

**PRINCE WILLIAM SOUND MANAGEMENT AREA  
2002 ANNUAL FINFISH MANAGEMENT REPORT**



**By:  
Dan Gray  
Dan Ashe  
J. Johnson  
Richard Merizon  
Steve Moffitt**

**Regional Information Report No. 2A03-30**

**Alaska Department of Fish and Game  
Division of Commercial Fisheries  
333 Raspberry Road  
Anchorage, Alaska 99518**

**December 2003**

<sup>1</sup> Contribution 2A03-30 from the Prince William Sound area. The Regional Information Report Series was established in 1987 to provide an information access system for all unpublished Divisional reports.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 Commercial Fisheries Division.

## **AUTHORS**

Dan Gray is the Prince William Sound area finfish management biologist for the Alaska Department of Fish and Game, Commercial Fisheries Division, P.O. Box 669, Cordova, Alaska, 99574.

Dan Ashe is the Copper River area finfish management biologist for the Alaska Department of Fish and Game, Commercial Fisheries Division, P.O. Box 669, Cordova, Alaska, 99574.

J. Johnson is the Prince William Sound assistant area finfish management biologist for the Alaska Department of Fish and Game, Commercial Fisheries Division, P.O. Box 669, Cordova, Alaska, 99574.

Richard Merizon is the Prince William Sound area assistant finfish research biologist for the Alaska Department of Fish and Game, Commercial Fisheries Division, P.O. Box 669, Cordova, Alaska, 99574.

Steve Moffitt is the Prince William Sound area finfish research project leader for the Alaska Department of Fish and Game, Commercial Fisheries Division, P.O. Box 669, Cordova, Alaska, 99574.

## ACKNOWLEDGEMENTS

The authors gratefully acknowledge the entire staff of the Cordova office of the Alaska Department of Fish and Game for their many contributions that are essential to the management of the various fisheries and the completion of his report.

### PERMANENT EMPLOYEES WITH THE COMMERCIAL FISHERIES DIVISION

Dan Ashe	Gillnet Management Biologist
Dan Gray	Purse Seine Management Biologist
Jay Johnson	Asst. Purse Seine Mngt. Biologist
Jo Mala	Office Administration
Rick Merizon	Asst. Finfish Research Biologist
Steve Moffitt	Finfish Area Research Biologist

### SEASONAL EMPLOYEES WITH THE COMMERCIAL FISHERIES DIVISION

<u>Name:</u>	<u>Job Class:</u>	<u>Project / Title:</u>
Jane Allen	FWT II	Otolith Lab Technician
Karl Becker	FWT II	Miles Lake Sonar Technician
Jane Browning	FB I	Miles Lake Sonar Crew Leader
Denise Branshaw	Administrative Clerk II	Fish Ticket Clerk Office Admin.
Felipe Carillo	FB I	Otolith Lab Project Leader
Carl Coulliette	FWT II	Lower River Test Fish/Coghill Lake Weir
Al Cox	FWT II	Coded Wire Tag / Otolith Recovery
Melanie Guerrero	FWT II	Coded Wire Tag / Otolith Recovery
Don Malherek	FWT II	Miles Lake Sonar Technician
Brian Marston	FB I	Asst. Research Biologist
Bella Masolini	FWT II	Age, Weight, and Length Technician
Peter Masolini	FWT II	Eshamy Lake Weir
Ben Mulligan	FWT II	Lower River Test Fish
John Norris	FWT II	Coghill Lake Weir Crew Leader
Jim O'Rourke	FWT II	Age, Weight, and Length Technician
Galahad Sinese	FWT II	Coded Wire Tag Technician
Heather Slazak	FWT II	Age, Weight, and Length Technician
Nancy Speer	FWT III	Age, Weight, and Length Crew Leader
Justin Stoltzfus	FWT II	Coded Wire Tag / Otolith Recovery
Ken Vartan	FWT II	Eshamy Lake Weir Crew Leader

# TABLE OF CONTENTS

	<u>Page</u>
LIST OF TABLES .....	vi
LIST OF FIGURES.....	vii
LIST OF APPENDICES.....	viii
 PRINCE WILLIAM SOUND AND COPPER RIVER COMMERCIAL SALMON FISHERIES .....	  1
MANAGEMENT AREA DESCRIPTION.....	1
OVERVIEW OF AREA WIDE FISHERIES.....	2
SALMON SEASON SUMMARY BY DISTRICT.....	2
COPPER RIVER DISTRICT .....	2
Preseason Outlook and Harvest Strategy.....	4
Sockeye and Chinook Salmon Fishery Season Summary .....	4
Coho Salmon Fishery Season Summary .....	6
BERING RIVER DISTRICT .....	8
Preseason Outlook and Harvest Strategy.....	8
Sockeye Salmon Season Summary.....	8
Coho Salmon Season Summary.....	9
COGHILL DISTRICT (Prior to July 21) .....	10
Preseason Outlook and Harvest Strategy.....	10
Season Summary .....	10
UNAKWIK DISTRICT .....	12
ESHAMY DISTRICT .....	12
Preseason Outlook and Harvest Strategy.....	12
Season Summary.....	13
GENERAL PURSE SEINE DISTRICTS .....	15
Preseason Outlook and Harvest Strategy.....	15
Chum Salmon Season Summary .....	16
Pink Salmon Season Summary.....	17
Eastern District.....	18
Southeastern District.....	19
Southwestern District.....	19
Northern District .....	20
Montague District.....	21
Coghill District.....	21
Coho Salmon.....	22
Conclusions and Recommendations.....	23
 PRINCE WILLIAM SOUND AND COPPER RIVER SUBSISTENCE FISHERIES.....	 24
PRINCE WILLIAM SOUND AND LOWER COPPER RIVER .....	24
EASTERN AND SOUTHWESTERN DISTRICT SUBSISTENCE FISHERIES .....	25
UPPER COPPER RIVER.....	25
GLENNALLEN SUBDISTRICT.....	25
CHITINA SUBDISTRICT .....	26
BATZULNETAS.....	26

**TABLE OF CONTENTS (Continued)**

PRINCE WILLIAM SOUND HERRING FISHERIES ..... 27  
    PRESEASON OUTLOOK AND HARVEST STRATEGY ..... 27  
    SEASON SUMMARY ..... 28  
    2002-2003 HERRING SEASON OUTLOOK ..... 29

LITERATURE CITED ..... 30

## LIST OF TABLES

	<u>Page</u>
1. Total commercial salmon harvest by species, gear type, and district in the Prince William Sound Management Area, 2002 .....	32
2. Total commercial salmon harvest by species from all gear types, Prince William Sound Area, 1971 - 2002.....	33
3. Mean price and estimated exvessel value of the total commercial salmon harvest by gear type, Prince William Sound, 2002 .....	34
4. Average price paid to permit holders for salmon, Prince William Sound, 1993 – 2002.....	35
5. Estimated exvessel value of the total commercial salmon harvest by gear type, Prince William Sound, 1992 -2002.....	36
6. Preseason harvest projections for the 2002 commercial salmon fishery by district and species, Prince William Sound Area.....	37
7. A listing of finfish processors, their location of operation, and type of product processed, Prince William Sound Area, 2002 .....	38

## LIST OF FIGURES

	<u>Page</u>
1. Prince William Sound Management Area showing commercial fishing districts, salmon hatcheries, weir locations, and Miles Lake sonar camp .....	40
2. Commercial salmon harvest by species for all gear types combined, Prince William Sound, 1971 - 2002.....	41
3. Exvessel value of the commercial salmon harvest by gear type, 1992 - 2002 .....	42
3. Prince William Sound Area showing commercial fishing districts and statistical reporting areas, 2002.....	43

## LIST OF APPENDICES

	<u>Page</u>
APPENDIX A: COPPER AND BERING RIVER DISTRICTS	
A.1. Anticipated versus actual daily and cumulative salmon escapement, Miles Lake sonar, 2002 .....	45
A.2. Total commercial salmon harvest by species in the Copper River District, 1974-2002 .....	46
A.3. Daily sockeye salmon escapement at Miles Lake sonar, 2002 .....	47
A.4. Anticipated and actual semi-weekly harvest and escapement of sockeye salmon in the Copper River District drift gillnet fishery, 2002 .....	49
A.5. Copper River and Bering River area sockeye salmon escapement indices, 1993 - 2002 .....	50
A.6. Measured water stage height at the Million Dollar Bridge from 1982 – 2002.....	51
A.7. Anticipated and actual weekly harvest of chinook salmon in the Copper River District drift gillnet fishery, 2002 .....	52
A.8. Total commercial salmon harvest by period in the Copper River District drift gillnet fishery, 2002 .....	53
A.9. Aerial escapement indices by date and location for sockeye salmon returning to the Copper River Delta, 2002 .....	54
A.10. Anticipated and actual weekly harvest of coho salmon in the Copper River District drift gillnet fishery, 2002 .....	58
A.11. Aerial escapement indices by date and location for coho salmon returning to the Copper River Delta, 2002 .....	59
A.12. Copper River Delta and Bering River coho salmon escapement indices, 1992 - 2002 .....	62
A.13. Summary of periods and emergency orders issued for the commercial salmon drift gillnet fisheries in the Bering and Copper River Districts, 2002 .....	63
A.14. Total commercial salmon harvest by species in the Bering River District, 1973 – 2002.....	64

## LIST OF APPENDICES (Continued)

	<u>Page</u>
A.15. Aerial escapement indices by date and location for sockeye salmon returning to the Bering River Delta, 2002.....	65
A.16. Aerial escapement indices by date and location for coho salmon returning to the Bering River Delta, 2002.....	67
A.17. Total commercial salmon harvest by period in the Bering River District drift gillnet fishery, 2002.....	68
A.18. Anticipated and actual weekly harvest and escapement of coho salmon in the Bering River District drift gillnet fishery, 2002.....	69
A.19. Copper River District area closed to chinook salmon harvest during the first two commercial fishing periods, 2002.....	70
A.20. Upper Copper River chinook salmon aerial escapement index counts, 1977-2002.....	71
A.21. Aerial survey indices of sockeye salmon escapement to the upper Copper River drainage, 1993 - 2002.....	72
A.22. Temporally stratified age and sex composition of sockeye salmon harvested in the Copper River District commercial common property drift gillnet fishery, 2002.....	73
A.23. Temporally stratified age and sex composition of chinook salmon harvested in the Copper River District commercial common property drift gillnet fishery, 2002.....	74
A.24. Temporally stratified age and sex composition of coho salmon harvested in the Copper River District commercial common property drift gillnet fishery, 2002.....	75
 APPENDIX B: COGHILL AND UNAKWIK DISTRICTS	
B.1. Total commercial common property salmon harvest by period in the Coghill District drift gillnet and purse seine fisheries, 2002.....	77
B.2. Total commercial common property salmon harvest by species in the Coghill District, 1983 - 2002.....	79

## LIST OF APPENDICES (Continued)

	<u>Page</u>
B.3. Daily salmon escapement past the Coghill River weir, 2002 .....	82
B.4. Anticipated daily and cumulative sockeye salmon escapement versus actual escapement past the Coghill River weir, 2002 .....	84
B.5. Salmon escapement by species in the Coghill District, 1970 - 2002.....	85
B.6. Summary of periods, dates, duration, and emergency orders issued for the commercial salmon fisheries in the Coghill and Unakwik Districts, 2002 .....	86
B.7. Temporally stratified age and sex composition of sockeye salmon harvested in the Coghill District commercial common property drift gillnet fisheries, 2002.....	88
B.8. Temporally stratified age and sex composition of sockeye salmon escapement through the weir on the outlet stream of Coghill Lake, 2002 .....	89
B.9. Total commercial common property salmon harvest by period in the Unakwik District drift gillnet and purse seine fisheries, 2002.....	90
B.10. Total commercial common property salmon harvest by species in the Unakwik District, 1990 - 2002 .....	91
APPENDIX C: ESHAMY DISTRICT	
C.1. Total commercial salmon harvest by period in the Eshamy District drift and set gillnet fisheries, 2002 .....	95
C.2. Summary of periods, dates, duration, and emergency orders issued for the commercial common property salmon fisheries in the Eshamy District, 2002.....	97
C.3. Estimated age and sex composition of sockeye salmon harvested in the Eshamy District commercial common property gillnet fishery, 2002.....	99
C.4. Estimated age and sex composition of the sockeye salmon escapement past the Eshamy River weir, 2002 .....	100
C.5. Daily salmon escapement through the Eshamy weir, 2002 .....	101

## LIST OF APPENDICES (Continued)

	<u>Page</u>
C.6. Anticipated daily and cumulative sockeye salmon escapement versus actual escapement past the Eshamy River weir, 2002 .....	103
C.7. Total commercial common property salmon harvest by species in the Eshamy District, 1987 – 2002 .....	104
C.8. Salmon escapement by species past the Eshamy River weir, 1967 - 2002 .....	105
 APPENDIX D: PRINCE WILLIAM SOUND PURSE SEINE DISTRICTS	
D.1. Prince William Sound commercial common property purse seine harvest by day, 2002.....	107
D.2. Total commercial salmon harvest by species, all gear and districts combined, 1971 - 2002 .....	109
D.3. Commercial common property pink salmon harvest for all gear types, by district, 1975 - 2002 .....	110
D.4. Aerial escapement indices for pink and chum salmon by district, 2002 .....	111
D.5. Pink salmon escapement indices by district, 1971 - 2002 .....	112
D.6. Weekly aerial survey indices of pink salmon escapement by statistical area, 2002.....	113
D.7. Current year and historical weekly pink salmon escapement performance of index spawning streams, 2002.....	115
D.8. Total chum salmon harvests and escapement indices, including hatchery sales harvests and broodstock, 1965 - 2002.....	116
D.9. Weekly aerial survey indices of chum salmon escapement by statistical area, 2002.....	117
D.10. Current year and historical weekly chum salmon escapement performance of index spawning streams, 2002 .....	119
D.11. Aerial survey escapement indices of sockeye salmon from selected systems, 2002.....	120

## LIST OF APPENDICES (Continued)

	<u>Page</u>
D.12. Temporally stratified age and sex composition of chum salmon harvested in the Prince William Sound commercial common property purse seine fishery, 2002.....	121
D.13. Summary of periods, dates, duration, and emergency orders issued by district, for the commercial purse seine salmon fishery, 2002.....	122
APPENDIX E: HATCHERY RETURNS	
E.1. Daily salmon sales harvests and sex ratios at the Wally Noerenberg Hatchery, 2002.....	127
E.2. Daily salmon sales harvests and sex ratios at the Armin F. Koernig Hatchery, 2002.....	129
E.3. Daily pink salmon sales harvests and sex ratios at the Solomon Gulch Hatchery, 2002.....	130
E.4. Daily pink salmon sales harvests and sex ratios at the Cannery Creek Hatchery, 2002.....	131
E.5. Daily salmon sales harvests at the Main Bay Hatchery, 2002.....	132
E.6. Sales harvests of salmon by species from private nonprofit hatcheries as reported on fish tickets, 1977 - 2002.....	133
E.7. Summary of pink and chum salmon runs to Prince William Sound hatcheries, 2002.....	134
E.8. Historical harvest contributions, thermally marked otolith releases, and total returns of pink salmon to Prince William Sound hatcheries, 1995 - 2002.....	135
E.9. Historical hatchery fry releases, harvest contributions, and total returns of pink salmon to all hatcheries combined, Prince William Sound, 1997-2002.....	137
E.10. Hatchery contributions to the commercial common property pink salmon purse seine fishery in the Eastern District, 2002.....	138

