

SOUTHEASTERN DISTRICT MAINLAND (ALASKA PENINSULA AREA)  
SALMON MANAGEMENT PLAN, 1993

By

James N. McCullough  
and  
Rodney D. Campbell

Regional Information Report<sup>1</sup> No. 4K93-6

Alaska Department of Fish and Game  
Division of Commercial Fisheries  
211 Mission Road  
Kodiak, Alaska

March 1993

<sup>1</sup>The Regional Information Report Series was established in 1987 to provide an informational access system for all unpublished divisional reports. These reports frequently serve diverse ad hoc informational purposes or archive basic uninterpreted data. To accommodate timely reporting of recently collected information, reports in this series undergo only limited internal review and may contain preliminary data; this information may be subsequently finalized and published in the formal literature. Consequently, these reports should not be cited without prior approval of the author or the Division of Commercial Fisheries.

## TABLE OF CONTENTS

	<u>Page</u>
LIST OF TABLES .....	i
LIST OF FIGURES .....	i
LIST OF APPENDICES .....	i
MANAGEMENT PLAN .....	1
Southeastern District Mainland .....	1
Local Stocks .....	6
Northwest Stepovak Section .....	6
Stepovak Flats Section .....	8
LITERATURE CITED .....	10
APPENDIX .....	11

## LIST OF TABLES

<u>Table</u>	<u>Page</u>
1. Southeastern District Mainland fishery catch of Chignik destined sockeye salmon through July 25, 1983-92 .....	4
2. Sockeye salmon 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 .....	2
2. Map of the Southeastern District Mainland area from Kupreanof Point to McGinty Point with the salmon sections defined .....	3
3. Map of Stepovak Bay with Dent Point defined .....	7

## LIST OF APPENDICES

<u>Appendix</u>	<u>Page</u>
A. Southeastern District Salmon Management Plan .....	12
B. Chignik (Preliminary) Forecast of the 1993 Run .....	14
C. Application of Fishery Management Plans .....	16

## MANAGEMENT PLAN

### *Southeastern District Mainland*

The Southeastern District Mainland (Balboa-Stepovak) fishery (Figure 1-2) will be managed according to the Southeastern District Management Plan (Appendix A) as adopted by the Alaska Board of Fisheries during the November 1991 meeting.

The East Stepovak, Northwest Stepovak (except Orzinski Bay), Southwest Stepovak, Balboa Bay, and Beaver Bay Sections will be managed on the basis of the interception of Chignik River sockeye salmon. Orzinski Bay (all waters north of a line from Elephant Point 55°41'50" N.lat., 160°03'18" W.long. to Waterfall Point 55°43'10" N.lat., 160°01'08" W.long. as based on 1983 datum charts) in the Northwest Stepovak Section and the Stepovak Flats Section will be managed on a local stock basis, Orzinski Bay on the basis of the Orzinski Lake sockeye salmon stock and the Stepovak Flats Section on the basis of the Stepovak River chum salmon stock.

When possible, fishing periods in Orzinski Bay and Stepovak Flats will coincide with fishing periods in the remainder of the Southeastern District Mainland fishery to avoid concentrating fishing gear. Through July 25 (the time period covered by the Southeastern District Management Plan), no attempt will be made to coincide fishing periods in the Southeastern District Mainland area with any other nearby fisheries. All fishing periods will be announced by emergency orders. At least 36 hours notice will be given prior to the first commercial fishing period in the fishery. At least 24 hours notice will be given prior to the opening of any other fishing period, unless it is an extension of a fishing period in progress.

In the Southeastern District Mainland area, set gill net gear is the only legal gear type allowed through midnight July 10, while after July 10, set gill net, purse seine, and hand purse seine gear types are allowed.

The forecasted midpoint harvest for the Chignik sockeye salmon runs for 1993 are 1,200,000 salmon for the early run and 700,000 salmon for the second run (Appendix B). If the runs come in as expected and the goals of the management plan are achieved, about 100,000 estimated Chignik destined sockeye salmon will be harvested in the Southeastern District Mainland area prior to July 26. This compares to the recent five-year average of 79,792 and 10-year average of 136,573 (Table 1).

