Black and Chignik Lakes) sockeye salmon escapements are being met, and the CMA sockeye salmon harvest is expected to be at least 300,000 fish through July 8, and 600,000 fish through July 25. The BOF mandated fishing schedule for the Northwest Stepovak Section, excluding Orzinski Bay, from July 1 through July 25 will not exceed four days during a seven-day period. The maximum number of consecutive fishing days is two.

Beginning July 1, Orzinski Bay will be managed entirely on local stocks. The Stepovak Flats Section will continue to be managed for chum salmon returning to Stepovak Flats streams throughout the entire season, however, 80% of the sockeye salmon caught in this section through July 25 will be considered Chignik bound fish (Figure 2).

2. The percentage of sockeye salmon allocated to the SEDM fishery by the BOF is 6% of the total Chignik bound sockeye salmon harvest through July 25. The BOF established this percentage during the January 1996 meeting in an attempt to maintain traditional harvest levels of Chignik bound sockeye salmon in the SEDM fishery and to compensate for the increased area managed for local Orzinski Lake sockeye salmon.
3. In 1996, the BOF established a closed waters area encompassing Kupreanof Point (55°33.98' N. lat., 159°35.88' W. long.) 5 AAC 09.350 (38) from July 6 through August 31 (Figure 4). The department may extend the Kupreanof Point closed waters area through October 31, by emergency order. The Kupreanof Point closed waters extension will remain in effect until:
  - (A) the department determines the coho salmon subsistence needs of the residents of Perryville have been satisfied, and
  - (B) the commercial salmon fisheries throughout the Western and Perryville Districts, which are currently closed after August 20 because of subsistence concerns, are reopened during this period.

### ***Chignik Lakes Sockeye Salmon Forecast and SEDM Allocation***

The 1999 CMA forecast is for an early run (Black Lake) harvest of 649,000 sockeye, a late run (Chignik Lake) harvest of 1,035,000 sockeye, and a total estimated annual harvest of 1,684,000 sockeye salmon (Appendix B). From 1988-97, approximately 80% of the annual Chignik bound sockeye salmon harvest has occurred prior to July 26. Therefore, if 80% of the 1999 Chignik harvest occurs prior to July 26, the SEDM (excluding the Northwest Stepovak Section harvest beginning July 1) 6% allocation converts into a projected harvest of approximately 81,000 sockeye through July 25 that are considered Chignik bound (101,000 total sockeye harvest through July 25).

The 1999 SEDM projected harvest of 81,000 Chignik bound sockeye salmon (6% allocation) through July 25 is slightly below the 1988-97 average harvest of 88,535 salmon (Table 2).

The total Chignik sockeye salmon harvest is calculated by adding 100% of those sockeye salmon caught within the CMA, 80% of the sockeye salmon caught in the Cape Igvak Section of the Kodiak Management Area (KMA) through July 25, and 80% of the sockeye salmon caught in the SEDM fishery through July 25, excluding 100% of the sockeye salmon caught in the Northwest Stepovak Section from July 1 through July 25.

### *Harvest Scenarios*

Because the harvestable surplus in Chignik is expected to exceed 600,000 sockeye salmon through July 25, the SEDM fishery could potentially begin when the CMA fishery opens.

If the Chignik first run is as weak or weaker than expected, the SEDM fishery, excluding Orzinski Bay, will be curtailed in order to allow a minimum harvest in the CMA of at least 300,000 sockeye salmon through July 8.

From June 26 through July 9, the strength of the second run of Chignik sockeye salmon cannot be evaluated. The department may close or restrict commercial salmon fishing in the SEDM, excluding Orzinski Bay beginning July 1, during this period until the strength of the second run can be determined (ADF&G 1998).

After July 8, the SEDM fishery, excluding Orzinski Bay, will be managed on the strength of the Chignik second run and on the catch of Chignik bound sockeye salmon through July 8. If the second run escapement goals are being met and the run is strong enough for a fishery at Chignik, the SEDM may open to commercial salmon fishing if at least 300,000 combined first and second run sockeye salmon have been harvested through July 25 in the CMA. The department will manage the fishery so that the number of sockeye salmon harvested in the CMA from both runs combined will be at least 600,000 salmon and the harvest in the SEDM (excluding the Northwest Stepovak sockeye harvest beginning July 1) will approach as near as possible 6.0% of the total Chignik bound sockeye salmon catch through July 25 (Appendix C).

### *Harvest Goals*

The SEDM fishery will be managed according to the plan as stated in the current Alaska Peninsula commercial salmon fishing regulation book (ADF&G 1998; Appendix A). No attempt will be made to allow equal fishing time with Chignik. The goal will be to meet the 6.0% allocation level through July 25 after the conditions of the management plan have been satisfied.

After the conditions of the management plan have been satisfied, the interim management goal of 6.0% of the total Chignik bound sockeye salmon catch at midnight July 10 is desired to achieve historical harvest levels between set gillnet and purse seine permit holders. Purse seine gear is legal in the fishery beginning July 11. To meet the interim and final goals, the percentage may fluctuate above or below 6.0% prior to July 11 and July 25.

Because of the restrictions placed upon the SEDM fishery to protect the Chignik runs, it may not be possible to achieve a 6.0% allocation level, even if escapement goals are met and the minimum catch level of 600,000 sockeye salmon at Chignik is exceeded.