## LIST OF APPENDICES (Continued)

	<u>Page</u>
E.11. Hatchery contributions to the common property pink salmon purse seine fishery in the Northern District, 2002.....	139
E.12. Hatchery contributions to the common property pink salmon drift gillnet and purse seine fisheries in the Coghill District, 2002.....	140
E.13. Hatchery contributions to the commercial common property pink salmon drift and set gillnet fisheries in the Eshamy District, 2002. ....	141
E.14. Hatchery contributions to the commercial common property pink salmon purse seine fishery in the Southwestern District, 2002. ....	142
E.15. Hatchery contributions to the commercial common property pink salmon purse seine fishery in the Montague District, 2002.....	143
E.16. Hatchery contributions to the commercial common property pink salmon purse seine fishery in the Southeastern District, 2002. ....	144
E.17. Hatchery contributions to the commercial common property pink salmon drift gillnet and purse seine fisheries in the Unakwik District, 2002.....	145
 APPENDIX F: SUBSISTENCE AND PERSONAL USE FISHERIES	
F.1. Subsistence salmon harvest by species and gear type, Prince William Sound and Upper Copper River, 2002.....	147
F.2. Salmon harvest and effort in the Prince William Sound subsistence fishery, 1965 - 2002 .....	148
F.3. Salmon harvest and effort in the Copper River District subsistence gillnet fishery, 1965 - 2002 .....	149
F.4. Salmon harvest and effort in the Eastern District (Tatitlek) and Southwestern District (Chenega) subsistence fisheries, 1988 - 2002 .....	150
F.5. Salmon harvest by species and numbers of permits by gear type for the Upper Copper River subsistence and personal use fisheries, 1981 - 2002 .....	151
F.6. “Home Pack” salmon harvest by district, species and gear type, Prince William Sound Management Area, 2002 .....	153

## LIST OF APPENDICES (continued)

	<u>Page</u>
APPENDIX G: HERRING FISHERIES	
G.1. Location of spawning Pacific herring and miles of spawn observed during aerial surveys in Prince William Sound, 2002. ....	155
G.2. Prince William Sound commercial Pacific herring harvest by management year and fishery, 1968-2002 .....	156
G.3. Pacific herring sac roe purse seine and drift gillnet fishery effort, anticipated harvest, and actual harvest, Prince William Sound, 1969 - 2002 .....	157
G.4. Prince William Sound commercial Pacific herring sac roe purse seine and gillnet harvest by management year, 1968 - 2002 .....	158
G.5. Pacific herring spawn-on-kelp harvests from natural spawning, Prince William Sound, 1969 - 2002.....	159
G.6. Pacific herring spawn-on-kelp harvest produced in pounds, Prince William Sound, 1979 - 2002.....	160
G.7. Prince William Sound commercial spawn-on-kelp Pacific herring usage by management year, 1968 - 2002.....	161
G.8. Prince William Sound commercial Pacific herring food/bait fishery effort and harvests, management years 1969 - 2002.....	162
G.9. Prince William Sound commercial food/bait Pacific herring harvest, management years 1968 - 2002.....	164
G.10. Annual Pacific herring biomass indices for harvest management years 1973-2002.....	165
G.11. Prince William Sound annual Pacific herring biomass indices by management year, 1973 – 2002, and forecast run biomass for 2000 from ASA modeling .....	167
G.12. Mean price and estimated exvessel value of the commercial Pacific herring harvest by gear type based on verbal post season estimates from processors and permit holders, Prince William Sound, 1978 - 2002.....	168
G.13. Pacific Herring percentage contribution by weight of each age group to the spring run biomass, 1982 - 2002 .....	169

# **PRINCE WILLIAM SOUND AND COPPER RIVER COMMERCIAL SALMON FISHERIES**

## **MANAGEMENT AREA DESCRIPTION**

Prince William Sound (PWS) management area encompasses all coastal waters and inland drainages entering the northcentral Gulf of Alaska between Cape Suckling and Cape Fairfield (Figure 1). This area includes the Bering River, Copper River and all of Prince William Sound with a total adjacent land area of approximately 38,000 square miles.

The salmon management area is divided into eleven districts that correspond to local geography and distribution of the five species of salmon harvested by the commercial fishery. The management objective for all districts is the achievement of escapement goals for the major stocks while allowing for the orderly harvest of all fish surplus to spawning requirements. In addition, the department follows regulatory plans to manage fisheries and to allow private non-profit (PNP) hatcheries to achieve cost recovery and broodstock objectives.

Six hatcheries contribute to the area's fisheries. Prince William Sound Aquaculture Corporation (PWSAC) operates five of the hatcheries. Gulkana Hatchery in Paxson augments production of sockeye salmon in the Copper River. Cannery Creek Hatchery located on the north shore of PWS, and A.F. Koernig (AFK) Hatchery in southwestern PWS produce pink salmon, Wally Noerenberg Hatchery (WNH) in northwestern PWS produces pink, chum, and coho salmon and Main Bay Hatchery in western PWS produces sockeye salmon. Valdez Fisheries Development Association (VFDA) operates Solomon Gulch Hatchery in Port Valdez and produces pink and coho salmon.

Gear for the salmon fishery includes purse seine, drift and set gillnet. Drift gillnet permits are most numerous and are allowed in Bering River, Copper River, Coghill, Unakwik and Eshamy Districts. Set gillnet gear is allowed only in Eshamy District. Purse seine gear is allowed in Eastern, Northern, Unakwik, Coghill, Northwestern, Southwestern, Montague and Southeastern Districts.

As an avenue for the commercial fishing industry to formally provide management recommendations to the department, representatives from PWS area processors, gear groups, and aquaculture associations sit on an advisory body known as the PWS Salmon Harvest Task Force (SHTF).

Five herring fisheries occur during the year. Gillnet sac roe, purse seine sac roe, spawn-on-kelp not in pounds, and spawn-on-kelp in pounds fisheries occur in the spring. A herring food/bait fishery occurs in the fall. All of the herring fisheries are managed for a guideline harvest level established by the Prince William Sound Herring Management Plan, 5 AAC 27.365. The management objective for herring is to target fisheries on a high quality segment of the biomass while maintaining a minimum spawning biomass.

## **OVERVIEW OF AREA WIDE SALMON FISHERIES**

The 2002 Prince William Sound Area commercial salmon harvest of 28.3 million fish (Table 1) is the twelfth highest on record (Table 2, Figure 2). Harvest was comprised of 19 million pink, 2.3 million sockeye, 6.4 million chum, 650 thousand coho, and 40 thousand chinook salmon. The majority of the harvest, 14.8 million fish, was common property harvest while 13.5 million were sold for hatchery cost recovery (exclusive of roe/meal sales).

Estimated value of the combined commercial salmon harvest is \$37.8 million, including hatchery sales (Table 3, Figure 3). During the 2002 season, 534 drift gillnet permit holders fished (Table 5). Drift gillnet harvest is valued at \$21.9 million, setting average earnings at \$41,039. Set gillnet harvest is valued at \$1.7 million setting average earnings of the 28 participating permits at \$62,168. Seine fishery harvest was worth \$5.0 million for an average ex-vessel value of \$41,481 for the 120 permit holders that participated this year. Revenue generated for hatchery operations (exclusive of roe/meal sales) was approximately \$9.2 million.

Due to a spawning biomass of less than 22,000 mt of herring, no commercial fisheries for herring occurred in 2002.

## **SALMON SEASON SUMMARY BY DISTRICT**

### ***COPPER RIVER DISTRICT***

#### **Introduction**

The Department of Fish and Game, with allocative direction from the Board of Fisheries, has consistently endeavored to manage salmon runs to the Copper River District to assure sustained yield and to meet all user group allocations, as outlined in 5AAC 24.361 Copper River District Salmon Management Plan. To these ends, the past decade can be measured more by its successes than shortfalls. At the December 1999 meeting in Valdez, the Board of Fisheries amended 5 AAC 24.361 COPPER RIVER CHINOOK SALMON FISHERY MANAGEMENT PLAN to provide the department both the tools and the discretion to manage the early season as necessary to maintain the spawning escapement within the range of 28,000 to 55,000 chinook salmon *Oncorhynchus tshawytscha*. This season, the department actively enacted provisions in the plan with positive results.

Management tools currently available to the department have allowed it to consistently respond to indices of abundance inseason and to regulate the commercial salmon harvest accordingly. In 2000, the department began reassessing the feasibility of using dipnets and small mesh gillnets to assess run strength in the lower river early inseason for sockeye salmon. Accurately monitoring inriver movement of salmon above the commercial fishing district and below the sonar has long been recognized as a useful tool that could add precision to early season management actions. The department has been pursuing lower Copper River assessment projects since the 1992 season.

Working in the lower Copper River in May has proven to be challenging. The department received new funding to broaden its test-fishing efforts in 2002. Initial fish monitoring results may be used to confirm that inriver migration has begun, while the long-term goal would be to develop a relationship between test fish indices and subsequent sonar counts. The Native Village of Eyak has also proposed a lower river assessment

project that has the potential to further help characterize run entry well below the Miles Lake sonar counters. Preliminary work to assess the feasibility of their project began in 2002.

In managing commercial harvest to provide for upriver escapement and allocations, the department's primary measure of inseason success is the escapement index provided by the Bendix sonar counters at Miles Lake. Upriver subsistence harvests have averaged 193,319 salmon from 1996-2001. An increasing trend in subsistence harvests is reflected annually through additions to the inriver goal. Additionally, aerial escapement indices, coded wire tag data, and weir data have provided supporting information as to the relative success the department has had in meeting provisions of the Copper River District Salmon Management Plan. Achieving biological escapement goals and satisfying other management plan provisions have remained the department's primary management objectives.

The Copper River District commercial fishing season has historically opened in mid-May. Fishing periods are now established in season by emergency order following many years of "book openings" that formerly ran from Monday mornings to Friday evenings. In general, fishing time has steadily been reduced over the years in response to changing patterns in the fishery, increased efficiency of the fleet, and reallocations by the Board of Fisheries. Two commercial fishing periods per week has been the recent pattern with the duration of a given fishing period dependant upon trends in escapement, harvest, and environmental conditions.

The upriver biological escapement goal for wild stock sockeye salmon is 300,000 fish and this number has been constant since being adopted in 1972 and placed into regulation in 1980 (Fried 1994). The Copper River District Salmon Management Plan outlines the biological and allocative categories that comprise the inriver goal for Miles Lake sonar. Spawning escapement, subsistence harvest, sport fishery, hatchery brood, and hatchery surplus are the categories included in the management plan's inriver goal. Relative timing of the wild and enhanced components of the Copper River run is shown in Appendix A.1. Timing of enhanced fish passing Miles Lake sonar was determined from their timing in commercial harvest adjusted for travel time from the commercial fishing district to Miles Lake.

Of the five categories contained within the inriver goal, the most significant increases over time have been in the hatchery surplus and subsistence categories. In the early 1980s, the inriver goal stood at 516,000 salmon. In 2002, the inriver goal totaled approximately 651,500 wild and enhanced salmon. In 2002, based upon the forecasted run of some 420,000 enhanced sockeye salmon to the Copper River, the hatchery surplus within the inriver goal was set at 99,000 sockeye salmon. Other inriver goal categories included 300,000 upriver natural spawners, 200,000 subsistence, 15,000 sport, 17,500 "other salmon" and 20,000 hatchery broodstock sockeye salmon for a total inriver goal of 651,500 salmon. The escapement objective for the Miles Lake sonar counter called for 640,911 salmon to pass the counter by August 3, the last scheduled day of counting for the sonar project.

The category of subsistence salmon within the inriver goal is expressed as a range. The number of fish added to the inriver goal for subsistence use is set annually based on harvest in recent years. In 2002, the three-year average harvest from both the Glennallen Subdistrict and Chitina Subdistrict were combined and incorporated into the inriver goal. The number of surplus sockeye salmon within the inriver goal is determined annually based on the Gulkana Hatchery run forecast and a pre-season estimate of commercial harvest exploitation rate that wild stocks can likely sustain during the late June and July mixed stock fishery in the Copper River District. It is important to note that these surplus salmon do not fulfill any biological escapement needs, nor are they specifically linked to any upriver subsistence harvest or sport allocations. An unknown percentage of the substantial hatchery surplus is taken during July and August in these upriver fisheries.

## **Preseason Outlook and Harvest Strategy**

The 2002 commercial harvest forecast for Copper River District was 49,100 chinook, 710,000 sockeye, and 302,000 coho salmon (Eggers 2002, Table 6). Gulkana Hatchery located north of Paxson Lake was expected to contribute approximately 300,000 sockeye salmon to the commercial harvest. The actual 2002 sockeye salmon harvest of 1,248,503 ranked as the eighth largest on record, but was slightly below the recent ten-year average harvest of 1.53 million sockeye salmon (Appendix A.2). The harvest of 38,734 chinook salmon was below the projected harvest and ranked as the fifteenth largest chinook salmon harvest on record. The 2002 inriver goal for salmon passing Miles Lake was set at 651,500 fish. This number equated to a preseason sonar goal of 640,911 salmon by August 3, the normal season ending date for sonar counting at Miles Lake. By July 31 the last day of sonar counting, 819,886 salmon had passed the Miles Lake sonar counter (Appendix A.3).

The traditional fishing schedule for Copper River District is two evenly spaced periods per week. Periods usually occur on Mondays and Thursdays. Duration of fishing periods is adjusted by emergency order as needed. After August 7, the management priority switches to coho salmon management, and fishing has recently begun with one 24-hour period per week. Additional fishing time depends upon the strength of the return determined from harvest and escapement information.

Early-season management of Copper River District is based on actual harvest as compared to anticipated harvest with environmental conditions, fishing effort, and harvest consistency throughout the period taken into account (Appendix A.4). This is the most reliable method of evaluating early run strength prior to installation of the inriver sonar at Miles Lake. In late May, sonar counts and commercial harvest information become the primary factors governing management of the fishery. By mid-June, aerial estimates of sockeye escapement in Copper River Delta systems become an additional consideration when scheduling commercial fishing periods. Due to the many spawning systems in the Copper River Delta, an actual weekly escapement index of selected sockeye systems is compared to an anticipated weekly escapement index. The escapement index goal for the Copper River Delta is 90,000 sockeye salmon. The sockeye salmon aerial escapement index for the Copper River Delta systems in 2002 was 75,735, 16% below the index goal (Appendix A.5).

## **Sockeye and Chinook Salmon Fishery Season Summary**

The 2002 commercial fishing season began on May 16 with a 6-hour fishing period. The use of a 6-hour period, instead of the traditional 24-hour or even a 12-hour period was in response to the low water level of the Copper River, late ice break-up, and persistent below average daily temperatures leading up to the opener (Appendix A.6). In addition to the reduction in time, the inside waters from the west side of Pete Dahl Slough to the east side of Kokenhenik Channel were closed (Appendix A.13 and A.19). The harvest was 55,867 sockeye and 4,632 chinook salmon versus an anticipated harvest of 27,496 sockeye and 8,970 chinook salmon (Appendix A.4, A.7, A.8).