The total Chignik sockeye salmon catch is 100% of those sockeye salmon caught within the Chignik Management Area, plus 80% of those sockeye salmon caught in the Cape Igvak Section of the Kodiak Management Area, plus 80% of those sockeye salmon caught in the Southeastern District Mainland fishery excluding 100% of those sockeye salmon caught in Orzinski Bay.

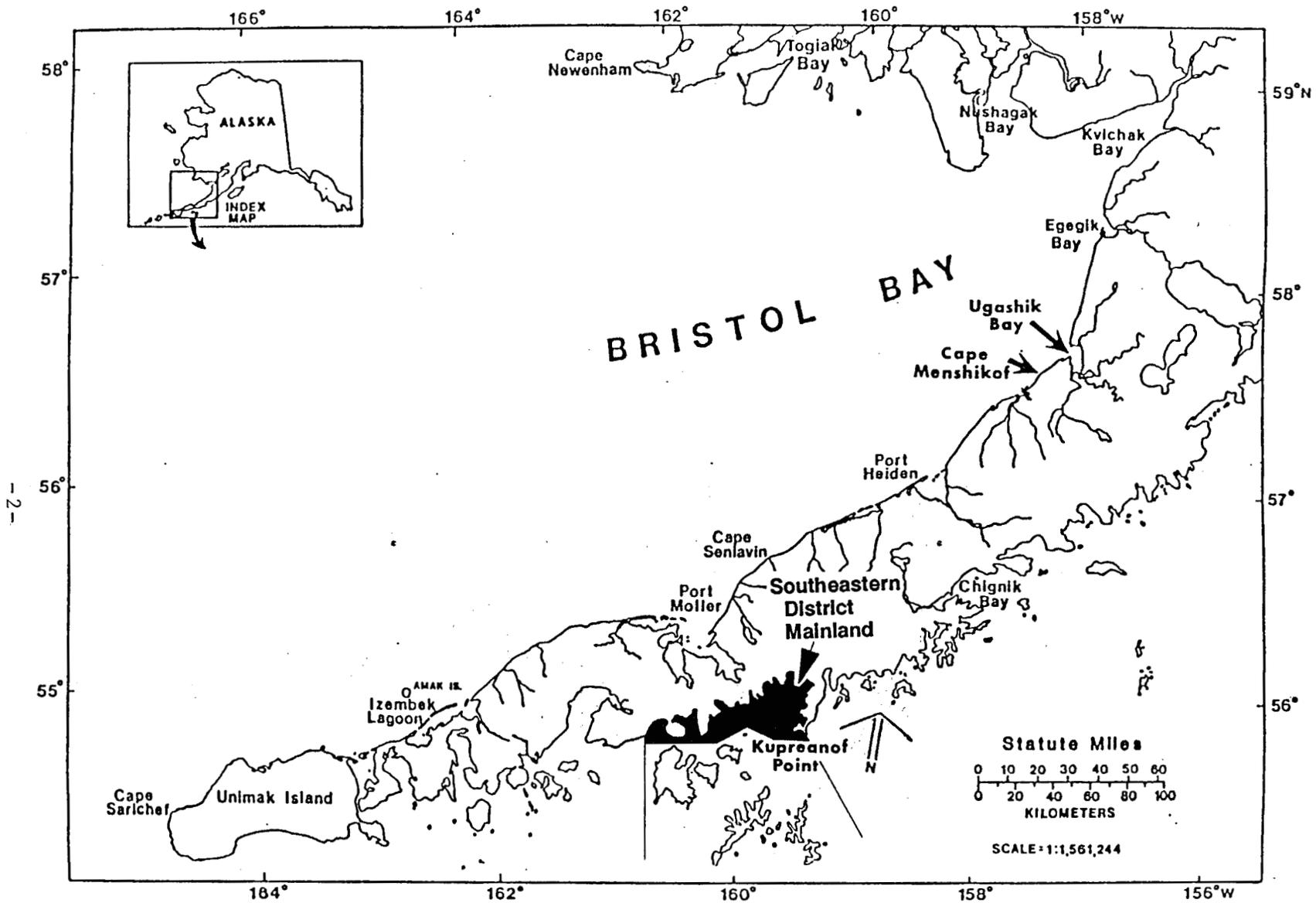


Figure 1. Map of the Alaska Peninsula Management Area with the Southeastern District Mainland area defined.