### ***Fishing Periods***

The SEDM fishery is regulated independently of other fisheries occurring in the Alaska Peninsula Management Area. The department will attempt to have fishing periods in the Northwest Stepovak and Stepovak Flats Sections concurrent with fishing periods in the remainder of the SEDM area to avoid concentrating fishing gear. During July 1-25, as required by the BOF management plan, the fishing schedule for the Northwest Stepovak Section, excluding Orzinski Bay, will not exceed four days during a seven-day period. The maximum number of consecutive fishing days is two.

All fishing periods will be announced by emergency orders. A minimum of 24 hours advance notice will be given prior to the first commercial fishing period of the season. At least 12 hours notice will be given prior to the opening of any other fishing period, unless it extends the current fishing period.

### ***Legal Gear Types***

In the SEDM area, set gillnet gear is the only legal gear type allowed through midnight July 10. Beginning July 11, set gillnet, purse seine, and hand purse seine gear types are allowed.

## **LOCAL STOCKS**

For the purposes of this plan, local runs include only those salmon in the waters:

- (1) beginning July 1, in the Northwest Stepovak Section described in 5 AAC 09.200(f)(5); and
- (2) in the Stepovak Flats Section as described in 5 AAC 09.200(f)(6).

### ***Northwest Stepovak Section***

Prior to July 1, 80% of the sockeye salmon caught in the entire SEDM are considered Chignik bound fish. Beginning July 1, all sockeye salmon caught in the Northwest Stepovak Section are considered to be 100% local, Orzinski Lake stock. Eighty percent of the sockeye salmon caught in the SEDM, outside the Northwest Stepovak Section, through July 25 are considered Chignik bound.

A weir was used to count salmon escapements into Orzinski Lake between 1935 and 1941, and again from 1990 through the present (Campbell et al. *In press*). The earliest recorded sockeye salmon escapement through the weir occurred on June 11, 1940 (11 salmon). Sockeye salmon usually enter the lake in late June and normally by the second week of July, 50% of the annual escapement goal has been achieved. Generally, 99% of the 20,000 adult sockeye escapement goal is achieved by the first week of August.

Based on aerial surveys and weir counts, ADF&G has developed sockeye salmon escapement requirements for Orzinski Lake by time periods (Table 3). The Orzinski Lake sockeye escapement goal is 20,000 adult salmon. In 1998, the total estimated sockeye escapement was about 25,000 salmon. The department intends to operate a weir on the Orzinski Lake system in 1999.

If the sockeye salmon escapement goals into Orzinski Lake are not being met, the Northwest Stepovak Section will be closed until the goals are achieved, or until management of the area shifts to pink salmon after July 25.

### *Stepovak Flats Section*

Commercial salmon fishing in the Stepovak Flats Section is managed for chum salmon returning to local Stepovak Flats streams. Through July 25, 80% of the sockeye salmon harvested in this section are considered Chignik bound fish and are included in the 6.0% allocation criteria stated in the SEDM management plan. After July 28, the entire Stepovak Flats Section and the northern portion of the East Stepovak Section, as described in 5 AAC 09.350 (23) are closed to commercial salmon fishing to protect schooling chum salmon.

After July 25, the entire SEDM area will be managed on the basis of local stocks, as described in 5 AAC 09.360 (h), and 5 AAC 09.366 (g) (1)-(2) and (h).

### **AIRCRAFT**

**A PERSON MAY NOT USE OR EMPLOY AN AIRCRAFT TO LOCATE SALMON FOR THE COMMERCIAL TAKING OF SALMON OR TO DIRECT COMMERCIAL FISHING OPERATIONS IN THE ALASKA PENINSULA AREA ONE HOUR BEFORE, DURING, AND ONE HOUR AFTER A COMMERCIAL SALMON FISHING PERIOD.**

## LITERATURE CITED

- ADF&G (Alaska Department of Fish and Game). 1998. 1998-2000 Bristol Bay, Alaska Peninsula, Atka-Amlia, and Aleutian Islands Areas commercial fishing regulations, 1998 edition. Alaska Department of Fish and Game, Division of Commercial Fisheries, Juneau.
- Campbell, R.D., A.R. Shaul, M.J. Witteveen and J.J. Dinnocenzo. *In press*. South Peninsula Annual Salmon Management Report, 1998. Alaska Department of Fish and Game, Division of Commercial Fisheries, Kodiak.

Table 1. Southeastern District Mainland commercial salmon fishery regulatory history, 1970-99.

Year	Management Plan
Pre-1974	Set weekly fishing periods, usually 5 days per week
1974-77	Day for day fishing with Chignik
1978	3 days per week, seine gear prohibited before July 10
1979-84	5 days per week, 60,000 catch ceiling (until Chignik catches 1 million) After 7/10 entire SEDM managed on local stocks.
1985-91	Assures minimum harvest in Chignik of 600,000, restricts fishing in SEDM during overlap period (6/26-7/9), allows 6% (6.2%-1985-87) allocation of total Chignik sockeye harvest through 7/25, permits openings in Stepovak Flats and Northwest Stepovak Sections based on local runs
1992-95	Area managed on local sockeye runs reduced to include only Orzinski Bay (Stepovak Flats Section not effected), increased allocation of Chignik sockeye harvest from 6% to 7%
1996-98	Area managed on local sockeye runs increased to include the Northwest Stepovak Section beginning July 1, reduced allocation of Chignik sockeye harvest from 7% to 6%
1998-Present	Beginning July 1, only Orzinski Bay will be managed entirely on local sockeye run. However, all sockeye salmon caught in the Northwest Stepovak Section beginning July 1 will be considered 100% local fish and not counted toward the 6% allocation. Remainder of SEDM sockeye salmon harvest allocated as 80% Chignik bound fish. Assures minimum harvest of 600,000 sockeye salmon in Chignik.