While not unusual, portions of the river above the 27-Mile bridge remained ice covered when commercial fishing commenced on May 16, however lower stretches of the river also remained ice covered. Weather conditions for the first four periods were favorable. Escapement information was available from the Miles Lake north bank sonar site beginning May 13 and the south bank sonar was operational on May 18. With the actual harvest being significantly above anticipated and few blush fish showing up in the harvest, preliminary indications were that sockeye returns would likely be above the preseason forecast, however the sonar was not confirming corresponding escapement to the harvest indicating that the salmon were not committing to inriver migration. The Lower River Test Fishery was also not showing any indication that salmon were migrating inriver. This was likely the result of a thermal barrier at the mouth of the Copper River. The second fishing period was for 12-hours again with an inside closure in effect, and was scheduled

for Monday, May 20. Ongoing commercial harvesting would help to further determine the strength of the salmon return. The harvest for the second period was 117,427 sockeye and 4,688 chinook salmon versus a projected harvest of 47,725 sockeye and 7,888 chinook salmon. The actual chinook salmon harvest being less than the anticipated harvest was likely the result of the inside area closures. In contrast, during the record setting sockeye salmon harvest of 1997, the second 24-hour period's harvest was 209,000 sockeye and 11,000 chinook salmon versus an anticipated harvest of 54,000 sockeye and 5,300 chinook salmon.

Sonar counts from Miles Lake were tracking behind the daily objective counts for most of May despite large harvest of sockeye salmon on the fishing grounds, indicating the fish were not committing to inriver migration. Reports from the fishing grounds indicated that most of the harvest was occurring offshore in between the 150 to 300 foot water depth lines along the tide rip. The cumulative harvest for the first two commercial fishing periods was 173,294 sockeye salmon, which was well above the projected cumulative harvest of 75,000 fish. Chinook salmon cumulative harvest was 9,320 fish versus a projected harvest of 16,858. Harvest from the third 12-hour period with no inside closure in effect was 226,564 sockeye and 10,754 chinook salmon. Reports from fishers were that a majority of the sockeye harvest was occurring in outside waters. Excellent weather and coordinated efforts to locate sockeye salmon offshore likely lead to the period's sockeye harvest exceeding the projected by some 175,000 fish. The thermal differences between ocean temperatures and the freshwater temperatures still appeared to have been causing sockeye salmon to hold in outside waters. Chinook salmon were more plentiful inside the barrier islands and were seen in freshwater above the closed water boundary in the Lower River Test Fishery.

The fourth fishing period on May 27 was again scheduled for 12 hours in response to less than anticipated sonar counts. The harvest from the fourth fishing period was 161,574 sockeye and 3,567 chinook salmon. The Miles Lake cumulative sonar count was 21,418 fish versus an expected count of 43,507 on May 28. Peak fishing effort in the Copper River District occurred during the May 27 fishing period when 473 drift gillnet permits were recorded as having fished. Effort remained steady until Coghill Lake sockeye salmon stocks began to return to the Main Bay Hatchery in the Eshamy District. Despite strong harvest no fishing was allowed for what would have been the fifth fishing period on May 30 due to lagging escapement past the sonar. By June 3 the cumulative sonar counts were tracking the anticipated escapement with 109,306 fish versus an anticipated count of 107,137 fish.

Due to the large harvest from the first four fishing periods, permit holders were concerned that the department was managing too conservatively. Abundance based management appeared to support a more aggressive fishing strategy; however, with sonar counts less than half the anticipated counts, forgoing a fishing period in late May was warranted. Uncertainty as to how many salmon were currently in the river above the fishery but below the counters supported the conservative management to date. The Lower River Test Fishery, which is conducted below the 27-Mile Bridge, was suggesting that inriver escapement was occurring but with little strength. Peak sockeye harvests for the Copper River traditionally occur during statistical weeks 23 and 24.

On May 29 sonar counts were above the daily escapement goal and a 12-hour fishing period was announced for June 3. On June 1 the Lower River Test Fishery's catch per unit effort nearly doubled and on June 3 the sonar crew reported that the projected passage of salmon for the day would be approximately 30,000 fish. During the fifth fishing period on June 3 an announcement was made extending the period by 12 hours to a 24-hour fishing period. The next three fishing periods were all for 24 hours and the ninth fishing period on June 17 was for 12 hours in response to declining sonar counts and an accumulating sonar deficit. Beginning June 8 the daily sonar counts were lower than anticipated and this trend continued through June 25 with a cumulative sonar deficit of nearly 40,000 fish.

The commercial fishery remained closed from June 18 to July 5 in order to improve escapement counts past the Miles Lake sonar as well as delta escapement. On June 25, the cumulative deficit at the sonar counter

peaked at 40,000 fish. On June 26 daily escapement past the sonar began to exceed the anticipated daily escapement.

The first aerial survey of the Copper River Delta was flown on June 7 (Appendix A.9). Similar to stocks returning to the upper Copper River, the timing of delta sockeye salmon stocks appeared to be delayed and very few fish were observed. On the second survey on June 15, 6,275 sockeye salmon were counted versus an anticipated count of 4,411 fish. During the third survey on June 20, only 1,506 sockeye salmon were counted versus an anticipated escapement of 10,126 fish. The discrepancy between the second and third survey was the result of the majority of the sockeye salmon observed during the second survey being in the outlet of Tokun Lake, which is very deep, and by the third survey they had moved into deep water offshore out of visibility. The third survey indicated that very few new sockeye salmon had migrated into delta spawning areas.

Commercial fishing commenced with two consecutive 12-hour fishing periods on July 6 and July 9. Although the sonar counts were surpassing the daily anticipated counts, fishing periods were kept at 12-hours until delta escapement numbers improved. The combined harvest for these two fishing periods was 144,861 sockeye and 159 chinook salmon.

By the date of the fourth aerial survey on June 28, Copper River Delta escapements had improved but weekly escapement goals were still below the lower acceptable range. The actual aerial estimate on June 28 was 14,350 sockeye salmon versus an anticipated escapement of 21,099 fish. Delta sockeye salmon escapement continued to be below weekly projections until July 30. By season's end, the peak aerial survey estimate for sockeye salmon escapement to the Copper River Delta was 75,735, which is 16% below the objective of 90,000 fish. The Martin River Slough and Martin Lake systems have compressed run timing and by the seventh aerial survey on July 12 it was apparent that escapement into the systems would fall below the desired escapement.

With the daily sonar counts far exceeding projected counts and Copper River Delta escapements steadily improving, fishing time for the commercial fishery increased to 24-hour periods for the twelfth and thirteenth fishing periods, on July 12 and July 15 respectively. Fishing time was increased to 36-hour periods for the remainder of the season, with fishing periods occurring on July 18, 22, 25, 29, and August 1. By July 22, the sockeye salmon harvest was winding down and fishing effort had decreased to 152 permit holders fishing. Peak effort in July was on July 12 when 322 permit holders fished. By the end of July, effort had dwindled to 35 permits fishing in the Copper River District due to low harvest of sockeye salmon. When the Miles Lake sonar counter ceased operations on July 31, the cumulative escapement past the sonar was 819,886 versus an escapement objective of 632,291 fish. When the department shifted its management priority to coho salmon management on August 5 the sockeye salmon harvest stood at 1,245,610 and chinook salmon harvest was 38,730.

### **Coho Salmon Fishery Season Summary**

The Copper River District coho salmon harvest of 504,223 fish was 60% above the projected harvest of 302,000 (Appendix A.10) and ranked as the fourth largest harvest on record. The department met with the local PWS Salmon Harvest Task Force and the public in late July to discuss coho salmon management. It was decided that a single 24-hour per week schedule would be maintained until escapement warranted either extending or decreasing time. Deciding on the most appropriate fishing strategy to apply to the coho salmon return has been a contentious issue for the past few seasons. In order to maximize quality, processors universally prefer two shorter periods per week. Fishers tend to prefer a single, longer fishing period per week, both for logistical reasons and for conservation reasons. Two distinct fishing periods per week will potentially allow for two "clean up" harvests to occur when milling fish may be more effectively harvested.

The contention is that a single long weekly period will allow a broader window of time for fish to mill in the estuary and still escape the fishery. Arriving at a consensus over harvest strategy between processors and the fishing fleet has proven difficult to achieve. Overriding the concern over which would be the best harvest strategy for coho salmon has been the concern about the pattern of weak returns to the Copper River District since 1996. The past five years have seen harvests fall below projections and seasons end prematurely due to weak returns. In 1997, coho salmon escapement into delta streams was weak enough to close the commercial season and a bag limit reduction was imposed for sport fishers. In 1998, weather during the fall precluded an accurate assessment of coho salmon escapement for the year. Because of the recent history of poor coho salmon returns and inconclusive escapement data, the department intended to approach the season with extreme caution.

The coho salmon season officially began at 7:00 a.m. on August 5 with a single 24-hour period that week. The harvest from the first coho salmon fishing period was 4,673 fish. The anticipated harvest for the week was 10,647 coho salmon.

An aerial survey on August 10 counted approximately 1,200 coho salmon versus an anticipated count of 3,232 (Appendix A.11). During this survey, nearly 41,000 sockeye salmon were also counted. In some river systems, there was some difficulty in discriminating coho salmon from the numerous sockeye salmon. Species differentiation became easier in subsequent surveys as sockeye salmon numbers declined. The next survey on August 17 was flown under fair conditions with 3,595 coho salmon observed versus an anticipated count of 9,371. Coho escapement was likely higher than actually counted due to sportfishermen observed as being highly successful in Alaganik Slough where no coho salmon were counted during the aerial survey. Alaganik Slough had the poorest water visibility of all surveyed systems for the August 17 survey. The Copper River manager walked this system after the aerial survey and made note that approximately 500 to 750 coho salmon were missed during the aerial survey. It should also be noted that the Copper River manager conducted the aerial survey.

Most of the fishing fleet's effort was on the western side of the delta surrounding the Eyak River. Coupled with favorable harvest and adequate escapement into the Eyak River and Ibeck Creek the decision was made to continue with fishing opportunities through a conservative approach. The second commercial fishing period on August 12 resulted in a harvest of 23,430 coho salmon versus a projected harvest of approximately 24,277 for that week. The female percentage measured from the harvest was estimated to be slightly below the historic average for that date. With harvest near the anticipated and the female percentage below the average to date, continued commercial harvest was justified. Uncertainty over the actual strength in escapement warranted maintaining the conservative approach of limiting fishing periods to a single 24-hour period per week. The third opening on August 19 resulted in a harvest of 65,408 coho salmon versus an anticipated harvest of 45,832 fish. The next aerial survey flown on August 26, in ideal conditions, saw 20,900 coho salmon versus an anticipated escapement of 24,202. A fourth 24-hour period for Monday, August 26 had a coho salmon harvest of 93,246 fish with the peak effort of 214 permit holders participating. With escapement near the anticipated counts and strong harvest being reported the decision was made to have a 12-hour fishing period on Friday, August 30. This period resulted in a harvest of 60,523 coho salmon with 200 permits holders participating. The sixth period was set for 24-hours on Monday, September 2 and 67,607 coho salmon were harvested.

An aerial survey was flown on September 3 with 47,055 coho salmon counted under ideal survey conditions. The anticipated escapement was 34,815 coho salmon. With escapement above the desired level, the seventh and eighth periods were for 36 hours on September 5 and September 9. The last survey of the season was conducted in fair conditions on September 9 with 82,860 coho salmon observed versus an anticipated count of 33,749. With escapement goals achieved, an 84-hour fishing period was announced for September 12-15 to be followed by a 156-hour fishing period from September 16 through September 22. Approximately 63,540 coho salmon were harvested during these two periods. The last

fishing period for the season was for 48 hours from October 1-3 to accommodate one permit holder that desired to fish with no harvest reported. The season was officially closed effective 2:00 p.m. on October 4. The Copper River Delta coho salmon escapement was estimated to be 89,815 versus an objective of 50,000 (Appendix A.12).

## ***BERING RIVER DISTRICT***

### **Preseason Outlook and Harvest Strategy**

Opening in early June, Bering River District is managed concurrently with the Copper River District (Appendix A.13). The 2002 harvest of only 235 sockeye salmon from Bering River District was well below the recent ten-year average of 17,941 (Appendix A.14). The low harvest reported may be a result of mistakenly reporting Bering River District harvest in the Copper River District harvest. This conclusion is validated with conversations between management staff and fishermen who said they had fished the Bering River District with some success on several periods even though harvest was not indicated for the district through fish tickets. Overall, sockeye salmon escapement into Bering River District streams appears to have come in well below the goal of 32,000 by about 7,000 fish. The Bering River drainage, the largest sockeye salmon spawning system in the district, had a peak index count of 19,540 fish versus an anticipated peak count of 23,512 sockeye salmon (Appendix A.15).

The coho salmon harvest of 108,522 fish was near the recent ten-year average of 95,754. The coho salmon escapement goal was achieved with an escapement index of 34,200 versus an anticipated count of 24,650 fish for the Bering River District (Appendix A.16).

### **Sockeye Salmon Season Summary**

Bering River District generally opens the second or third week of June. In 2002, the first period of June 6 for 24 hours was approximately four days earlier than normal. The Copper River District sockeye salmon harvest indicated a stronger return than anticipated. No fishing effort for Bering River District was reported for the first fishing period. The district was opened to fishing concurrently with Copper River District again on June 10 for a 24-hour period. Once again, Copper River District sockeye salmon returns were indicating early run strength with harvest above anticipated. There was no reported fishing activity for the second fishing period.

An aerial survey for Bering River Delta sockeye escapement was conducted on June 7. Approximately 355 sockeye salmon were observed versus an anticipated 4,278 fish.

The next two fishing periods were for 24 hours and 12 hours respectively each occurring on June 13 and June 17. The June 13 period had the most reported fishing effort with two permit holders taking part in the fishery (Appendix A.17). The cumulative harvest of sockeye salmon was 235 after the fourth fishing period.

The next aerial survey that was conducted on June 15 under poor survey conditions due to a landslide above Dick Creek occluding most of the survey area. No counts were recorded for Bering River, Bering Lake, and Katalla River while the other systems were not surveyed.

Twelve hour fishing periods occurred on July 6 and July 12. No fishing effort occurred during these openings. Twenty-four hour fishing periods occurred on July 12 and 15 respectively, again with no fishing effort reported. Thirty-six hour fishing periods occurred on July 18, 22, 25, 29, and August 1. Again no effort was reported for these periods.

Aerial surveys conducted after June 15 continued to indicate escapements below anticipated (Appendix A.15). The sockeye salmon spawning escapement estimate was 24,715 versus the minimum escapement goal of 26,000 fish. At the conclusion of the season 235 sockeye salmon and 14 chinook salmon were harvested.

### **Coho Salmon Season Summary**

The coho salmon fishery is managed concurrently with the Copper River and typically begins in early August. In 2002 the Bering River District coho salmon fishery began on August 5 with a 24-hour fishing period. No permit holders fished for the first period.

Aerial surveys conducted on August 10 and 17 indicated that coho salmon escapement into Bering River spawning areas were below anticipated levels (Appendix A.18).

The next three fishing periods occurred on August 12, 19, and 26, each also for 24 hours. There was no reported effort for any of the fishing periods.