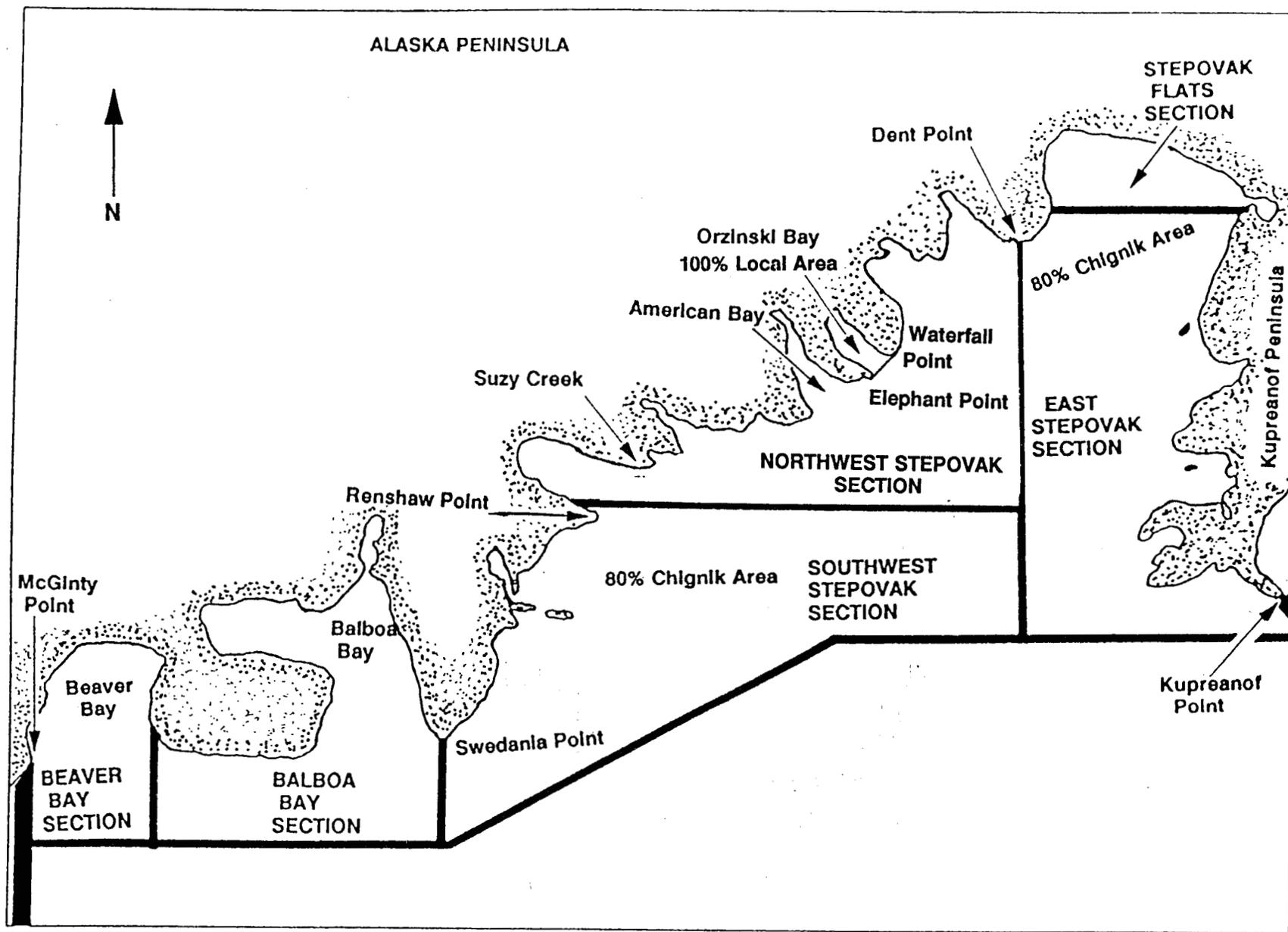


Figure 2. Map of the Southeastern District Mainland fishery from Kupreanof Point to McGinty Point with the salmon sections defined.

Table 1. Southeastern District Mainland fishery catch of Chignik destined sockeye salmon through July 25, 1983-92.<sup>1</sup>

Year	Number of Salmon			
	Total Catch	Northwest Stepovak <sup>2</sup>	Total Catch Minus Northwest Stepovak	Chignik Bound Catch <sup>1</sup>
1983	300,158	15,918	284,240	227,392
1984	595,043	66,209	528,834	423,067
1985	80,957	16,681	64,276	51,421
1986	206,532	59,025	147,507	118,006
1987	244,895	61,287	183,608	146,886
1988	81,160	57,010	24,150	19,320
1989	89,224	83,618	5,606	4,484
1990	164,028	3,279	160,749	128,599
1991	289,727	98,834	190,893	152,714
1992	215,444	98,138	117,306	93,845
Average:				
5 Year	167,917	68,176	99,741	79,792
10 Year	226,717	56,000	170,717	136,573

<sup>1</sup>From 1970-91, the Chignik contribution is 80% of the sockeye salmon harvested in Beaver Bay, Balboa Bay, Southwest Stepovak, Stepovak Flats, and East Stepovak Sections. In 1992, 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>2</sup>From 1970-91, the Northwest Stepovak Section figures include the harvest from the entire Northwest Stepovak Section. In 1992 the figure includes only the Orzinski Bay harvest.

Because the harvestable surplus is expected to exceed 600,000 sockeye salmon, the Southeastern District Mainland fishery may open when the fishery opens in the Chignik Management Area. Based on the 1,200,000 sockeye salmon early run harvest forecast, it is possible that the first opening for the Southeastern District Mainland fishery could be in early to mid-June.