Table 2. Southeastern District Mainland, effort and assignment of sockeye salmon harvests June 1 - July 25, 1985-98.

Year	Effort				Northwest Stepovak			SEDM minus Northwest Stepovak		SEDM		Total Catch
	Gillnet Landings	Seine Landings	Landings	Total	(Local)	(Non-local)	(Local)	(Non-local)	(Local)	(Non-local)		
1985 <sup>a</sup>	49	367	23	51	16,681	16,681	0	12,855	51,421	29,536	51,421	80,957
1986	42	616	18	29	59,025	59,025	0	29,501	118,006	88,526	118,006	206,532
1987	53	528	6	9	61,287	61,287	0	36,722	146,886	98,009	146,886	244,895
1988	41	300	16	45	57,010	57,010	0	4,830	19,320	61,840	19,320	81,160
1989	67	248	25	54	83,618	83,618	0	1,121	4,485	84,739	4,485	89,224
1990	46	277	69	131	3,279	3,279	0	32,609	128,599	35,888	128,599	164,487
1991	59	747	39	71	98,834	98,834	0	38,179	152,714	137,013	152,714	289,727
1992 <sup>b</sup>	59	650	6	14	113,428	101,198	12,232	20,403	81,613	121,599	93,845	215,444
1993	64	763	53	82	73,747	54,955	18,792	27,436	109,744	82,391	128,536	210,927
1994	56	678	0	0	89,522	52,880	36,642	26,427	105,708	79,307	142,350	221,657
1995	58	718	26	30	62,598	51,723	10,875	19,357	77,426	71,079	88,301	159,381
1996 <sup>c</sup>	64	1,164	25	46	137,925	127,645	10,280	29,230	116,921	156,875	127,201	284,076
1997 <sup>c</sup>	57	1,173	12	23	304,865	304,865	0	0	0	304,865	0	304,865
1998 <sup>c</sup>	45	340	18	23	33,515	33,515	0	16,723	66,893	50,238	66,893	117,131
Average:												
1985-91	51	440	28	56	54,248	54,248	0	22,260	88,776	76,507	88,776	165,283
1992-95	59	702	21	32	84,824	65,189	19,635	23,406	93,623	88,594	113,258	201,852
1996-97	61	1,169	19	35	221,395	216,255	5,140	14,615	58,461	230,870	63,601	294,471

<sup>a</sup> From 1985 through 1991, the Chignik contribution is 80% of the sockeye salmon harvested in Beaver Bay, Balboa Bay, Southwest Stepovak, Stepovak Flats, and East Stepovak Sections.

<sup>b</sup> From 1992 through 1995, the Chignik contribution is 80% of the sockeye salmon harvested in the Southeastern District Mainland fishery, except Orzinski Bay where 100% of the sockeye salmon are considered local production.

<sup>c</sup> In 1996 through 1998, the Chignik contribution is 80% of the sockeye harvested in Southeastern District Mainland fishery, except beginning July 1, in the Northwest Stepovak Section where 100% of the sockeye salmon are considered local.

Table 3. Sockeye salmon adult escapement requirements for Orzinski Lake.

Time Period Ending Date	Interim Escapement Goals	Cumulative Escapement Goals
1-Jul	2,000	2,000
9-Jul	3,000	5,000
16-Jul	5,000	10,000
23-Jul	5,000	15,000
7-Aug	5,000	20,000
Season Total		20,000