An aerial survey conducted on August 26 indicated that escapement was improving. With Copper River District coho salmon escapement also improving coupled with strong harvest the decision was made to allow a 12-hour fishing period on August 30 with 2,011 coho salmon harvested. This fishing period was followed by a 24-hour fishing period on September 2. Eighteen permit holders participated in the September 2 fishery harvesting 9,852 coho salmon.

An aerial survey on September 3 indicated that escapement goals for coho salmon would be reached for both the Copper and Bering River Districts. This survey was flown under fair conditions with 25,325 coho salmon observed versus an anticipated count of 18,859 fish for the Bering River District.

Once it was realized that coho salmon escapement goals would be achieved the department opened both the Copper and Bering River Districts to near continuous fishing only to break for harvest reporting. This was done to maximize harvest potential and allow the fleet and processors to establish their own fishing schedules to accommodate for weather and processing capacity. Thirty-six hour fishing periods occurred on September 5 and 9 respectively. There was an 84-hour fishing period occurring from September 12 through the 15, followed by a 156-hour fishing period from September 16 through September 22. A 48-hour fishing period occurred from September 23 through 25 followed by a 60-hour period from September 27 through the 29. The last fishing period for the season was for 48-hours beginning October 1.

The peak fishing effort for the Bering River District was during the September 9, 36-hour fishing period with 72 permit holders participating. The last reported fishing effort recorded for the district was for the 156-hour period beginning September 16 with eighteen permit holders participating. The cumulative harvest of 108,522 coho salmon ranked as the thirteenth largest harvest since 1973. The escapement was estimated to be 34,200 coho salmon versus an escapement goal of 23,000 with the last aerial survey of the season conducted on September 9.

## ***COGHILL DISTRICT (PRIOR TO JULY 21)***

### **Preseason Outlook and Harvest Strategy**

The management strategy prior to July 21 (drift gillnet only fishery) is concerned primarily with the return of natural sockeye salmon to Coghill Lake and the return of enhanced chum salmon to the Wally Noerenberg Hatchery (WNH). Coghill Lake sockeye salmon are managed for an escapement goal of 25,000 while hatchery chum salmon are managed to satisfy the allocation between the common property fishery(CPF) and Prince William Sound Aquaculture Corporation (PWSAC) corporate escapement. The forecast for the 2002 Coghill Lake sockeye salmon return was 95,600 fish of natural stock origin.

The department's forecast for the WNH chum salmon return was 1.3 million fish. The PWSAC forecast called for a return of 3.0 million chum salmon. The PWSAC cost recovery plan in 2002 was based on a revenue goal of \$4.0 million from gillnet salmon fisheries. It was initially estimated that the cost recovery harvest would require 47% of the WNH chum salmon and 45% of the Main Bay Hatchery sockeye salmon based on the PWSAC forecast. Preseason estimates were that as many as 1.3 million chum salmon would be needed to help satisfy the revenue goal with an additional 150,000 fish needed for broodstock. The actual number harvested for corporate revenue would depend on the average size and the price per pound PWSAC received for their fish. Some of PWSAC's preseason contracts linked the price they would receive to the grounds price paid to permit holders once the season opened. The department planned to manage conservatively until the run strength could be assessed in season.

The total chum salmon harvest for both the common property and corporate escapement was 5.0 million fish, which was substantially larger than the preseason forecasts of ADF&G and PWSAC. The common property harvest of early chum salmon was 2.4 million fish (appendix B.1 and B.2). Due to the magnitude of the chum salmon return, PWSAC opted to harvest most of their cost recovery goal through the sales of chum salmon and allow more sockeye salmon returning to Main Bay Hatchery to be harvested by the common property fleet. PWSAC harvested 2.6 million chum salmon for sales, and the broodstock goal was achieved.

The total commercial harvest of sockeye salmon in the district was 60,000 fish. Sockeye salmon escapement into Coghill Lake was 28,323 fish, exceeding the goal by about 3,000 fish (Appendix B.3 and B.4). A total of 22,747 pink salmon were counted past the weir. Peak pink salmon passage occurred between August 7 and August 8, when over 9,000 pink salmon were passed through the weir.

### **Season Summary**

Coghill District management strategy discussed at the April SHTF meeting was based on the WNH enhanced chum salmon corporate escapement goal of 1.3 million and the forecasted run of 1.3 (ADF&G) to 3.0 (PWSAC) million fish. With a Coghill Lake forecast of 95,000 sockeye salmon and an escapement goal of 25,000, the Coghill District was expected to open for two periods per week beginning in early June (Appendix B.6). The 2002 strategy for cost recovery was to begin harvesting as soon as adequate numbers of chum salmon were available in the THA and SHA using two purse seine vessels for harvesting. PWSAC began monitoring the run in late May but did not actually record a harvest until June 8. Due to the large number of three-year-old chum salmon that returned in 2001, a large component of age-4 salmon were expected to contribute heavily to the 2002 WNH enhanced chum salmon run. These younger aged chum salmon generally return later in the season than age-5 and age-6 chum salmon. Accurately forecasting the 2002 chum salmon return was complicated by PWSAC's adoption of a rearing practice that appears to have successfully influenced chum salmon survivals. It remains unclear if the sibling relationship used to model previous forecasts would remain unchanged in light of new rearing strategies. If survivals were indeed

enhanced, a large component of age-3 and age-4 chum salmon would likely be the result in 2002 and the PWSAC forecast would be the more likely outcome.

The first commercial opening in the Coghill District excluding the WNH THA and SHA occurred on May 27 after chum salmon were observed in the district. Effort and harvest for this period were very low. By the time PWSAC began cost recovery at WNH on June 8, the CPF had harvested 170,000 chum salmon. A 48-hour period on June 6 attracted 84 permit holders that harvested 149,000 chum salmon. The June 8 cost recovery harvest was over 11,000 chum salmon and estimated run entry by the following morning was 75,000. In comparison, the first Coghill District opening in 2001 was on May 28 with a harvest of 34,982 chum salmon by 23 permit holders and the first cost recovery harvest of 14,500 chum salmon occurred on May 31. Initial effort in Coghill District was low due to low chum salmon prices and strong sockeye salmon harvests on the Copper River. The Coghill weir was installed on June 11 and passed its first 3 fish on June 13. The anticipated cumulative Coghill weir escapement for June 13 was 116 sockeye salmon.

The peak gillnet harvest occurred during a 48-hour period on June 10 when 122 permit holders harvested over 227,000 chum salmon. PWSAC fished for cost recovery every day from June 10 until July 6 when the broodstock and gillnet cost recovery goals were met. Daily cost recovery harvests were near or above 100,000 fish from June 23 through July 5 with the peak harvest of 175,000 occurring on July 2. Total chum salmon harvest by PWSAC was over 2.5 million.

By mid-June, the WNH enhanced chum salmon return was showing positive indications of coming in well above the ADF&G forecast of 1.3 million. The total return as of June 12 was approximately 550,000 fish, which was on track with the anticipated run entry for that date based on the PWSAC forecast of 3.0 million. The female sex ratio in the June 12 cost recovery harvest was 39%, compared with the anticipated female percentage of 28% possibly indicating an early run timing. The sex ratio was the only negative indicator at the time. Approximately 300,000 fish were estimated to be in front of the hatchery in Lake Bay on June 12. If run entry continued at that rate, the common property and cost recovery fisheries would be hard pressed to keep up. Three consecutive 24-hour periods were announced for June 13, 15, and 17 in the Coghill District excluding the WNH THA and SHA. The commercial harvest for these three periods was 380,000 while cost recovery over the same period was 280,000 and run entry remained strong.

On June 17, female percentage had fallen to 35% versus an anticipated 38%. Sockeye salmon escapement counts at the Coghill River weir through June 17 totaled 12 fish compared to a projected cumulative count of 342. One 12-hour period and two additional 24-hour periods were announced for June 18, 20, and 22 in the Coghill District south of the latitude of Point Pakenham to facilitate sockeye salmon escapement to Coghill River. Commercial harvest for these three periods was 336,000 chum salmon and cost recovery harvest over the same interval was 356,000. Sockeye salmon escapement at the Coghill River weir through June 22 remained weak, totaling 55 fish compared to a projected cumulative count of 1,328. Projected daily counts during the last week of June were in the hundreds while actual counts were in the teens or below, raising concerns for Coghill River sockeye salmon escapement.

A pause in the Coghill District was taken to allow Coghill River sockeye salmon to pass through the district. On June 26, the daily count at the Coghill River weir was 1,007 compared with a projected daily count of 365. Although the cumulative escapement was still less than half of the anticipated, the increase in daily counts and the upcoming tidal peak suggested that Coghill River sockeye escapement might soon reach anticipated run strength. A 24-hour period was announced for June 27 in the Coghill District south of the latitude of Point Pakenham and a second 24-hour period was announced for July 1 in the Coghill District south of the latitude of Fable Point. On June 30, the Coghill River weir daily count reached the season high of 6,345 sockeye salmon and on July 1, the daily count was 5,223. Deep gillnet gear was allowed in the district beginning July 1. The cumulative escapement to Coghill River on July 1 was 16,148 compared to the projected cumulative of 5,582. This prompted the department to open the Coghill District on July 2 for

48 hours excluding the Esther Subdistrict, with the anadromous stream closures at the mouth of Coghill River suspended. Commercial harvest for this period was 9,400 sockeye salmon and 115,000 chum salmon while cost recovery harvest reached the season high of 175,000 chum salmon on July 2. Immediately following this period, sockeye salmon escapement to Coghill River closely resembled anticipated daily counts.

In order to focus some drift gillnet effort on the Coghill River, the Coghill District north of Golden Lagoon was opened for the entire week beginning on July 7 and ending on July 13. The cumulative weir count through July 7 was 19,612 sockeye salmon compared to the anticipated 11,483, with run entry closely matching the projected daily counts.

PWSAC completed cost recovery at WNH on July 6 with run entry still estimated at 150,000 per day in the hatchery terminal area and a surplus beginning to build. Under provisions of the Wally Noerenberg Hatchery Management Plan, purse seine gear was allowed in the Esther Subdistrict beginning July 8 in order to prevent deterioration of fish quality of the harvestable surplus of chum salmon that was not being adequately harvested by the drift gillnet fleet. The purse seine fleet was limited to the WNH THA and SHA for the purpose of harvesting hatchery chum salmon. Purse seiners were allowed to fish during 24-hour periods on July 8, 10, and 12, for 48 hours on July 14, and for 36 hours on July 18 within the hatchery THA and SHA harvesting approximately 790,000 chum salmon. Concurrently with these openings, the drift gillnet fleet was allowed to fish in the entire district including the hatchery THA and SHA. The final drift gillnet harvest prior to July 21 was 1.66 million chum salmon and 60,000 sockeye salmon. Escapement to Coghill River on July 21 was 25,775 sockeye salmon.

### ***UNAKWIK DISTRICT***

The 2002 Unakwik District harvest was 10,966 sockeye salmon with incidental harvests of chum and pink salmon (Appendix B.9). The sockeye salmon harvest exceeded the 10-year average harvest of 5,578 (Appendix B.10). The Unakwik District opened June 17 for a 12-hour period (Appendix B.9). On June 24, a schedule of two 24-hour periods per week was instituted, primarily targeting the sockeye salmon return to Miners Lake. On June 27, the schedule was changed to coincide with openings in the Coghill District. No changes were made to the concurrent fishing schedule until July 14 when the district was opened for 48-hours and July 18 and 22 when the district was opened for 36-hours. The last reported harvest occurred on July 22. On September 30, the Unakwik District closed for the season.

### ***ESHAMY DISTRICT***

#### **Preseason Outlook and Harvest Strategy**

Wild stock sockeye salmon returns to Eshamy Lake were forecasted to total 41,000 fish, 35,000 of which were needed to meet the midpoint of the lake's biological escapement goal of 30,000 to 40,000 sockeye salmon. Onsite returns to Main Bay Hatchery were projected by PWSAC to be 1,019,500 sockeye salmon composed of 1,300 Eyak stock, 978,000 Coghill stock and 40,200 Eshamy stock. However, the department's forecast for the sockeye salmon return to the hatchery was 36,100 Eyak stock, 661,400 Coghill Lake stock, and 3,400 Eshamy Lake stock sockeye salmon. The disparity between the forecasts is likely due to PWSAC forecasting returns of only 4 and 5-year old fish while the department's forecast includes the return of 3-year

old fish as well. Also, the department's forecast uses a greater range of historical survival estimates whereas PWSAC uses a smaller range to obtain the average survival rate of fry releases.

PWSAC had announced preseason that no cost recovery efforts would be directed towards Eyak stock or Eshamy stock sockeye salmon returning to Main Bay Hatchery. The timing and frequency of common property openings from mid-June through the remainder of the season would be balanced to provide for wild stock escapement, PWSAC's revenue needs, hatchery broodstock, and to maintain a high quality commercial harvest.

The hatchery operator for cost recovery harvests used the SHA at the head of Main Bay during periods when the commercial fishery was closed for cost recovery harvest of enhanced Coghill stock sockeye salmon. The commercial fleet could use the SHA during scheduled periods. Unless opened by emergency order, the Alternating Gear Zone (AGZ) was to remain closed to commercial fishing to protect the hatchery barrier seine. It was expected that the barrier seine would be removed during the Eshamy stock's return.

### **Season Summary**

Given the early timing of Eyak stock, there were no wild stock concerns, which allowed the department to open the entire district. Waters of the entire Eshamy District opened for the season for 72 hours on May 16 with a harvest of 142,004 sockeye salmon with 89 drift and 13 set gillnet permit holders participating in the fishery (Appendix C.1 and C.2). Due to the 6-hour period for the Copper River District, it was decided that a longer period would be allowed in the Eshamy District to allow greater fishing opportunity by giving fishermen adequate time to fish in the Copper River District and then travel to the Eshamy District for the remainder of the period. The returning Eyak stock sockeye salmon were all comprised of 5-year old fish released in 1998 as 1.0 fish. PWSAC released 1.0 Eyak Lake stock sockeye salmon from 1996 to 1998 the majority of all returns were 4-year old fish. In 2001 the Eyak stock run was extremely weak, which led to the assumption that the 2002 5-year old return would correspond to the 2001 4-year return and also be weak (Appendix C.3 and C.4). It was obvious early in the first period that the Eyak stock return was much stronger than the forecast.

The second and third periods were for 48 hours each and occurred on May 20-22 and May 23-25 with the entire Eshamy District including the Main Bay Subdistrict with the AGZ alternating between set and drift gillnet gear. The cumulative harvest for these periods was 68,310 sockeye salmon.

The next five periods were also for 48 hours, but were limited to the Main Bay Subdistrict and the AGZ alternating between set and drift gillnet gear due to returning Coghill River sockeye salmon and WNH chum salmon traveling through the district. Periods 4 - 8 began on May 27, 30, June 3, 6, and 10 respectively. The cumulative harvest from these periods was 38,030 sockeye and 4,302 chum salmon. The ninth period on June 13 was also limited to the Main Bay Subdistrict with the AGZ open to drift gillnet gear. The district was open for 24 hours to allow fish to build-up in the area before the next period. Only 923 sockeye salmon were harvested in the ninth period by four drift and no set gillnet permit holders. The tenth fishing period on June 17 was for 48 hours with the Main Bay Subdistrict open and the AGZ open to drift gillnet gear. Total harvest for the period was 5,046 sockeye salmon.