If the first run fails to develop as expected, the Southeastern District Mainland fishery will be curtailed in order to allow a minimum harvest in the Chignik Area of at least 300,000 sockeye through July 8, if that many salmon are surplus to escapement requirements.

During the period from about June 26 through July 9, the strength of the second run of Chignik River sockeye salmon cannot be evaluated at Chignik. To prevent over-harvest of the second run, commercial salmon fishing in the Southeastern District will, at the Alaska Department of Fish and Game's (ADF&G) discretion, be disallowed or severely restricted during this period.

After July 8, fishing time in the Southeastern District Mainland fishery will be dependent upon the strength of the second run as evaluated at Chignik and on the catch of Chignik bound sockeye during the first run at Cape Igvak, Chignik, and the Southeastern District Mainland fisheries. When the second run escapement goals are being met and the second run appears strong enough for a fishery at Chignik, the Southeastern District Mainland may open to commercial salmon fishing if at least 300,000 combined first and second run sockeye salmon were harvested in the Chignik Area. ADF&G will manage the fishery so that the number of sockeye salmon harvested in the Chignik Area from both runs combined will be at least 600,000 salmon and the harvest in the Southeastern District Mainland will approach as near as possible 7.0% of the total Chignik bound sockeye salmon catch (Appendix C), if that many sockeye salmon are surplus to escapement requirements.