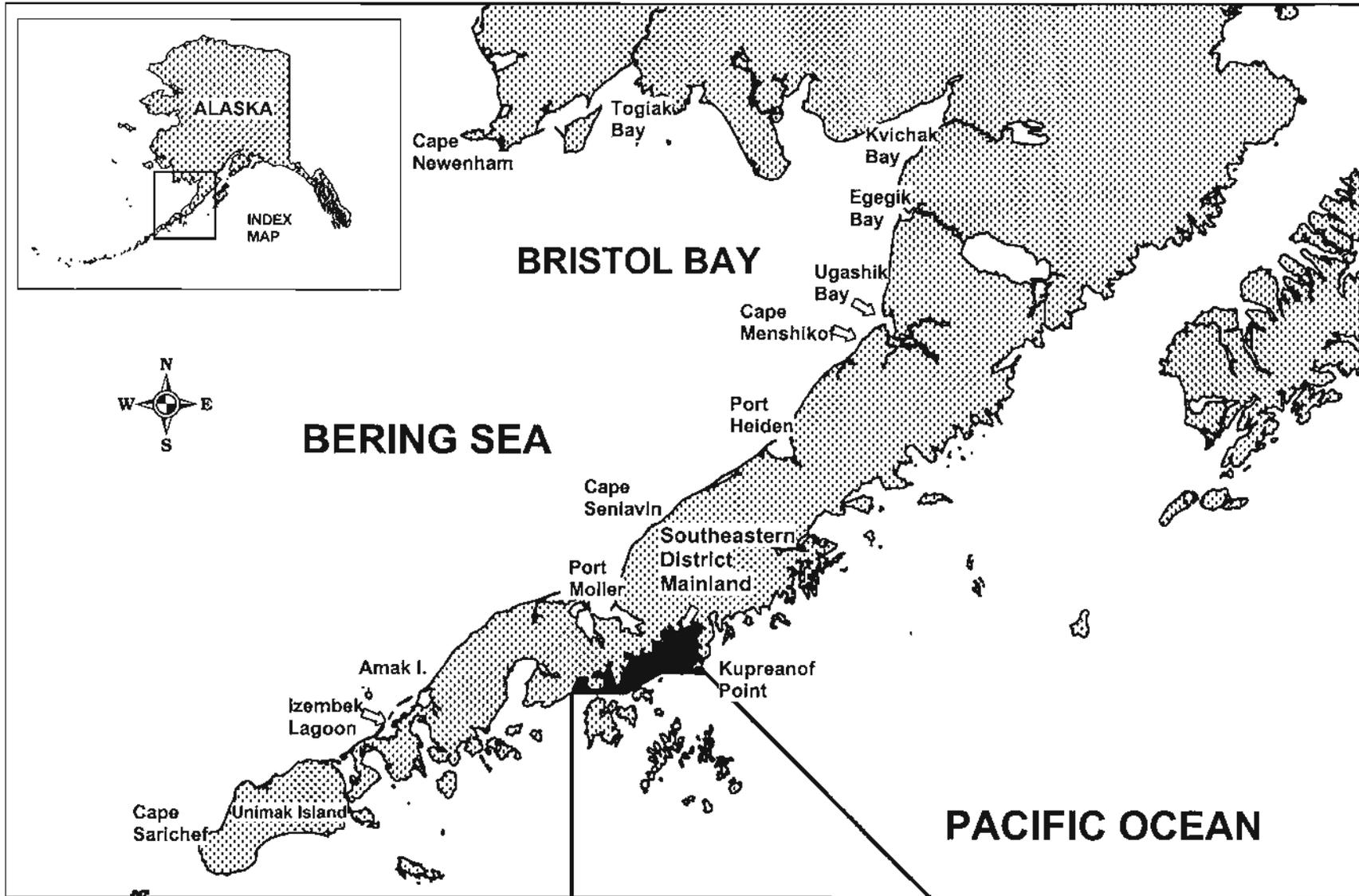


Figure 1. Map of the Alaska Peninsula Management Area with the Southeastern District Mainland area defined by darkened area.