On June 19 PWSAC installed their barrier seine in front of the Main Bay Hatchery to begin cost recovery and broodstock collection of returning Coghill stock sockeye salmon. The Coghill River weir was behind anticipated escapement of sockeye salmon at this time with a cumulative count of 51 versus an objective of 994 sockeye salmon on June 21. The eleventh and twelfth fishing periods were for 24 hours each beginning June 20 and June 24 respectively. Only the Main Bay Subdistrict excluding the Main Bay SHA and AGZ were open in order to protect wild sockeye salmon migrating through the district and to

facilitate PWSAC cost recovery efforts. The cumulative harvest from these periods was 40,081 sockeye and 6,391 chum salmon. On June 27 the department granted PWSAC increased cost recovery area to include all of the Main Bay Subdistrict. This was done to increase cost recovery efficiency and harvest in order to allow greater fishing time and consistent fishing periods to the CPF.

The thirteenth through the eighteenth fishing periods were all 24-hour periods, with all of the Eshamy District open to commercial fishing excluding the AGZ with gillnets deeper than 60 meshes allowed. These periods occurred on July 1, 4, 6, 8, 10, and 12 respectively. The cumulative Eshamy harvest on July 13 was 486,307 sockeye, 11,467 pink, and 69,701 chum salmon. On July 3 PWSAC announced that their cost recovery efforts were 90% complete and that their cost recovery goal would be achieved in the near future with no foreseeable problems. PWSAC completed cost recovery efforts in Main Bay on July 6 with 93,716 sockeye salmon harvested. Beginning July 1 regulatory anadromous stream closures within the district went into effect to protect both wild chum and pink salmon returning to the district. On July 2 the Eshamy weir was installed to enumerate sockeye salmon escapement into Eshamy Lake. Sockeye salmon escapement past the Coghill River weir was higher than anticipated by July 2 with a cumulative count of 16,987 versus an anticipated count of 6,409 for that date. Peak effort occurred on the fourteenth fishing period with 301 drift and 23 set gillnet permit holders fishing with effort decreasing thereafter. The thirteenth fishing period had the largest single period harvest for the season with 176,701 sockeye and 27,733 chum salmon harvested.

The nineteenth period on July 14 was for 48 hours followed by three 36-hour periods occurring on July 18, 22, and 25. The entire district was open excluding the AGZ for these periods. The cumulative harvest for the district on July 27 was 775,297 sockeye, 122,845 chum, and 65,768 pink salmon. On July 9 the cumulative Eshamy weir count was 1,041 versus an anticipated 1,723, and by July 19 the cumulative count was 3,487 versus an anticipated 3,614 sockeye salmon past the weir (Appendix C.5 and C.6).

By late July it was apparent that wild pink salmon escapement in Prince William Sound was low. Otolith samples collected from pink salmon harvested in the Eshamy District during the week of July 21 indicated that over 90% of the harvested pink salmon were of wild origin. The twenty-third and twenty-fourth periods beginning July 29 and August 1 were each for 36-hours. The twenty-fifth period beginning August 1 was for 24 hours. Each period allowed fishing in the district with the AGZ open alternately between set and drift gillnet gear. To decrease interception of pink salmon migrating through the district, a mesh size restriction was put into effect requiring a mesh size of 5 3/8" or greater in waters outside of the Main Bay Subdistrict. Fish and Wildlife Protection Officers were notified of this action and gave assurance that gear requirements would be enforced. Despite the gear restriction, the largest single period pink salmon harvest occurred during the twenty-fourth period with a reported harvest of 28,269 pink salmon.

In an attempt to further reduce pink salmon harvest and maintain harvest of sockeye salmon returning both to Eshamy Bay and Main Bay, the twenty-sixth and twenty-seventh periods beginning on August 8 and August 12 were each for 24 hours open to Main Bay with the AGZ open and in Eshamy Bay east of 148° 00' 30" W. longitude and west of 147° 58' W. longitude. However, due to the confined area and several fishermen complaining that they did not have larger mesh gear, no mesh size restrictions were imposed for these periods. Even with the confined area open to fishing, the cumulative harvest for the two periods was over 24,000 pink salmon. Due to a continuing predominance of pink salmon in the harvest, the mesh size requirement was again imposed in Eshamy Bay open waters for the twenty-eighth period for 24 hours, twenty-ninth period for 72 hours, and the thirtieth period for 60 hours beginning on August 15, 19, and 23 respectively. Pink salmon dominated the harvests for all of these periods except for the 60-hour period on August 23.

On August 20 the Eshamy weir cumulative escapement was 37,350 versus 22,571 sockeye salmon. With the Eshamy Lake sockeye salmon escapement goal realized, the Main Bay Subdistrict with the AGZ open to set gillnet gear and all waters of Eshamy Bay west of 147° 58' W. longitude were open for a 156-hour period beginning August 26, with the mesh size restriction in effect in Eshamy Bay open waters. In order to accommodate sport anglers, the area open to commercial fishing in Eshamy Bay was modified to waters east of the sport fish regulatory markers and west of 147° 58' W. longitude for the next 156-hour period beginning September 2 until September 8.

The Eshamy District's cumulative season harvest was 830,859 sockeye, 4,057 coho, 186,786 pink, and 127,271 chum salmon (Appendix C.7). The sockeye harvest was nearly double the CPF forecasted harvest of 430,000 sockeye salmon. This can be attributed to a much larger than forecasted Eyak stock return and PWSAC obtaining most of their non-pink salmon cost recovery revenue goal from Wally Noerenberg Hatchery chum salmon.

## ***GENERAL PURSE SEINE DISTRICTS***

### **Preseason Outlook and Harvest Strategy**

The general purse seine districts include the Eastern, Northern, Unakwik, Coghill, Northwestern, Southwestern, Montague and Southeastern Districts (Appendix D). The Prince William Sound Management and Salmon Enhancement Allocation Plan (5 AAC 24.370) closes the Southwestern District prior to July 18. The plan also closes the Coghill District to purse seine gear prior to July 21, except under the WNH Management Plan (5 AAC 24.368(f)), the Esther Subdistrict may be opened to seine gear to prevent deterioration of fish quality of the harvestable surplus of chum salmon that is not being adequately harvested by the drift gillnet fleet. Beginning July 21, both purse seine and drift gillnet gear are allowed in the Coghill District. Purse seine gear is allowed in the district as long as the harvestable surplus is predominantly pink salmon by number. Fishing periods in all districts are established by emergency order.

The general purse seine districts are managed to achieve wild pink and chum salmon escapement goals by district and allow for the orderly harvest of surplus wild and hatchery stocks. Escapement of pink and chum salmon is monitored through the season by weekly aerial surveys of 209 index streams. Management to achieve hatchery corporate escapement goals is accomplished by opening and closing subdistricts near the hatcheries. Subdistrict openings are also utilized to target the fleet on hatchery stocks when wild salmon escapement is weak.

The VFDA Solomon Gulch Hatchery has a stock of pink salmon that peaks in early July and a run of coho salmon that begins in August (Appendix E). All of VFDA's enhanced production returns to the Solomon Gulch Hatchery in Port Valdez, with the exception of a small run of coho salmon that returns to Boulder Bay near the Village of Tatitlek.

PWSAC pink salmon stocks peak in mid-August (Appendix E). Their pink salmon return to Cannery Creek, WNH and AFK Hatcheries. A moderate run of coho salmon at WNH is incidental to the late pink salmon fishery. The outlook for the general purse seine fishery in 2002 was for a total return of 30.9 million pink salmon composed of 26.3 million hatchery and 4.6 million wild stock pink salmon (58% PWSAC, 27% VFDA, 15% wild). The forecasted CPF harvest was 16.7 million pinks with an additional 12.8 million for corporate escapement and 1.4 million for wild stock escapement. The wild stock chum salmon forecast was

920,000 fish with a midpoint escapement goal of 225,000. The forecast for enhanced chum salmon in purse seine districts was 260,000 fish returning to the Port Chalmers remote release site in the Montague District.

When the Prince William Sound SHTF met prior to the fishing season, poor market conditions, harvest limits, and low prices caused a great deal of concern over the potential for a successful purse seine season. Purse seine effort the last few seasons has been greatly reduced due to low prices. The SHTF felt that the remaining purse seiners would likely concentrate their fishing effort and target hatchery returns where high volume harvests could occur. The department restated its intent to open multiple districts concurrently as wild stock escapements allow. This would help to relieve congestion in the hatchery subdistricts where a majority of the hatchery returns have traditionally been harvested. The department also agreed to fish earlier in the Southwestern District if the early wild stock returns showed significant strength and hatchery stocks composed a majority of the samples in the test fishery.

The 2002 Annual Management Plan for the Solomon Gulch Hatchery called for their pink salmon return to be managed to meet a \$2.7 million revenue goal. Fish determined to be surplus to the association's needs would be made available for common property harvesting. In 2002, two processors had contracts to purchase VFDA's cost recovery salmon. The cost recovery fishermen had contracts that required them to fish only on days when there was no CPF. Two processors operating at full capacity in 2002 were adequate to allow VFDA to efficiently achieve their cost recovery goal and allow for more timely common property openings targeting surplus enhanced fish. However, without having the ability to harvest for cost recovery every day because of catcher boat contracts, it was determined that the best management strategy would be to allow VFDA to reach approximately 33% of their revenue goal prior to the start of a CPF. This strategy would accomplish three goals: 1) It would allow VFDA to reach their revenue goal in a timely fashion; 2) It would allow the department to assess the strength of the hatchery run and; 3) It would allow early run wild stocks to escape into their natal streams.

According to PWSAC's annual management plans, the corporate escapement goal for pink salmon was based on broodstock needs of approximately 900,000 fish and a revenue goal of \$2.8 million. The department would collectively manage the pink salmon returns to WHN, Cannery Creek and AFK Hatcheries to achieve the goal. Fish estimated to be surplus to the corporation's needs would be made available for common property harvest. PWSAC's contract purse seiners were required to fish every day that fish were available for harvest so cost recovery and common property fisheries could proceed according to run assessments and not be tied to a completed percentage of cost recovery.

### **Chum Salmon Season Summary**

Purse seiners were unable to target wild chums in the Eastern and Southeastern Districts due to poor pink salmon escapements while enhanced chum salmon returns in the Montague and Coghill Districts were well above forecast. Hatchery chum salmon harvest set a record in 2002; however, the wild stock returns fluctuated greatly. The harvest of 1,071,478 fish was quadruple the forecast for Montague District. A fishing schedule of 156-hour periods each week was initiated in the Montague District on June 2. The schedule was from Monday at 8:00 a.m. to Sunday at 8:00 p.m. with a 12-hour closure on Sunday night. This schedule was maintained through July 14. Additional fishing periods of shorter duration and smaller area occurred after that date to harvest surplus enhanced chum salmon and protect arriving wild stock pink salmon. Commercial common property fishing periods were conducted on the same schedule as Port Chalmers Subdistrict in Montague District through July 14. A total of 54,845 chum salmon were harvested at that location, which was nearly twice the preseason forecast. The return of chum salmon to the WNH was nearly four times the preseason forecast of 1.3 million adults. The Board of Fisheries (BOF) approved change in the WNH Management Plan allowing the use of purse seine gear to harvest enhanced chum salmon in the Esther Subdistrict for the purpose of preventing deterioration of fish quality of chum salmon not being adequately

harvested by the drift gillnet fleet was utilized in 2002. A 24-hour period of common property purse seine fishing was allowed in the SHA and THA of the WNH on July 8 to harvest surplus chum salmon prior to the deterioration of fish quality because hatchery chum salmon were entering the terminal areas faster than the gillnet fleet could harvest them. This led to a buildup of hatchery chum salmon and a deterioration of quality. Sixty-three purse seine permit holders harvested approximately 360,000 chum salmon in that 24-hour period. The low price of chum salmon kept drift gillnet effort low inside the WNH THA and SHA during the remaining open periods and warranted continued fishing by the seine fleet for surplus chum salmon. Purse seine fishing was allowed in the WNH THA and SHA during open fishing periods in the Coghill District until July 21, at which time purse seine gear became a legal gear for the entire district as pink salmon became the target species. Wild stock chum salmon escapements were mixed. Eastern, Northern, and Southwestern Districts were near the midpoints of their respective escapement ranges while Southeastern District was well above the escapement goal. The Eastern, Northern, and Southeastern Districts comprise 68% of the expected chum salmon escapement goal. Coghill, Northwestern, and Montague Districts were below their respective escapement ranges. Overall, the PWS chum salmon escapement was 15% above the goal.

### **Pink Salmon Season Summary**

The number of pink salmon that returned to Prince William Sound was less than the 30.9 million fish forecast and resulted in a harvest of approximately 19.0 million fish (Table 1). This is the lowest harvest since 1995 when 16.2 million pink salmon were harvested. The returning adults in 2002 had an average weight of approximately 3.5 pounds. An estimated 334,348 wild stock pink salmon contributed to the commercial common property and cost recovery fisheries based on otolith recoveries. Approximately 71% of the wild stock harvest occurred in the commercial CPF. The ratio of enhanced pink salmon to wild pink salmon in the 2002 total commercial common property harvest is estimated to have been 33:1. An estimated 0.9 million pink salmon escaped into Prince William Sound index streams to spawn, which is the lowest escapement since 1992. Approximately 45% (120 permit holders) of the Area E salmon purse seine permit holders made at least one delivery during the 2002 season.

Aerial surveys to assess early chum and pink salmon escapement in the Eastern and Northern Districts began in late-June. In July, surveys began in all other seine districts. Most fishing effort was directed at the hatchery subdistricts and terminal areas. The Eastern District typically supports early season purse seine effort but with the VFDA return barely exceeding corporate escapement needs and wild stocks below the escapement goals for the entire 2002 season, only one fishing period was allowed outside of Port Valdez on July 18. Southeastern District wild stocks were below the cumulative anticipated counts until late August allowing only one fishing period on July 18. The story was similar in western PWS as late run hatchery pink salmon began to arrive. Wild stock escapements were well below the anticipated counts for all western PWS districts and the hatchery returns did not show early signs of strong returns. Purse seine fishing periods were limited to the hatchery subdistricts and terminal areas with the exception of one 12-hour period in the Northern District on July 18. The peak effort occurred on August 14 and 16 when 102 permit holders delivered fish. The Southeastern District pink salmon escapement was 53% above the escapement goal and the Eastern District was 52% below its goal. In the Northern/Unakwik Districts, escapement was 35% below the escapement goal. The Northwestern and Coghill Districts were both 62% below their midpoint escapement goals. The Southwestern District was 75% below its escapement goal for the season. The Montague District was 2% above its escapement goal and the Eshamy District finished the season 83% below its pink salmon escapement goal. Overall, wild stock pink salmon escapement was 34% below the escapement goal. Although surpluses to wild stock escapement were identified in the Southeastern and Montague Districts, targeting these stocks was problematic because there was no other area to open concurrently in order to distribute effort.

## Eastern District

VFDA began harvesting their corporate escapement in waters of Port Valdez north of a line from Entrance Point to Potato Point on June 23. The 2002 pink salmon revenue goal for VFDA was \$2.7 million. Based on their sales contracts with Peter Pan Seafoods and Bear & Wolf Salmon Company, VFDA needed to harvest approximately 14.8 million pounds of pink salmon to reach their revenue goal. Although not unusual, cost recovery harvests lagged behind the anticipated harvest levels. Pink salmon were smaller than expected averaging less than 3.0 pounds. The percentage of females in the sales harvest from the first week of cost recovery operations averaged 5%, indicating the return may have been late. Aerial surveys of the Eastern and Northern Districts also began during the last week in June. While early timed wild stock pink and chum salmon were beginning to appear in the districts, numbers of salmon observed were less than anticipated.