The fishery shall be managed according to the plan as stated in the 1992-1994 Bristol Bay and Westward Alaska commercial salmon fishing regulation book (Appendix A). No attempt will be made to allow equal fishing time with Chignik, as had been done from 1974 through 1977, but rather the end goal will be to meet the 7.0% allocation level after the conditions of the management plan have been satisfied. An interim management goal of 7.0% at midnight July 10 will also be attempted after the conditions of the management plan have been satisfied. The interim management goal of 7.0% at midnight July 10 is desirable to achieve historical harvest levels between set gill net and purse seine fishermen; purse seine gear is legal in the fishery after July 10. To meet the goal of 7.0% by July 11 and July 25, the percentage may fluctuate above or below 7.0% prior to July 11 and July 25. Because of the restrictions placed upon the Southeastern District Mainland fishery to protect the Chignik runs, it may not be possible to achieve a 7.0% allocation level, even though escapement goals are met and the minimum catch level of 600,000 salmon at Chignik is exceeded.

The Southeastern District Mainland fishery is regulated by a management plan that is independent of other fisheries occurring in the Alaska Peninsula Management Area. Because the fishery is primarily effected by sockeye salmon catches in the Kodiak and Chignik Management Areas, while being independent of other Alaska Peninsula Management Area fisheries except for fishing effort, the Southeastern District Mainland area will have independent fishing periods from those in the Shumagin Islands Section and other areas of the South Peninsula. ADF&G will attempt to have fishing periods in Orzinski Bay and Stepovak Flats concurrent with other fishing periods in the Southeastern District Mainland area.

There has been confusion for several years concerning the definition of Dent Point. A map of the Dent Point area is found on Figure 3. The Alaska Board of Fisheries approved definition of Dent Point is 55° 47'15" N. lat., 159° 52'00" W. long. (based on 1983 datum chart). This definition of Dent Point will be used as: (1) the boundary between the Northwest Stepovak and Stepovak Flats Sections; (2) as one of the closed waters points for Stepovak Bay when the head of Stepovak Bay is closed from July 29 through September 30; and (3) whenever an ADF&G reference is made regarding Dent Point.

### ***Local Stocks***

Orzinski Bay in the Northwest Stepovak Section and the Stepovak Flats Section will be managed on a local stock basis. Orzinski Bay will be managed on the basis of the Orzinski Lake sockeye salmon stock from June 1 through about July 25, and after about July 25 on local sockeye and pink salmon runs. The Stepovak Flats Section will be managed on the basis of the Stepovak River chum salmon stock. The entire Southeastern District Mainland area will be managed on the basis of local stocks (sockeye, pink, chum, and coho salmon) after July 25.

#### **Northwest Stepovak Section**

The sockeye escapement goal for Orzinski (Orzenoi) Lake is 20,000 salmon as estimated from the production potential of the lake (A.R. Shaul, Alaska Department of Fish and Game, Kodiak, personnel communication). In 1992, the total estimated sockeye escapement was 25,000 salmon. ADF&G intends to operate a weir on the Orzinski system in 1993, similar to the 1992 weir.

A weir was used to count escapements into the lake from 1935 to 1941, and in 1990-92. The earliest recorded sockeye escapement occurred on June 11, 1940 (11 salmon), while the usual pattern of first entry into the lake is about June 17. July 17 is the average date of 50% cumulative sockeye escapement, while on the average