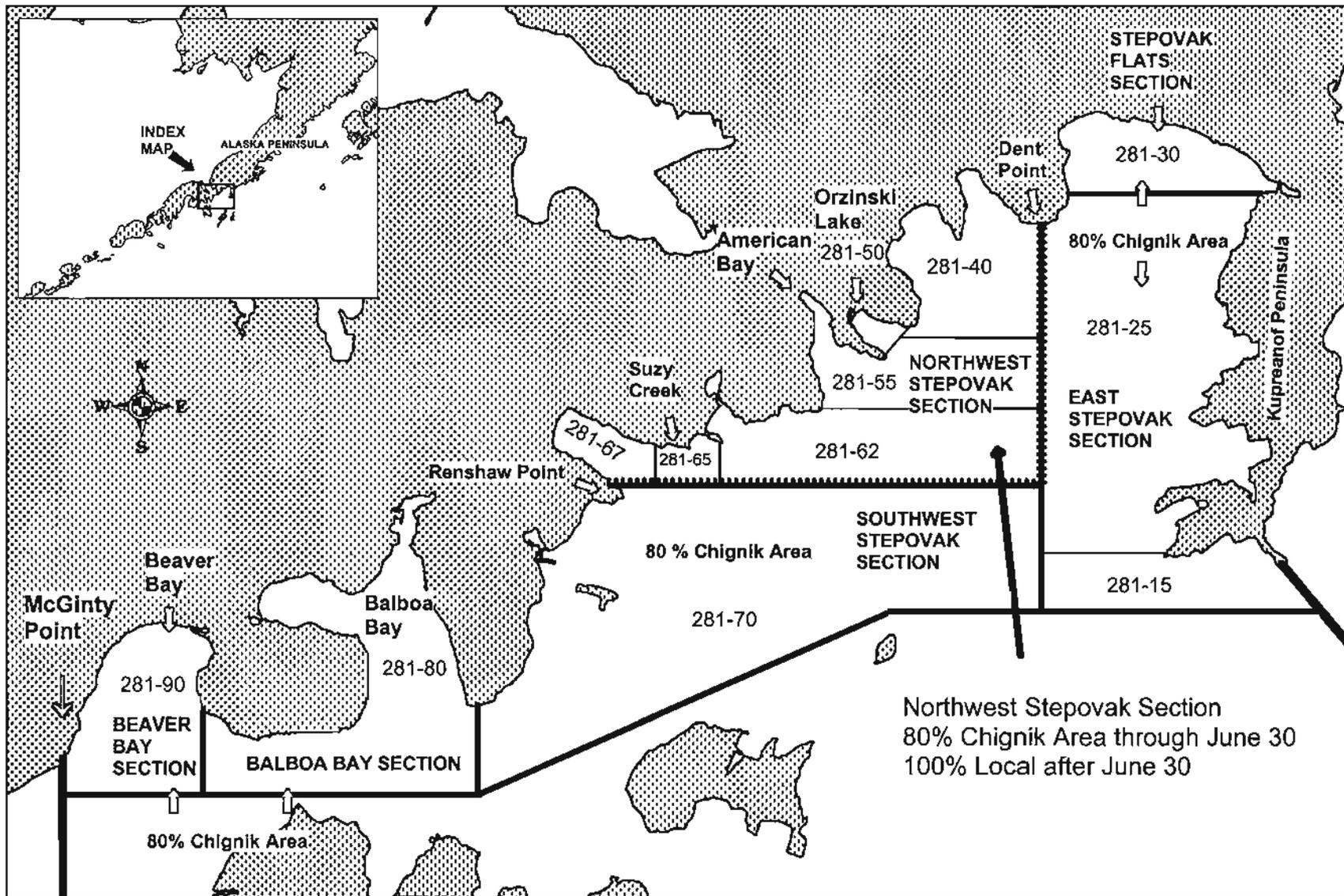


Figure 2. Map of the Southeastern District Mainland fishery from Kupreanof Point to McGinty Point with the salmon sections defined.

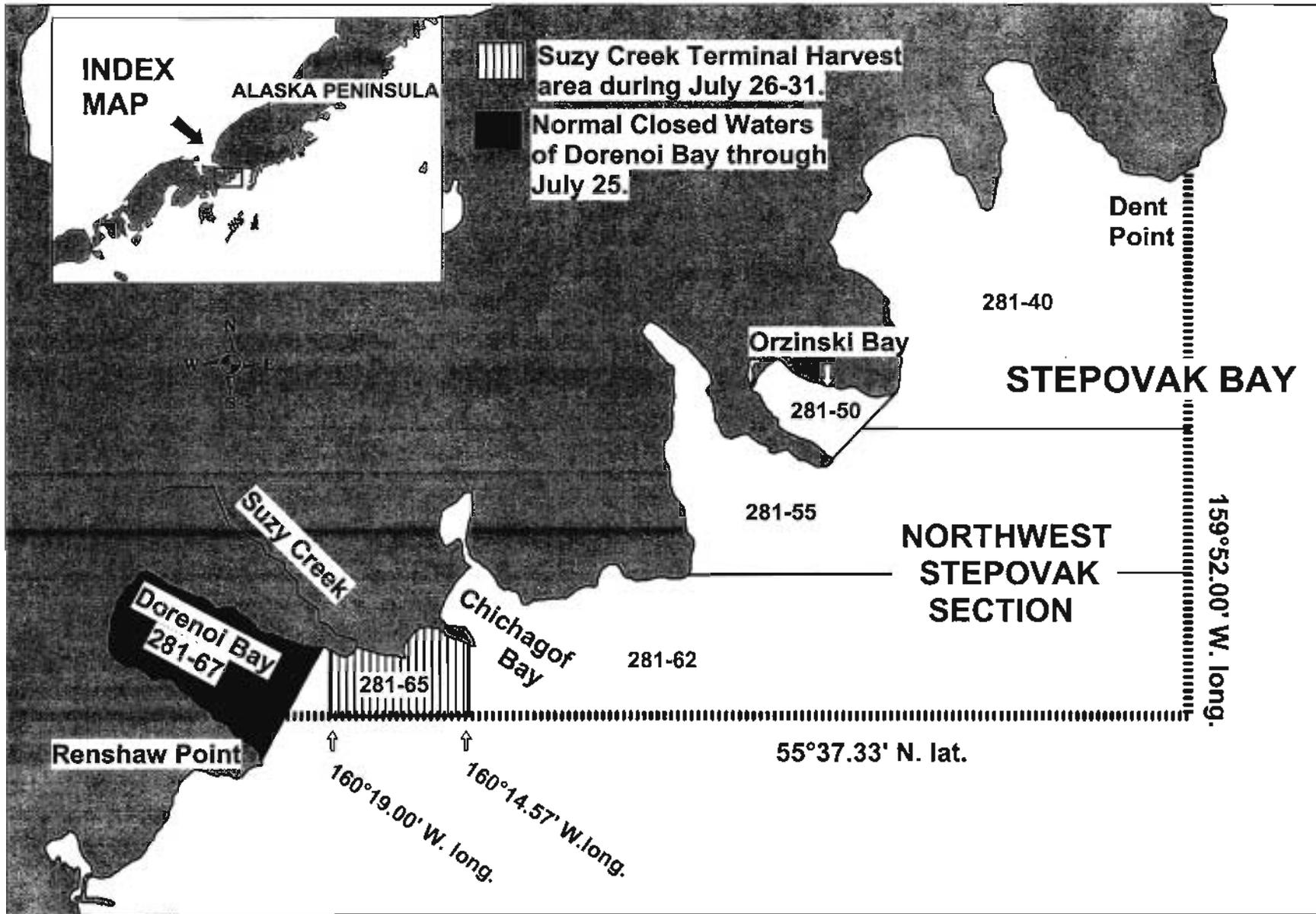


Figure 3. Map of the Northwest Stepovak Section with Dorenoi Bay closed waters through July 25, and Suzy Creek Post June terminal harvest area highlighted.