Cost recovery harvest continued to fall below the anticipated through the first weeks of July. The percentage of female pink salmon in the cost recovery harvest steadily increased during this period, averaging 16% by July 4. It became evident, based on steadily increasing female sex ratios and lackluster cost recovery harvest that the hatchery pink salmon return was probably not going to meet forecast expectations. Generally the common property fleet begins harvest once cost recovery is 30% complete. Since there appeared to be little harvestable surplus, the department elected to forego a CPF targeting Solomon Gulch Hatchery pink salmon until cost recovery was further along. Results of aerial surveys of the Eastern and Northern Districts indicated that wild stock pink and chum salmon escapement had improved during the first week in July but continued to fall below anticipated.

VFDA continued to conduct cost recovery harvest operations employing up to ten purse seine vessels throughout most of July. VFDA reported that daily harvest numbers were beginning to exceed anticipated daily harvests, but the total size of the return to date was still less than expected. By mid-July, cost recovery harvest rates seemed to be improving and percentage of female pink salmon had exceeded 55%, indicating that the return was on time but smaller than the 9.2 million pink salmon forecast by VFDA. Since the pink salmon return to Solomon Gulch was thought to be much smaller than expected, the department decided to allow cost recovery to conclude before a CPF would take place. By July 17, VFDA had harvested 100% of their revenue goal and on July 18, the first CPF targeting Solomon Gulch Hatchery pink salmon occurred. The area open to fishing was restricted to Eastern District waters north of the latitude of Black Point and south of a line from Entrance Point to Potato Point. The fleet was restricted to the northern area of the district to protect wild stock pink and chum salmon escapement while still allowing some buildup of pink salmon in Port Valdez to assure adequate numbers of pink salmon would be available for broodstock collection. Although at least 40 vessels participated in the first period, harvest was lower than anticipated. During the 12-hour period, approximately 234,933 pink salmon were harvested (Johnson et al 2002). Otolith samples indicated that 99% of the pink salmon harvested were of hatchery origin. After the first period, VFDA expressed concern to the department that any additional fishing time in Port Valdez would adversely affect broodstock collection. Based on aerial survey information, wild stock chum salmon had improved, but pink salmon escapement still lagged well below anticipated escapement. Based on this information, the department did not announce any further openings in the Eastern District until July 26. Area was limited to waters of Port Valdez north of the latitude of Black Point and south of a line from Entrance Point to Potato Point to allow harvest of any surplus pink salmon while still providing for broodstock collection and wild stock escapement. During the second 12-hour period, fifty-two vessels harvested approximately 68,000 pink salmon. Otolith samples indicated that 95% of the pink salmon harvested were produced at Solomon Gulch Hatchery. VFDA continued to report difficulty obtaining enough broodstock and those pink salmon that were entering the hatchery raceways were very immature, thus unsuitable for immediate egg-take. On July 29 the waters of the Eastern District within Port Valdez west of 146° 27' W. longitude were open for 12 hours to provide an opportunity to the commercial fishing fleet to harvest any surplus pink salmon. During the period, forty-four permit holders harvested 50,996 pink salmon. Following the lower than expected

harvest of hatchery salmon during the previous two periods and the lack of opportunity to harvest wild stock pink and chum salmon in the remainder of the district due to poor wild stock escapement, the district remained closed until the management priority switched to coho salmon.

### **Southeastern District**

Wild stock pink salmon escapement in the Southeastern District was behind anticipated escapement through the first week of August while chum salmon escapement was at or above the anticipated from the first survey in early July. Large numbers of chum salmon were observed during the second aerial survey traveling along the shoreline in this district. A CPF was announced to open concurrently with the Eastern District on July 18. Thirteen permit holders participated and harvested approximately 1,000 pink salmon and 33,000 chum salmon. Following this fishing period, pink salmon escapement continued to fall behind the anticipated until an aerial survey on August 16 indicated pink salmon escapement was 10% above the anticipated. Meanwhile, chum salmon escapement climbed steadily above the anticipated. The same pattern was observed in the Eastern and Northern Districts. The Southeastern District was not opened again in 2002 due in part to weak pink salmon escapement and partly to the lack of area in other districts in which to offer concurrent openings. Without the ability to spread the purse seine fleet, a single district opening would likely draw more effort than would typically be expected. This district closed for the season on September 30.

### **Southwestern District**

The ADF&G Research Vessel Montague began recovering otoliths from pink salmon entering the Southwestern District on July 22. The early samples indicated that approximately half of the pink salmon entering the district were of hatchery origin but the initial test fish catches were small, sometimes requiring more than one set to reach an adequate sample. AFK Hatchery staff estimated 1,600 pink salmon had gathered near the hatchery by July 27. An aerial survey of the Southwestern District on July 27 revealed that wild stock pink salmon escapement was 75% below anticipated and wild stock chum salmon escapement was 11% below anticipated. By July 30, test fish samples indicated that 76% of the pink salmon entering the district were hatchery produced (6% Cannery Creek, 20% WNH, and 50% AFK). Cost recovery at AFK Hatchery began on July 30, with a harvest of approximately 100,000 pink salmon and a sex ratio of 4% females. An aerial survey of the Southwestern District on August 1 indicated that wild stock pink salmon escapement was still 81% below anticipated. At this time, wild stock pink salmon escapement to PWS was below anticipated in every district and the VFDA pink salmon return was well below forecast. As a result, there was no potential fishing area for purse seiners in PWS outside of hatchery terminal areas. A CPF in any district would have drawn heavy effort and neither the Southwestern District wild stocks nor the hatchery return were showing a harvestable surplus. Cost recovery and CPF harvest at AFK and WNH Hatcheries were near anticipated and had not yet begun at Cannery Creek Hatchery.

On August 5, test fish otolith samples indicated that 65% of the pink salmon entering the district were from AFK, 6% were from Cannery Creek, and 11% were from WNH. Cost recovery operations began at Cannery Creek Hatchery but were nearly 500,000 pounds behind the projection for this facility when they began. At this time PWSAC had harvested 21% of their revenue goal and, based on otolith samples taken in the Southwestern District test fishery, the hatchery returns to WNH and Cannery Creek Hatcheries were in question while the AFK return appeared strong. Since hatchery cost recovery is managed in aggregate and the returns to two of the three PWSAC pink salmon hatcheries were in doubt, coupled with weak wild stock escapement sound wide, no CPF was announced for the Southwestern District.

By August 12, PWSAC had harvested 53% of the cost recovery goal and run entry at AFK and WHN Hatcheries was substantial. The corporate harvest at Cannery Creek Hatchery had fallen drastically and was approximately one million fish behind the projected goal. In response, PWSAC shifted the focus of their cost recovery efforts to WHN and AFK Hatcheries, leaving Cannery Creek to the common property fleet. The first CPF in the Southwestern District was announced for August 14 concurrently with a period in the Northern District within Unakwik Inlet. The Port San Juan Subdistrict and the AFK Hatchery THA were also opened. Seventy-six permit holders fished in the Southwestern District on the first period harvesting approximately 754,000 pink salmon. Otolith recoveries indicated that 100% of the fish caught were PWSAC hatchery stock. An aerial survey of the Southwestern District conducted on August 13 again showed that wild stock pink salmon escapement was 74% below the anticipated reflecting the trend for pink salmon escapement throughout the western half of PWS.

Through August 15, PWSAC had harvested 65% of their purse seine revenue goal and it appeared that run entry would continue to be strong at WHN and AFK Hatcheries. The next 12-hour common property-fishing period occurred on August 16 in the AFK Hatchery THA and SHA in order to harvest a large buildup of pink salmon in the terminal area and prevent quality deterioration. Fifty-seven permit holders harvested 1,265,000 pink salmon. Otolith samples collected from this fishing period indicated that 100% of the harvest was PWSAC enhanced stock. Another fishing period occurred on August 18 in the Port San Juan Subdistrict. Fifty-four permit holders harvested a total of 555,000 pink salmon. Otolith recoveries from this fishing period indicated that the harvest contained 100% PWSAC enhanced stock.

The CPF resumed on August 20 with just the Port San Juan Subdistrict open for 12 hours. The August 22 and 24 openings in the Southwestern District again included only the Port San Juan Subdistrict for 12 hours allowing more pink salmon to enter into the AFK Hatchery SHA and THA which in turn allowed PWSAC to complete their cost recovery on August 24. An aerial survey on August 24 showed no improvement in the pink salmon escapement to the Southwestern District. With no improvement in pink salmon escapements in western PWS, no area in addition to the hatchery subdistricts and terminal areas was available to the common property fleet.

Beginning August 26, a schedule of 156-hour periods was instituted for the Port San Juan Subdistrict including the AFK Hatchery THA and SHA beginning Monday at 8:00 a.m. and ending Sunday at 8:00 p.m. The major processors stopped buying pink salmon by the end of August. One processor was left to buy from the common property purse seine fleet during the first open period in September. The regulation regarding full retention of salmon taken in a commercial fishery was put into effect on August 30 as the focus of the fishery turned to pink salmon roe. The pink salmon roe fishery along with a shortfall in pink salmon broodstock at AFK Hatchery resulted in a virtual cleanup of the hatchery SHA. There was an unharvested surplus of approximately 65,000 hatchery pink salmon at this hatchery. This district closed for the season on September 30 with over 5.7 million pink salmon caught by the common property fleet.

### **Northern District**

The Northern District opened concurrently with the Eastern, Southeastern, Coghill, and Montague Districts on July 18. An estimated 12 seiners harvested approximately 8,000 pink and 8,500 chum salmon in this district. Otolith samples indicated that 94% of the harvest from this period was wild stock pink salmon. Poor wild stock pink salmon escapement, a poor VFDA Hatchery return, and uncertainty regarding the Cannery Creek Hatchery return led to an immediate halt in the CPF. By July 31, the pink salmon escapement was 73% below anticipated. PWSAC began their cost recovery operations on August 5 at the Cannery Creek Hatchery, which was about one week later than last year. An aerial survey conducted on August 9 indicated that pink salmon escapement was 61% below anticipated. Cost recovery at Cannery Creek was 500,000 pink salmon below projections on August 5 and was falling further behind daily so that by August 13, the

cost recovery harvest was one million fish below projection. On August 13, PWSAC shifted the focus of their cost recovery to the WHN and AFK Hatcheries allowing the common property fishermen to harvest the majority of the Cannery Creek pink salmon return. The Northern District was opened for a CPF on August 14 concurrently with an opening in the Southwestern District. Waters of Unakwik Inlet north of the latitude of Payday Point excluding the Cannery Creek Hatchery THA and SHA were open. Waters of Hidden Bay on Culross Island were also open to harvest a buildup of WNH pink salmon. Open periods were every other day for 12 hours through August 24 with area expanded to include the hatchery SHA and THA. Beginning August 26, a schedule of 156-hour periods was instituted for the Northern District within Unakwik Inlet excluding the Cannery Creek Hatchery THA and SHA beginning Monday at 8:00 a.m. and ending Sunday at 8:00 p.m. The peak harvest occurred on August 18 when 10 permit holders landed 197,000 pink salmon. The stock composition of this harvest was 99% PWSAC enhanced and 1% wild stock pink salmon.

PWSAC cost recovery operations at Cannery Creek Hatchery harvested 601,000 pink salmon. The average weight was 3.1 pounds. The female percentage in the cost recovery harvest was quite low initially, indicating that the pink salmon were about one week late in their return timing. The district closed for the season on September 30 with 594,000 pink salmon harvested by the common property seine fleet. There was an unharvested surplus of approximately 45,000 hatchery pink salmon at this hatchery.

### **Montague District**

Pink salmon escapements in the Montague District were below the anticipated until August 24 when the index rose to 4% above the anticipated. There was no CPF in the Montague District following the directed chum salmon fishery in the Port Chalmers Subdistrict that ended on July 24. The Montague District closed to salmon fishing for the 2002 season on September 30.

### **Coghill District**

Coghill District became a dual gear area on July 21, allowing purse seiners access to enhanced pink salmon returning to WNH and wild pink salmon returning to the district's streams. Under provisions of the WNH Management Plan, purse seine gear was allowed in the Esther Subdistrict beginning July 8 in order to prevent deterioration of fish quality of the harvestable surplus of chum salmon that was not being adequately harvested by the drift gillnet fleet. The purse seine fleet was limited to the WNH THA and SHA for the purpose of harvesting hatchery chum salmon. This season's sockeye salmon return to Coghill River was strong and commercial gillnet fishing was allowed to harvest the excess sockeye salmon throughout the return. The midpoint of the escapement goal range for sockeye salmon for Coghill Lake was met on July 17. Aerial survey information indicated a weak pink salmon return for all aerial surveys beginning July 15 through August 27. As a result of the sockeye and pink salmon run strengths in Coghill River, the district north of the latitude of Golden Lagoon was opened on July 21 for 156 hours and again on July 29 for 48 hours.

PWSAC began their cost recovery operations at WNH for pink salmon on July 30 with a harvest of approximately 75,000 pink salmon and a sex ratio of 4% females. At this time, wild stock pink salmon escapement to Prince William Sound was below the anticipated in every district and the VFDA pink salmon return was well below forecast. As a result, there was no potential fishing area for purse seiners in PWS. A CPF in any district would have drawn heavy effort and neither the Coghill District wild stocks nor the hatchery return could be opened to a CPF. By August 5, cost recovery operations were at projected levels and harvest rates at AFK and WHN Hatcheries and had just begun at Cannery Creek Hatchery.

By August 12, PWSAC had harvested 53% of the cost recovery goal and run entry at AFK and WHN was substantial. The corporate harvest at Cannery Creek Hatchery had fallen drastically and was approximately one million fish behind the projected goal. In response, PWSAC shifted the focus of their cost recovery efforts to WHN and AFK Hatcheries, leaving Cannery Creek to the common property fleet. A CPF in the Southwestern District was announced for August 14 concurrently with an opening in the Northern District within Unakwik Inlet. A CPF in the Coghill District was announced for August 16 concurrently with a period in the Northern District within Unakwik Inlet and in the Southwestern District within the AFK Hatchery THA and SHA. The Esther Subdistrict excluding the WNH THA and SHA was opened. Forty-one permit holders fished in the Coghill District on the first period harvesting approximately 331,000 pink salmon. This was the peak for both harvest and participation for a single period in the Coghill District. Otolith recoveries indicated that 97% of the fish caught were PWSAC hatchery stock.

Open periods were every other day for 12 hours through August 24 in the Esther Subdistrict excluding the WNH THA and SHA. Beginning August 26, a schedule of 156-hour periods was instituted for the Esther Subdistrict including the WNH THA and SHA beginning Monday at 8:00 a.m. and ending Sunday at 8:00 p.m. The stock composition of the Coghill District harvest ranged from 97 to 99% PWSAC enhanced pink salmon. The major processors stopped buying pink salmon by the end of August. Three processors were left to buy from the common property seine fleet during the September 2 open period. The regulation regarding full retention of salmon taken in a commercial fishery was put into effect on August 30 as the focus of the fishery turned to pink salmon roe. The pink salmon roe fishery along with a shortfall in pink salmon broodstock at WNH resulted in a final cleanup of the hatchery THA and SHA. There was an unharvested surplus of approximately 125,000 hatchery pink salmon at this hatchery. This district closed for the season on September 30 with 1,271,000 pink salmon caught by the common property fleet.