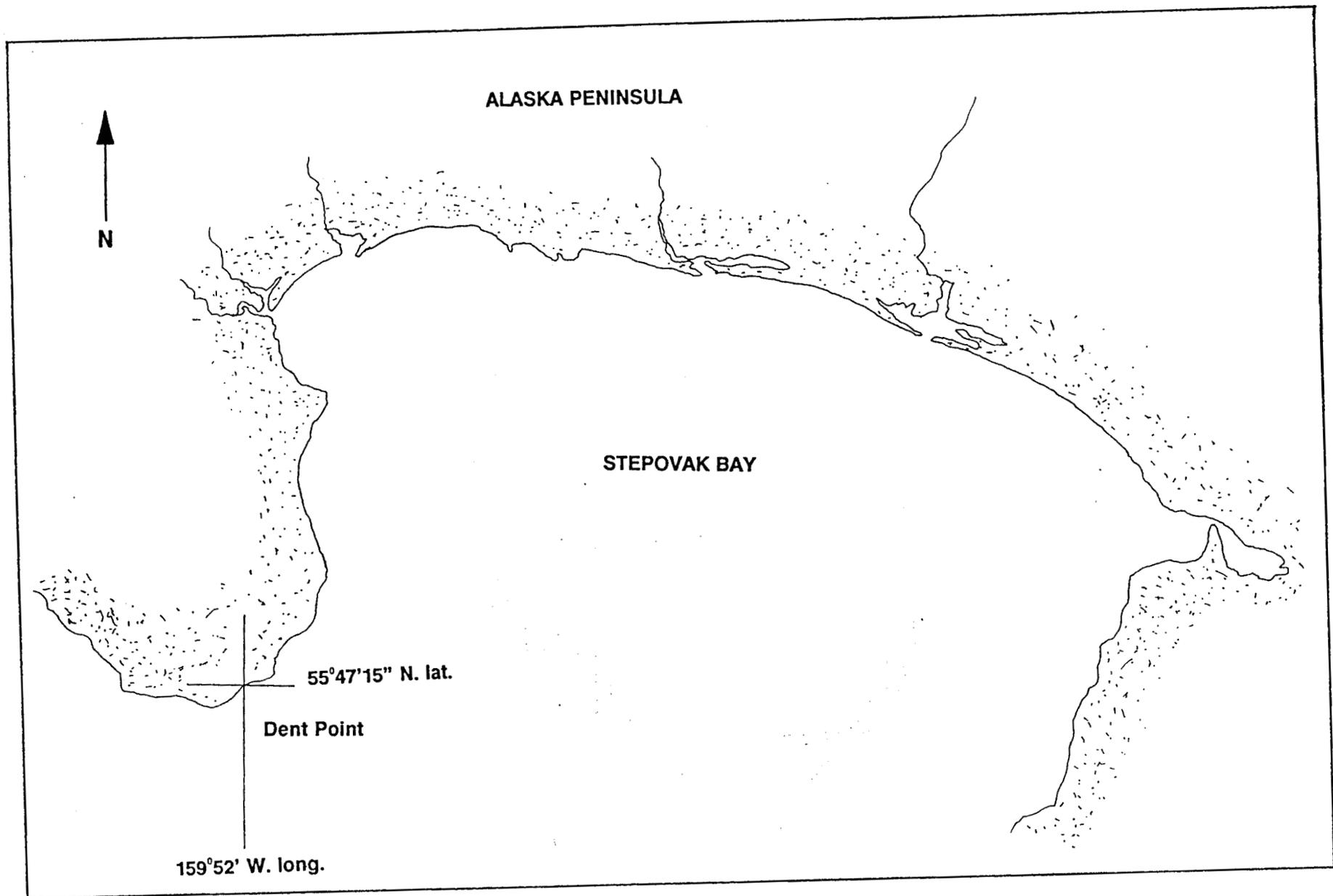


Figure 3. Map of Stepovak Bay with Dent Point defined.

99% of the escapement occurs by August 7. Based on aerial surveys and weir counts, sockeye salmon escapement requirements for Orzinski Lake by time periods has been developed (Table 2).

Through July 25, 1992, Orzinski Bay will have fishing periods basis on the Orzinski Lake sockeye salmon weir counts. Sockeye salmon caught within Orzinski Bay (north of a line from Elephant Point at 55°41'50" N.lat., 160°03'18" W.long. to Waterfall Point at 55°43'10" N.lat., 160°01'08" W.long.) will be allocated 100% to the Orzinski Lake run. Sockeye salmon caught in the remainder of the Southeastern District Mainland fishery will be allocated 80% to the Chignik system runs. After July 25, fishing time will be based on local sockeye, pink, chum, and coho salmon stocks. If the sockeye salmon escapement goals into Orzinski Lake are not met, Orzinski Bay will be closed north of a line from Elephant Point (55°41'50" N.lat., 160°03'18" W.long.) to Waterfall Point (55°43'10" N.lat., 160°01'08" W.long.), until management of the bay shifts to pink salmon.