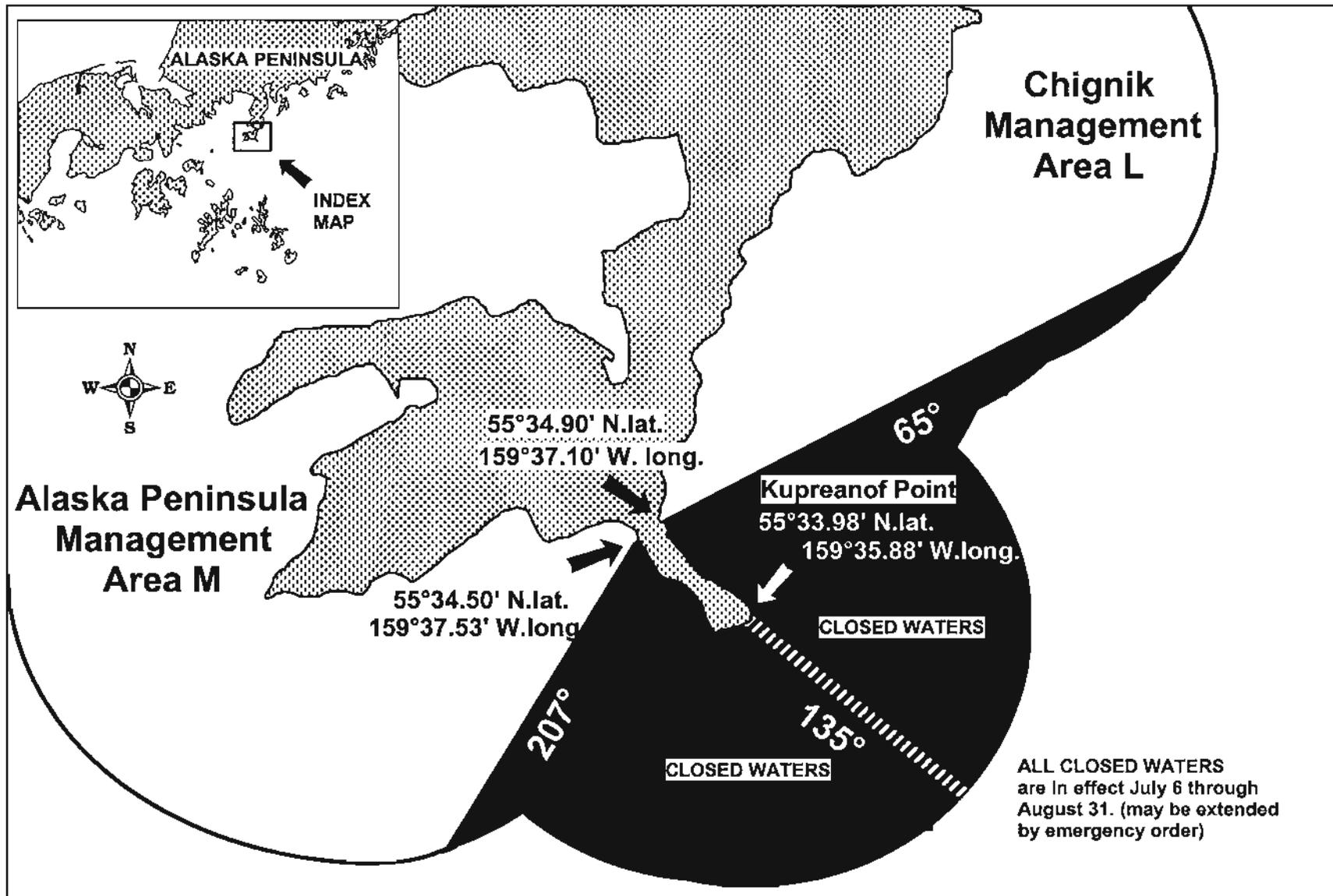


Figure 4. Map of Kupreanof Point area with closed waters defined.

## **APPENDIX**

## **APPENDIX A: SOUTHEASTERN DISTRICT MAINLAND SALMON MANAGEMENT PLAN**

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### **5 AAC 09.360. SOUTHEASTERN DISTRICT MAINLAND SALMON MANAGEMENT PLAN**

(a) This plan pertains to the management of the interception of Chignik River sockeye salmon caught in the Southeastern District Mainland fishery: East Stepovak, Stepovak Flats, Northwest Stepovak, Southwest Stepovak, Balboa Bay, and Beaver Bay Sections. Before July 11, only set gill net gear may be used in these sections. For the purpose of this plan, local runs include only those salmon in the waters:

- 1) beginning July 1, in the Northwest Stepovak Section described 5 AAC 09.200(f)(5):
- 2) the Stepovak Flats Section as described in 5 AAC 09.200(f)(6).