## **Coho Salmon**

The waters of Port Valdez north of a line from Entrance Point to Potato Point and west of 146° 27' W. longitude were opened for 12 hours on September 3 to allow the harvest of coho salmon returning to Solomon Gulch Hatchery. The area open to the common property fleet was limited because the return of coho salmon had yet to appear in the vicinity of the hatchery. VFDA also expressed concern that allowing the fleet into Port Valdez near the hatchery could jeopardize coho salmon broodstock collection. Effort during the fourth period in the district was less than half of that reported during the pink salmon season; twenty-three permit holders harvested less than 4,000 coho salmon. The department reopened waters of Port Valdez north of the Entrance Point – Potato Point line on September 9 for 12 hours and increased the area open inside the port to waters west of the Security Zone “B buoy”. Both effort and harvest increased during the period; twenty-six permit holders reported harvesting almost 19,000 coho salmon. Waters of Port Valdez were reopened on September 7 and 10 with more time and area open, but effort and harvest declined. During the 36-hour period that ended on September 8, there were 1,861 sockeye salmon harvested. During the 84-hour period that ended September 13, there was no reported harvest and the district closed for the season on September 30.

The coho salmon return to WNH was close to the forecast. This hatchery met their broodstock needs but there was no harvestable surplus. Harvest information from fish tickets indicated that any surplus hatchery produced coho salmon might have been harvested during the pink salmon fishery. Approximately 2,400 coho salmon were taken in the CPF in the Coghill District and approximately 900 coho salmon were captured as broodstock. The forecast was for a total return of 3,300 coho salmon.

## **Conclusions and Recommendations**

With the exception of fishing periods occurring on July 18, purse seine fishing in PWS was limited to the hatchery subdistricts and terminal areas. Wild stock pink salmon escapement was below the escapement goal range in every district except Southeastern and Montague Districts.

The department continues to work with fishing industry representatives to explore management options that can maximize product quality and value of the pink salmon resource while providing for corporate and wild stock escapement needs. After accounting for the wild stock escapement index, the hatchery broodstocks, and the post-season surplus that was not harvested, the 2002 total return estimate for pink salmon is approximately 21.3 million fish. Several processors imported pink salmon from Southeast Alaska and Kodiak into PWS to supplement the poor harvest in PWS. It is estimated that approximately 350,000 of the surplus enhanced hatchery produced pink salmon were harvested for their roe by a few processors with the ability to dispose of the carcasses, and an estimated 300,000 surplus enhanced fish were left unharvested among the four PWS pink salmon hatcheries.

The department has improved pink salmon utilization by broadening its ability to use otolith marks for improved forecasting and inseason management. With otolith marked fish, the risks to wild stocks associated with a harvest decision can be evaluated prior to a fishery being announced. Post fishery analysis can be used to further refine management. Stream escapements, commercial harvests, and migration routes can all be accurately characterized using otolith marks. As a management tool, otolith marks offer a great deal of information about wild and hatchery pink salmon interactions. Figure 7 provides the PWS pink salmon contribution to the commercial harvest based on otolith thermal marks.

Reliably forecasting the magnitude of the PWS return can assist local managers, hatchery operators and the fishing industry in sufficiently preparing for the coming salmon season. The commercial harvest of 8.2 million pink salmon in 2002 was less than half the forecasted harvest of 16.7 million fish. Although the PWSAC hatchery pink salmon return was several days late, it was somewhat compressed, allowing for a nearly complete cleanup of the hatchery terminal areas by September 1 when most processors ceased operations. Reliable statewide forecasts can help the entire industry identify and address where and if regional processing capacity shortfalls and excesses are likely to occur.

## **PRINCE WILLIAM SOUND AND COPPER RIVER SUBSISTENCE FISHERIES**

Subsistence and personal use harvests (Appendices F.1 – F.6) continue to be minor in comparison to the commercial salmon harvest in the Prince William Sound Management area. The largest subsistence fisheries occur on the upper Copper River, upstream of regulatory markers above Haley Creek to the Copper River's confluence with the Slana River. A major change occurred in this fishery for the 2000 season. At the 1999 Prince William Sound Board of Fisheries meeting, the board made a positive Customary and Traditional Use finding for salmon stocks in Chitina Subdistrict on the upper Copper River. This resulted in the Chitina Subdistrict personal use fishery changing to a subsistence fishery. As a result, there are currently two subsistence fisheries in Upper Copper River District, Glennallen and Chitina Subdistricts. Alaska residents can participate in only one subsistence fishery in the Copper River drainage (Glennallen or Chitina Subdistrict).

In Prince William Sound and Copper and Bering River Districts, commercial permit holders may withhold a portion of their commercial harvest for home use. Since 1994, all chinook salmon in Copper and Bering River Districts that are harvested, but not sold in the commercial fishery must be reported on a fish ticket. In 2002 the harvest of chinook salmon retained for home use was 773 and 1,138 sockeye salmon were also kept for home use.

The Prince William Sound Area includes all waters of Alaska between the longitude of Cape Fairfield and the longitude of Cape Suckling. Subsistence fishing permits are not required for marine finfish other than salmon. Herring spawn on kelp may be taken for subsistence purposes as described in 5 AAC 01.610(d)(1)(2). Herring spawn on kelp may be taken from above water from March 15 through June 15. Herring spawn on kelp may be harvested using dive gear only during periods open for the wild herring spawn-on-kelp commercial fishery. Lingcod may be taken for subsistence purposes only from July 1 through December 31. Herring, rockfish, and groundfish other than lingcod or rockfish may also be harvested for subsistence purposes in the Prince William Sound Area.

### ***PRINCE WILLIAM SOUND AND LOWER COPPER RIVER***

Boundary lines for Copper River District subsistence fishing are the same as for the commercial drift gillnet fishery. Subsistence fishing is allowed from May 15 until September 30. From May 15 until two days before the commercial opening of Copper River District, seven days a week. Once the commercial season has commenced, subsistence fishing is allowed only during commercial fishing periods or by emergency order. Within Copper River District, drift gillnets are the only legal gear and may have a maximum length of 50 fathoms with a maximum mesh size of 6 inches prior to July 15. In addition to the subsistence fishery, commercial fishermen may withhold a portion of their harvest for home use. Any commercially caught chinook salmon not sold must be reported on a fish ticket.

In 2002, 11 subsistence permits were issued for Prince William Sound. Two permits were not returned, seven permits did not fish and two permits fished successfully, harvesting a total of 31 sockeye, nine pink and seven chum salmon. In Copper River District, 355 permits were issued in 2002, of which 199 were

fished. A harvest of 547 chinook salmon and 3,067 sockeye salmon was reported from the 199 permits that fished.

The Batzulnetas subsistence fishery has relatively little effort. Between 1994 and 1996, as many as five permits were issued. In 2002 only one subsistence permit was issued for the fishery with a reported harvest of 55 sockeye salmon.

## **EASTERN AND SOUTHWESTERN DISTRICT SUBSISTENCE FISHERIES**

Permitting for Southwestern and Eastern Districts subsistence areas began in 1988. Residents of both Chenega and Tatitlek are eligible for subsistence permits in their respective areas. In 1991, a court ruling qualified all residents of Alaska for a subsistence permit in the Eastern and Southwestern Districts. Permit holders are allowed to fish in these areas from May 15 until two days before the first commercial fishing period. Once the commercial fishing season is established, subsistence fishing may occur only during commercial fishing periods. Two days after the closure of the commercial fishing season, subsistence harvesting is open to seven days per week fishing until September 30 in the Southwestern District and until October 31 in the Eastern District.

In 2002, 19 permits were issued for Eastern District and five permit holders reported fishing, harvesting a total of 375 sockeye, 136 coho, 28 pink, and 36 chum salmon. However, of the 19 permits issued, only six permits were returned. In Southwestern District, 10 permits were issued and four permit holders reported harvesting 10 chinook, 142 sockeye, 123 coho, 83 pink, and 60 chum salmon.

## ***UPPER COPPER RIVER***

### **GLENNALLEN SUBDISTRICT**

Glennallen Subdistrict is that portion of the main stem Copper River upstream of the McCarthy Bridge to the mouth of the Slana River. This subdistrict is open June 1 through September 30 for continuous fishing. Fish wheels and dip nets are legal gear. During the 1996 Board of Fisheries meeting, the Copper River District Salmon Fishery Management Plan was modified and a range of 60,000-75,000 subsistence salmon was established to accommodate the variability in harvest levels and allow for increased harvests between board cycles. Participants are allowed one permit per household and the permit identifies the gear type to be used. Total annual harvest cannot exceed 500 salmon for a household of two or more and 200 salmon for a household of one. No more than 5 chinook salmon may be taken by each dip net permit holder. Caudal fins must be clipped from all salmon that are harvested. Subsistence permits with completed harvest information are required to be returned to the department by September 30 of each year.

Since 1996, an average of 752 fish wheel and 349 dip net permits were issued. Harvest and effort in this subdistrict has been increasing over time. The average number of dip net permits is up 50% over the previous five-year period while the average number of fish wheel permits has increased by 5%. An average of approximately 71,300 salmon was harvested during the last 5 years compared to an average of

64,000 salmon during 1993 to 1997 seasons. Sockeye salmon dominate the harvest with approximately 95% of the catch, followed by chinook and coho salmon.

The 2002 chinook harvest for the subdistrict was 3,406 compared to a record harvest of 4,782 set in 2000. Reported harvest of 47,222 sockeye salmon was below the 1999 to 2001 average of 69,000 sockeye salmon. From the permits received in the past, it appears approximately 25% of the chinook salmon subsistence harvest is landed by 2% of the permit holders, indicating that some individuals effectively target chinook salmon for subsistence uses.

## **CHITINA SUBDISTRICT**

Chitina Subdistrict is the portion of the main stem Copper River from a marker just above Haley Creek to the downstream edge of the McCarthy-McCarthy Road Bridge. The Alaska Board of Fisheries changed this fishery from a personal use fishery to a subsistence fishery in 1999. Regulations for the Chitina Subdistrict subsistence fishery remained similar to the Copper River Personal Use Salmon Dip Net Fishery regulations with three exceptions. The three exceptions included an adjustment to the annual bag limit, a maximum harvest level of wild stock sockeye salmon of 85,000-130,000, and permit holders are no longer required to possess a sport fishing license. Annual bag limits will continue to be 30 salmon for a household of two or more, and 15 salmon for a household of one, only one fish may be a chinook salmon. The Board of Fisheries determined that reducing the bag limit of chinook salmon from four in the personal use fishery to one in the subsistence fishery, provided for a reasonable opportunity to harvest a chinook salmon, but would also maintain chinook salmon harvests at historic levels. Based upon recent harvests the board determined that 100,000-150,000 salmon were necessary for subsistence needs to be met for the Chitina Subdistrict fishery. This number included contributions of hatchery fish, and after this contribution was subtracted, resulted in an 85,000-130,000 wild stock harvest level.

5 AAC 01.647 COPPER RIVER SUBSISTENCE SALMON FISHERIES PLANS requires the fishery to be opened between June 1 and June 11 depending on the strength and timing of the sockeye run. In 2002, the dip net fishery was opened by emergency order on June 10 for a 12-hour fishing period. Fishing appeared to be slow during the first period, which was followed by an 80-hour period on June 15 and another 80-hour period on June 22. On June 28, the department announced that the fishery would remain open continuously through September 30, unless closed by emergency order. The fishery remained open for the remainder of the season as expected.

Reported harvest for the Chitina Subdistrict subsistence fishery in 2002 was 1,763 chinook, 75,881 sockeye, and 1,761 coho salmon. There were 6,805 permits issued for the subdistrict in 2002 (Appendix G.5).

## **BATZULNETAS**

In 1987, an interim subsistence fishery was provided by emergency regulation at Batzulnetas to settle the United States District Court case of John vs. Alaska. The Batzulnetas fishery encompasses all waters from the regulatory markers near the mouth of Tanada Creek and approximately one-half mile downstream from that mouth and in Tanada Creek between ADF&G regulatory markers identifying the open waters of the creek. The fishery may begin after June 1. Fishing periods during the month of June are one 48-hour period per week. Beginning in July fishing periods are increased to 84 hours per week until September 1 when the fishery closes.

In 1987, the fishery was conducted near the mouth of Tanada Creek near the historical village site of Batzulnetas. Eight permits were issued in that year to individuals, or family groups, from Mentasta and Dot Lake and the fishery was conducted during July and August. A total harvest of 22 sockeye salmon was reported in 1987. The Board of Fisheries reviewed the fishery before the 1988 season and set seasons, eliminated the quota, and provided for additional gear types. Permits can be issued throughout the season and must be completed and returned to the department by September 30. No permits were issued for this fishery between 1988 and 1992 and 1996. Between 1993 and 2002 the average harvest was 211 sockeye salmon. From 1999 to 2002 only one permit was issued each year with a harvest of 55 sockeye salmon for each year.

## **2002 PRINCE WILLIAM SOUND HERRING FISHERIES**

### **Preseason Outlook and Harvest Strategy**

The Prince William Sound (PWS) herring management area encompasses all coastal waters of the Gulf of Alaska between Cape Suckling and Cape Fairfield, extending offshore to 59° N. latitude. Five herring fisheries occur during the year.

During the spring season, two fisheries target herring for sac roe using either seine or gillnet gear. Two spawn-on-kelp fisheries harvest either naturally occurring spawn on kelp or spawn on kelp suspended in pounds. In the fall, a food/bait fishery occurs. Of the five herring fisheries, only the wild spawn-on-kelp and the food/bait fishery are open entry fisheries.

For management purposes, all herring fisheries target on what is treated as a single major stock of herring that spawns during the mid-April to early May period. At the 1994 BOF meeting in Cordova, the minimum spawning biomass threshold was raised from 8,400 to 22,000 tons for the PWS stock. No fishery may be opened if the estimated spawning biomass is below this level. The 22,000-ton threshold is 25% of the potential spawning biomass from an unfished stock. The higher threshold will establish manageable harvest levels while reducing the risk of driving the population to low abundance through overfishing. When the stock size is between 22,000 and 42,500 tons, the PWS Herring Management Plan (5 AAC 27.365) allocates the projected available surplus to the five fisheries based on a zero to 20 % harvest rate. The maximum harvest rate of 20% is applied when stock size is greater than 42,500 tons. The sac roe seine fishery is allocated 58.1% of the available surplus; the food/bait fishery 16.3%; the pound spawn-on-kelp fishery 14.2%; the wild spawn-on-kelp fishery 8.0 %; and the gillnet sac roe fishery is allocated 3.4%.

During the December 99 BOF meeting several regulatory changes to PWS herring fisheries took place. Two of the new regulations could affect all five herring fisheries. New regulations were created that will standardize PWS buyer, buyer's agent, or fisherman's fish ticket reporting requirements with those in other parts of the state and closed Tatitlek Narrows to all commercial herring fishing. The BOF also created new regulations that would increase the legal depth of a purse seine used in the fall food/bait fishery and specified herring spawn-on-kelp pound marking requirements.