### **Stepovak Flats Section**

The Stepovak Flats Section will be managed on the basis of the chum salmon run into Stepovak River (local stock basis). Through July 11, this section will open to commercial salmon fishing on a day per day basis with the remainder of the Southeastern District Mainland fishery. Sockeye harvested in this section will be assigned as 80% Chignik bound and are included as part of the 7.0% allocation criteria set forth in the Southeastern District Mainland management plan. After July 10, the Stepovak Flats Section will be managed on the basis of the chum salmon run into Stepovak River. Fishermen are reminded that this section is usually closed to commercial salmon fishing from July 29 through September 30 (5 AAC 09.350(23)).

Table 2. Sockeye salmon escapement requirements for Orzinski Lake.

Time Period	Cumulative Escapement Goal
June 15	0
July 1	2,000
July 9	5,000
July 16	10,000
July 23	15,000
August 7	20,000
Season Total	20,000

## LITERATURE CITED

- ADF&G (Alaska Department of Fish and Game). 1992. 1992-1994 Bristol Bay and Westward Alaska commercial fishing regulations salmon and miscellaneous finfish, 1992 edition. Alaska Department of Fish and Game, Division of Commercial Fisheries, Juneau.
- Shaul, A.R., J.N. McCullough, M.E. Stopha, R.S. Bercelli, R.L. Murphy, R.D. Campbell, and P.B. Holmes. *In Press*. Alaska Peninsula, Aleutian Islands, and Atka-Amlia Management Areas Salmon Annual Management Report, 1992. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report, Kodiak.

APPENDIX

## APPENDIX A: SOUTHEASTERN DISTRICT SALMON MANAGEMENT PLAN

---

### 5 AAC 09.360. SOUTHEASTERN DISTRICT 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) north of a line in Orzinski Bay from Elephant Point (55° 41'50" N.lat., 160° 03'18" W.long.) to Waterfall Point (55° 43'10" N.lat., 160° 01'08" W.long.) and:
- 2) the Stepovak Flats Section as described in 5 AAC 09.200(f).

(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, Northwest Stepovak (except Orzinski Bay), Southwest Stepovak, Balboa Bay, and Beaver Bay Sections, as described in 5 AAC 09.200(f), until a harvest of 300,000 sockeye salmon in the Chignik Area, as described in 5 AAC 15.100, is achieved. 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 East Stepovak, Stepovak Flats, Northwest Stepovak (except Orzinski Bay), Southwest Stepovak, Balboa Bay, and Beaver Bay Sections approaches as near as possible seven 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, Northwest Stepovak (except Orzinski Bay), Southwest Stepovak, Balboa Bay, and Beaver Bay Sections must be curtailed in order to allow at least a minimum harvest in the Chignik Area of 300,000 sockeye salmon by July 9 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 East Stepovak, Stepovak Flats, Northwest Stepovak (except Orzinski Bay), Southwest Stepovak, Balboa Bay, and Beaver Bay Sections approaches as near as possible seven 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 sockeye salmon taken in the East Stepovak, Stepovak Flats, Northwest Stepovak (except Orzinski Bay), Southwest Stepovak, Balboa Bay, and Beaver Bay Sections approaches as near as possible seven percent of the total Chignik sockeye salmon catch.

(e) 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, Northwest Stepovak (except Orzinski Bay), Southwest Stepovak, Balboa Bay, and Beaver Bay Sections. The remaining sockeye salmon taken in the Southeastern District Mainland fishery have been determined to be destined for Orzinski Bay.

(f) 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, Northwest Stepovak (except Orzinski Bay), Southwest Stepovak, Balboa Bay, and Beaver Bay Sections, 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 seven percent at any time before July 25.

(g) This allocation method is in effect through July 25. The first fishing period of the commercial salmon fishing season in the East Stepovak, Northwest Stepovak (except Orzinski Bay), Southwest Stepovak, Balboa Bay, and Beaver Bay Sections 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.