(b) In years when a harvestable surplus for the first (Black Lake) and second (Chignik Lake) runs of Chignik River system sockeye salmon is expected to be less than 600,000, no commercial salmon fishery is allowed in the East Stepovak, Southwest Stepovak, Balboa Bay, and Beaver Bay Sections, and in the Northwest Stepovak Section, as described in 5 AAC 09.200(f)(5) excluding Orzinski Bay of the Northwest Stepovak Section north of a line from Elephant Point at 55°41.92' N. lat., 160°03.2' W. long., to Waterfall Point at 55°43.18' N. lat., 160°01.13' W. long., until a harvest of 300,000 sockeye salmon is achieved in the Chignik Area, as described in 5 AAC 15.100. After July 8, if at least 300,000 sockeye salmon have been harvested in the Chignik Area, and if escapement goals are being met, the department shall manage the fishery so that the number of sockeye salmon harvested in the Chignik Area will be at least 600,000 and the number of sockeye salmon harvested in the East Stepovak, Stepovak Flats, Southwest Stepovak, Balboa Bay, and Beaver Bay Sections and before July 1 in the Northwest Stepovak Section, approaches as near as possible six percent of the total Chignik sockeye salmon catch.

(c) In years when a harvestable surplus beyond escapement goals for the first and second runs of Chignik River system sockeye salmon is expected to be more than 600,000 but the first run fails to develop as predicted and it is determined that a total sockeye salmon harvest in the Chignik Area of 600,000 or more may not be achieved, the commercial salmon fishery in the East Stepovak, Stepovak Flats, Southwest Stepovak, Balboa Bay, and Beaver Bay Sections and in the Northwest Stepovak Section, ), excluding Orzinski Bay of the Northwest Stepovak Section north of a line from Elephant Point at 55°41.92' N. lat., 160°03.20' W. long., to Waterfall Point at 55°43.18' N. lat., 160°01.13' W. long., shall be curtailed in order to allow a harvest in the Chignik Area of 300,000 sockeye salmon through July 8 if that number of fish are determined to be surplus to the escapement goals of the Chignik River system. After July 8, if at least 300,000 sockeye salmon have been harvested in the Chignik Area, and if escapement goals are being met, the department shall manage the fishery so that the number of sockeye salmon harvested in the Chignik Area is at least 600,000 and the number of sockeye salmon harvested in the East Stepovak, Stepovak Flats, Southwest Stepovak, Balboa Bay, and Beaver Bay Sections and before July 1 in the Northwest Stepovak Section, approaches as near as possible six percent of the total Chignik sockeye salmon catch.

(d) In years when a harvestable surplus beyond the escapement goals for the first and second runs of Chignik River system sockeye salmon is expected to be more than 600,000 and the department determines that the runs are as strong as expected, the department shall manage the fishery so that the number of



**Appendix A:** (page 2 of 2)

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sockeye salmon taken in the East Stepovak, Stepovak Flats, Southwest Stepovak, Balboa Bay, and Beaver Bay Sections and before July 1 in the Northwest Stepovak Section, approaches as near as possible six percent of the total Chignik sockeye salmon catch.

(e) The fishing schedule in the Northwest Stepovak Section, excluding the waters of Orzinski Bay located north of a line from Elephant Point at 55°41.92' N. lat., 160°03.20' W. long., to Waterfall Point at 55°43.18' N. lat., 160°01.13' W. long., will not exceed four days during a seven-day period. The maximum number of consecutive fishing days is two.

(f) The estimate of sockeye salmon destined for the Chignik River has been determined to be 80 percent of the sockeye salmon harvested in the East Stepovak, Stepovak Flats, Southwest Stepovak, Balboa Bay, and Beaver Bay Sections and before July 1 in the Northwest Stepovak Section. The sockeye salmon taken in the Northwest Stepovak Section beginning July 1 are considered to be 100% destined for Orzinski Bay.

(g) The total Chignik sockeye salmon catch constitutes those sockeye salmon caught within the Chignik Area, plus 80 percent of the sockeye salmon caught in the East Stepovak, Stepovak Flats, Southwest Stepovak, Balboa Bay, and Beaver Bay Sections, and before July 1 in the Northwest Stepovak Section, as described in 5 AAC 09.200(f), plus 80 percent of the sockeye salmon caught in the Cape Igvak Section of the Kodiak Area. The percentage of Chignik sockeye salmon may be permitted to fluctuate above or below six percent at any time before July 25.

(h) This allocation method is in effect through July 25. The first fishing period of the commercial salmon fishing season in the East Stepovak, Southwest Stepovak, Balboa Bay, and Beaver Bay Sections and before July 1 in the Northwest Stepovak Section, may not occur before the first fishing period of the commercial salmon fishing season in the Chignik Area. After July 25, commercial salmon fishing in the entire Southeastern District Mainland area may be allowed on local stocks.

(i) During the period from approximately June 26 through July 8, the strength of the second run of the Chignik River system sockeye salmon cannot be evaluated. In order to prevent over-harvest of the second run, the department may disallow or severely restrict commercial salmon fishing in the East Stepovak, Stepovak Flats, Southwest Stepovak, Balboa Bay, and Beaver Bay Sections during this period, and from June 26 through June 30 in the Northwest Stepovak Section

(j) The department shall announce all commercial salmon fishing periods by emergency order. The department shall give at least 24-hour notice before the first opening of the season. After the season opening, the advance notice will be 12-hours, unless it is an extension of a fishing period in progress.