(h) During the period from approximately June 26 to July 9, 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, Northwest Stepovak (except Orzinski Bay), Southwest Stepovak, Balboa Bay, and Beaver Bay Section during this period.

(i) The department shall announce all commercial salmon fishing periods by emergency order. The department shall give at least 24 hour notice before the opening of a commercial salmon fishing period, unless it is an extension of a fishing period in progress.

## APPENDIX B: CHIGNIK MANAGEMENT AREA PRELIMINARY SOCKEYE FORECAST

---

### CHIGNIK MANAGEMENT AREA PRELIMINARY SOCKEYE FORECAST

FORECAST AREA: Chignik Management Area

SPECIES: Sockeye Salmon

#### PRELIMINARY FORECAST OF THE 1993 RUN

<u>Early Run</u> (Black Lake)	<u>Point Estimate</u>	<u>80% Prediction Forecast Range</u>
Escapement Goal:	400,000	
Harvest Estimate:	1,200,000	
Return Estimate:	1,640,000	1,120,000 - 2,160,000
 <u>Late Run</u> (Chignik Lake)		
Escapement Goal:	250,000	
Harvest Estimate:	700,000	
Return Estimate:	950,000	620,000 - 1,620,000
 <u>Total Chignik Run</u>		
Escapement Goal:	650,000	
Harvest Estimate:	1,900,000	
Return Estimate:	2,590,000	1,740,000 - 3,780,000

#### FORECAST METHODS:

The estimated run to Black Lake is the sum of a regression estimate for two major age classes (ages 1.3 and 2.3) and a 10-year average for minor age classes, while the Chignik Lake run is based on a recruit per spawner relationship. The Black Lake forecast is based on the historical relationship between the number and length of prior year age 1.2 fish, and the parent year escapement number. All other age classes are predicted from a 10-year average. The Chignik Lake forecast accuracy has historically been quite variable and developing a model such as the one used for the Black Lake run has been unsuccessful. The Chignik Lake run forecast for 1993 was derived using an average return per spawner ( $R/S = 4.41$ ) for years post-1969.

## DISCUSSION OF THE 1993 FORECAST:

### Early Run

The 1993 Black Lake sockeye salmon run is expected to be 1.64 million fish. This is approximately 0.10 million fish less than the 1982-91 average run of 1.74 million fish and 200,000 fish less than the 1992 forecast. This below average run is expected because in 1992 age 1.2 fish numbered 33,005 less than the 10 year average of 175,456.

### Late Run

The estimated 1993 Chignik Lake sockeye run is 0.95 million fish, 20,000 less than the 1982-91 average of 1.15 million fish. The Chignik Lake run forecast accuracy has historically been quite poor when compared to actual returns. The 1987 parent year, which is expected to produce 60% of the 1993 run, was 35,548 below the 250,000 desired escapement goal.

Prepared By:

Alan Quimby  
Area Management Biologist  
Chignik Area ADF&G

Dave Owen  
Assistant Area Biologist  
Chignik Area ADF&G

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

---

### **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.

The Alaska Department of Fish and Game administers all programs and activities free from discrimination based on race, color, national origin, age, sex, religion, marital status, pregnancy, parenthood, or disability. The department administers all programs and activities in compliance with Title VI of the Civil Rights Act of 1964, Section 504 of the Rehabilitation Act of 1973, Title II of the Americans with Disabilities Act of 1990, the Age Discrimination Act of 1975, and Title IX of the Education Amendments of 1972.

If you believe you have been discriminated against in any program, activity, or facility, or if you desire further information please write to ADF&G, P.O. Box 25526, Juneau, AK 99802-5526; U.S. Fish and Wildlife Service, 4040 N. Fairfax Drive, Suite 300 Webb, Arlington, VA 22203 or O.E.O., U.S. Department of the Interior, Washington DC 20240.

For information on alternative formats for this and other department publications, please contact the department ADA Coordinator at (voice) 907-465-6077, (TDD) 907-465-3646, or (FAX) 907-465-6078.