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**APPENDIX B: CHIGNIK MANAGEMENT AREA PRELIMINARY SOCKEYE SALMON FORECAST**

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Forecast Area: Chignik  
 Species: Sockeye Salmon

Preliminary Forecast of 1999 Run	Forecast Estimate (thousands)	Forecast Range (thousands)
<b>Total Production</b>		
<b>Early Run (Black Lake)</b>		
Total Run	1,049	
Escapement	400	
Commercial Common Property Harvest	649	
<b>Late Run (Chignik Lake)</b>		
Total Run	1,285	
Escapement	250	
Commercial Common Property Harvest	1,035	
<b>Total Chignik Area Run</b>		
Total Run	2,334	1,704 – 2,964
Escapement	650	
Commercial Common Property Harvest <sup>a</sup>	1,684	

<sup>a</sup> Includes portion of harvest by the Southeastern District Mainland and Cape Igvak Fisheries.

***Forecast Methods***

**Black Lake and Chignik Lake**

The 1999 run forecast for Chignik and Black lakes was based on the combined runs to these lakes using simple linear and polynomial regressions of sibling relationships, analysis of outlier data points, and medians. Predictions for major age-classes were based on the values that had negative residuals since brood year 1970, under the assumption that bad years (1997 and 1998) for sockeye runs are more likely to be followed by bad years. Age-class 1.3 is based on a polynomial relationship with age-class 1.2, and age-class 2.3 is based on a linear relationship with age-class 2.2. Predictions for age-classes 1.2 and 2.2 were calculated from the 1997 smolt emigration data, applying mean survival from smolt 1994 and 1995. The minor age-classes were estimated from the median of their aggregate contributions from brood years since 1970. 80% prediction intervals were calculated by combining the variance of individual and aggregate age-class estimates.

To allocate the total run to the early or late components, similar analyses were performed separately for each lake and percentages of each lake contribution to the total run were then calculated.

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-Continued-

*Forecast Discussion*

The 1999 sockeye salmon run to the Chignik lakes is expected to be 2.3 million fish, which is 0.4 million fish more than last year's total run of 1.9 million. The run and catch estimates are lower than the last 20 years averages of 2.6 and 1.9 million fish, respectively. The two runs are expected to have similar numbers of fish returning, with the Black Lake early run being slightly smaller (45% of total run) than the Chignik Lake late run (55% of total run). The Black Lake run is expected to be 0.3 million sockeye higher than the 1998 run to this lake, and the Chignik Lake run will be similar to last year (0.1 million). Although these estimates are above last year's run, they are within the range of the last ten years.

Studies during winter 1996 in the lakes indicate that fry abundance was average. This observation, together with low numbers of smolt trapped in 1996 in the Chignik River, suggests a conservative approach to estimate returns for age classes 1.3 and 2.3. However, some local observers have indicated seeing smolt schooling in readiness to leave Chignik Lake in early spring, before the traps were installed in the river on the 1<sup>st</sup> of May 1996. These observations are partly supported by the return of ages 1.2 and 2.2 in larger numbers than our smolt estimates can justify. Therefore, age classes 1.3 and 2.3 are based on sibling relationships rather than on smolt counts.

The major age-classes to the Chignik lakes runs are 1.3 and 2.3. The sibling 1.2-1.3 regression explained 89% of the variability, and the estimate for the age-class 1.3 in 1999 is 0.8 million (both lakes combined). The estimate for age-2.3 explained 65% of the variability and is expected to be 1.0 million. Minor age classes (1.2 and 2.2) are expected to contribute about 0.46 million fish to the total run. 1997 smolt emigration from the Chignik system was excellent, and while the age-1.2 return is not expected to be strong (0.08 million), the prediction for the age-2.2 return in 1999 is above average (0.37 million). Confidence in this forecast is fair.

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## **APPENDIX C: APPLICATION OF FISHERY MANAGEMENT PLANS**

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### **5 AAC 39.200 APPLICATION OF FISHERY MANAGEMENT PLANS**

(a) The Board of Fisheries has implemented by regulation fishery management plans that provide the Department of Fish and Game with guidelines to be followed when making management decisions regarding the state's subsistence, commercial, sport and personal use fisheries. The primary goal of these management plans is to protect the sustained yield of the state's fishery resources while at the same time providing an equitable distribution of the available harvest between various users. The regulations contained in this section are intended to aid in the achievement of that goal and therefore will apply to all fishery management plans contained in 5 AAC 03-5 AAC 39.

(b) In some fishery management plans, the distribution of harvestable fish between various users is determined by the harvest that occurs during a specific time period, at a specific location, or by a specific group or groups of users. At times fishermen, due to circumstances that are beyond the control of the department, such as weather or price disputes, will not harvest fish. When this happens in a fishery governed by a management plan, the goals of the plan may not be achieved. Therefore, when a fishery is open to the taking of fish and the group or groups of users whose catch determines the distribution of the harvest as set out in the applicable management plan are not taking the harvestable fish available to them, the department shall manage the fishery as if the available harvest is being taken. When determining the available harvest, the department shall consider the number of fish needed to meet spawning requirements, the number of fish present in the fishery and in spawning areas that are in excess to spawning requirements, and the estimated harvesting capacity of the group or groups of users that would normally participate in the fishery.

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