There are 104 permanent and 2 interim purse seine permits in Prince William Sound. Purse seines can be 150 fathoms in length and 1000 meshes deep. Mesh size is not regulated. There are 24 gillnet permits in Prince William Sound. Gillnets are limited to 100 fathoms in aggregate length and 120 meshes in depth. Mesh size is regulated from a minimum of 2 1/8 inches to a maximum of 3 inches. Historical sac roe harvest

is presented in Appendix G.4. There are 128 herring pound permits in Prince William Sound. Seine specifications for the closed pound fishery are the same as the sac roe seine fishery. Open and closed pound fisheries can be managed separately or in combination. The size of the pound is limited to 2,000 square feet at the surface and walls of a closed pound cannot exceed 30 feet in depth. The herring allocation for this fishery is divided among the number of permit holders and the department establishes the maximum number of blades of kelp a permit may maintain in the pound. The historical pound spawn-on-kelp fishery is given in Appendix G.7. The wild spawn-on-kelp fishery, utilizing native Prince William Sound kelp, occurs after a major spawning event takes place on marketable species of kelp. Wild kelp is taken by divers or by hand picking depending on the type of kelp available for harvest and market demand. The historical wild spawn-on-kelp fishery harvest is given in Appendix G.6. The food/bait fishery season may run from October 1 through January 31; however, industry concerns over product quality usually results in a delay of the season's opening date until November. Purse seine size is not restricted for the food/bait fishery and trawling or gillnetting may also occur. The historical food/bait fishery harvest is given in Appendix G.9. Historic fishery harvest values for all Prince William Sound fisheries are presented in Appendix G.13.

### **Season Summary**

In September of 2001, the department canceled the 2001 food/bait fishery, and all 2002 spring herring fisheries including the seine and gillnet sac roe harvests, the spawn-on-kelp in pound fishery, and the wild spawn-on-kelp harvest. By regulation, the Prince William Sound herring food/bait fishery is scheduled to open on October 1 of each year. Based on observed spawning biomass, miles of spawn, hydroacoustic surveys, and the spawning population's age structure in 2002, it was anticipated that the 22,000-ton minimum spawning biomass threshold needed to conduct a commercial fishery would not be reached for the 2002-2003 herring year. The peak aerial biomass estimate in 2002 was 150 tons compared to 587 tons in 2001, 1,610 tons in 2000, and 6,366 tons in 1999. The preliminary hydroacoustic biomass estimate of adult herring from spring 2002 was 10,900 mt. An estimate of the 2002-2003 spawning biomass based on the Age Structure Analysis (ASA) model was not done.

Aerial surveys were then conducted from March 20 through May 5 during 2002 to estimate biomass and document spawning activity. A total of 21.5 miles of spawn were observed in 2002 with a majority of the spawn seen in the Montague District (Appendix G.1.) A total of 2.64 miles of spawn were documented in Port Gravina, 5.88 miles in Port Fidalgo, 1.0 mile in Tatitlek, 0.44 mile in Sheep and Simpson Bay, 7.0 miles at Montague Island and 6.0 miles of spawn were seen in or near Fairmount Bay. Peak spawning occurred on April 8 when 250 tons of herring were observed. Some additional spawning may have occurred on non-survey days and on days with inclement weather that precluded flying. The peak aerial biomass estimate for 2002 was 150 tons. No spawning activity was observed in the Naked Island area. There is a recognized imprecision in estimating biomass using aerial surveys, primarily because not all herring are visible from the air at all times. This is especially true in the Montague Island area where a majority of the PWS spawning biomass has been located in the past. Results of the 2002 hydroacoustic survey estimated the herring biomass at 10,900 mt.

Size and age composition samples were collected at Montague Island, Green Island, Fairmount Bay and the Eastern District during the spring of 2002. At Montague Island, age-3 fish predominated the spawning biomass. Average weights ranged from 57 to 84 grams. The most common age class for herring collected from Landlocked Bay was also age-3, comprising more than 75% of the sample. Age-3 and age-5 fish predominated samples from Fairmount Bay St. Matthews Bay, and Hells Hole. Average weights ranged from 78 to 133 grams.

### **2002-2003 Herring Season Outlook**

Given the PWS herring spawning population's current size and age structure, a commercial harvest is not anticipated in 2003. Consecutive years of low recruitment will further delay the recovery of the herring population to a sustainable size that is capable of supporting a commercial harvest. The department will continue to monitor the PWS herring biomass to assess growth and recruitment. An ongoing disease study will continue to examine the incidence of VHS in the PWS herring population.

## LITERATURE CITED

Fried, S.M. 1994. Pacific salmon spawning escapement goals for the Prince William Sound, Cook Inlet, and Bristol Bay areas of Alaska. Alaska Department of Fish and Game, Commercial Fisheries Division, Special Publication No. 8, Juneau.

Eggers, D.M. 2002. Preliminary forecasts and projections for 2002 Alaska salmon fisheries and review of the 2001 season. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report No. 5J02-1, Juneau.

Johnson, J., D. Branshaw. 2002. Commercial salmon catch statistics for the Prince William Sound Management Area, 2002. Alaska Department of Fish and Game, Commercial Fisheries Division, Regional Information Report No. 2A02-31.

## **TABLES**

Table 1. Total commercial salmon harvest by species, gear type, and district in the Prince William Sound Management Area, 2002.

District	Effort	Chinook	Sockeye	Coho	Pink	Chum	Total
Eastern	85	1	188	25,180	355,964	9,811	391,144
Northern	47	3	1,275	381	594,112	8,632	604,403
Coghill	91	5	2,068	2,431	1,271,180	794,794	2,070,478
Southwestern	94	14	12,559	4,540	5,710,938	54,845	5,782,896
Montague	68	231	1,603	149	32,857	1,071,478	1,106,318
Southeastern	13	3	3	33	1,075	32,776	33,890
Unakwik <sup>a</sup>							
Purse Seine	120	257	17,696	32,714	7,966,126	1,972,336	9,989,129
Bering River	79	14	235	108,522	0	0	108,771
Copper River	515	38,734	1,248,503	504,223	3,677	31,627	1,826,764
Unakwik	36	5	9,825	14	0	761	10,605
Coghill	348	203	59,758	784	6,457	1,660,443	1,727,645
Eshamy	392	428	589,199	3,532	122,365	104,284	819,808
Drift Gillnet	534	39,384	1,907,520	617,075	132,499	1,797,115	4,493,593
Eshamy	28	30	241,660	525	64,421	22,987	329,623
Set Gillnet	28	30	241,660	525	64,421	22,987	329,623
Solomon Gulch	1	1	6	1	4,430,173	1,885	4,432,066
Cannery Creek	1	0	0	0	601,191	0	601,191
Wally Noerenberg	1	0	0	0	3,471,338	2,578,749	6,050,087
Main Bay	1	0	93,716	0	0	292	94,008
Armin F. Koernig	1	0	0	0	2,285,050	0	2,285,050
Hatchery <sup>b</sup>	5	1	93,722	1	10,787,752	2,580,926	13,462,402
Educational Permit	1	25	151	0	0	0	176
Donated Fish	74	4	128	0	0	4	136
Confiscated Fish	1	2	116	0	0	0	118
Total	76	31	395	0	0	4	430
<hr/>							
Prince William Sound							
Total <sup>c</sup>		39,703	2,260,993	650,315	18,950,798	6,373,368	28,275,177

<sup>a</sup> Data is confidential by AS 16.05.815

<sup>b</sup> Hatchery sales for hatchery operating costs.

<sup>c</sup> Does not include salmon taken for home use as reported on fish tickets.

Table 2. Total commercial salmon harvest by species from all gear types, Prince William Sound Area, 1971 - 2002.

Year <sup>a</sup>	Harvest					Total
	Chinook	Sockeye	Coho	Pink	Chum	
1971	20,142	741,945	327,697	7,312,730	579,552	8,982,066
1972	23,003	976,115	124,670	57,090	46,088	1,226,966
1973	22,638	473,044	199,019	2,065,844	740,017	3,500,562
1974	20,602	741,340	76,041	458,619	89,210	1,385,812
1975	22,325	546,634	84,109	4,453,041	101,286	5,207,395
1976	32,751	1,008,912	160,494	3,022,426	370,657	4,595,240
1977	22,864	943,943	179,417	4,536,459	573,166	6,255,849
1978	30,435	505,509	312,930	2,917,499	489,771	4,256,144
1979	20,078	369,583	315,774	15,615,810	349,615	16,670,860
1980	8,643	208,724	337,123	14,161,023	482,214	15,197,727
1981	20,782	784,469	396,163	20,558,304	1,888,822	23,648,540
1982	47,871	2,362,328	623,877	20,403,423	1,336,878	24,774,377
1983	53,879	908,469	365,469	13,977,116	1,048,737	16,353,670
1984	39,774	1,303,515	609,484	22,119,309	1,229,185	25,301,267
1985	43,735	1,464,563	1,025,046	25,252,924	1,321,538	29,107,806
1986	42,128	1,288,712	426,240	11,410,302	1,700,906	14,868,288
1987	41,909	1,737,989	175,214	29,230,303	1,919,415	33,104,830
1988 <sup>a</sup>	31,797	767,674	477,816	11,820,121	1,843,317	14,940,725
1989 <sup>a</sup>	32,006	1,175,238	424,980	21,886,466	1,001,809	24,520,499
1990 <sup>a</sup>	22,163	911,607	524,274	44,165,077	967,384	46,590,505
1991 <sup>b</sup>	35,355	1,734,544	641,854	37,135,561	352,321	39,899,635
1992 <sup>c</sup>	41,306	1,771,612	619,460	8,637,116	334,376	11,403,870
1993 <sup>d</sup>	32,005	1,851,133	445,612	5,761,097	1,186,365	9,276,212
1994 <sup>e</sup>	48,558	1,514,329	1,058,154	36,886,301	1,058,213	40,565,555
1995 <sup>e</sup>	67,083	1,523,464	992,798	16,221,493	864,245	19,669,083
1996 <sup>e</sup>	56,457	3,000,602	459,253	26,042,942	2,103,559	31,662,813
1997 <sup>e</sup>	52,482	4,163,074	83,113	25,836,563	2,227,190	32,362,422
1998 <sup>e</sup>	70,910	1,715,778	194,621	28,685,115	1,271,911	31,938,335
1999 <sup>e</sup>	63,434	2,035,293	244,754	45,003,656	2,989,255	50,336,392
2000 <sup>e</sup>	32,411	1,430,838	714,286	38,885,528	5,163,760	46,226,823
2001 <sup>e</sup>	40,461	2,261,097	494,135	35,246,524	3,099,794	41,142,011
1992 - 2001 Ave.	50,511	2,126,722	530,619	26,720,634	2,029,867	31,458,352
2002 <sup>e</sup>	39,706	2,262,134	650,331	18,950,931	6,373,491	28,276,593

<sup>a</sup> Includes confiscated and educational special use permits. Also includes hatchery sales harvests and carcass sales.

<sup>b</sup> Includes confiscated and educational special use permits, hatchery sales harvests, donated and discarded catches.

<sup>c</sup> Includes catches from confiscated and educational special use permits, hatchery sales harvest and test fisheries.

<sup>d</sup> Includes catches from confiscated permits, hatchery sales harvests, donated fish harvest and test fisheries.

<sup>e</sup> Includes catches from confiscated permits, all hatchery sales harvests (excluding roe salvage) and test fisheries.

Table 3. Mean price and estimated exvessel value of the total commercial salmon harvest by gear type, Prince William Sound, 2002.

PURSE SEINE					
Species	Number	Pounds	Avg. Wt.	Price <sup>a</sup>	Value
Chinook	260	4,002	15.39	\$0.34	\$1,353
Sockeye	18,837	101,890	5.41	\$0.57	\$58,142
Coho	32,730	272,470	8.32	\$0.25	\$69,207
Pink	7,966,259	27,721,568	3.48	\$0.09	\$2,425,505
Chum	1,972,459	16,156,833	8.19	\$0.15	\$2,423,525
	9,990,545	44,256,763			\$4,977,731
DRIFT GILLNET					
Species	Number	Pounds	Avg. Wt.	Price	Value
Chinook	39,384	806,947	20.49	\$3.34	\$2,691,215
Sockeye	1,907,520	12,275,917	6.44	\$1.22	\$14,964,894
Coho	617,075	5,817,879	9.43	\$0.35	\$2,027,738
Pink	132,499	454,504	3.43	\$0.05	\$23,889
Chum	1,797,115	14,789,820	8.23	\$0.15	\$2,206,854
	4,493,593	34,145,067			\$21,914,590
SET GILLNET					
Species	Number	Pounds	Avg. Wt.	Price	Value
Chinook	30	575	19.17	\$1.33	\$765
Sockeye	241,660	1,492,173	6.17	\$1.14	\$1,701,077
Coho	525	4,309	8.21	\$0.09	\$388
Pink	64,421	216,969	3.37	\$0.05	\$10,848
Chum	22,987	184,254	8.02	\$0.15	\$27,638
	329,623	1,898,280			\$1,740,716
HATCHERY SALES <sup>b</sup>					
Species	Number	Pounds	Avg. Wt.	Price	Value
Chinook	1	15	15.00	\$1.00	\$15
Sockeye	93,722	574,543	6.13	\$0.73	\$418,114
Coho	1	7	7.00	\$0.10	\$1
Pink	10,787,752	37,402,209	3.47	\$0.13	\$4,989,921
Chum	2,580,926	21,452,182	8.31	\$0.18	\$3,794,069
	13,462,402	59,428,956			\$9,202,119
OTHER GEAR <sup>c</sup>					
Species	Number	Pounds	Avg. Wt.	Price	Value
Chinook	31	589	19.00	\$0.34	\$200
Sockeye	395	2,452	6.21	\$0.54	\$1,324
Coho	0	0			\$0
Pink	0	0			\$0
Chum	4	30	7.50	\$0.15	\$5
	430	3,071			\$1,529

Gear Type	Value of Catch	No. of Permits	Average Earnings
Purse Seine	\$4,977,731	120	\$41,481
Drift Gillnet	\$21,914,590	534	\$41,039
Set Gillnet	\$1,740,716	28	\$62,168
Subtotal- Value of CPF Catch	\$28,633,038		
Hatchery	\$9,202,119		
Other Gear	\$1,529		
<b>GRAND TOTAL</b>	<b>\$37,836,686</b>		

<sup>a</sup> Mean prices are estimated at the end of the season based on the average of cash buyers and the advance prices paid by the canneries on the grounds. They do not reflect the spring adjustments paid by some companies.

<sup>b</sup> Prices are an average of sales harvest prices excluding roe sales.

<sup>c</sup> Includes the sales of confiscated fish.

Table 4. Average price paid to permit holders for salmon, Prince William Sound, 1993-2002.

Species <sup>a</sup>	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
<b>Chinook Salmon</b>										
Copper/Bering Districts	\$1.82	\$1.43	\$2.19	\$1.96	\$2.00	\$2.07	\$3.44	\$4.02	\$3.30	\$3.34
Prince William Sound	\$1.07	\$0.80	\$0.91	\$0.71	\$1.00	\$0.94	\$1.28	\$1.59	\$0.92	\$0.92
<b>Sockeye Salmon</b>										
Copper River	\$1.32	\$1.27	\$1.67	\$1.38	\$0.88	\$1.49	\$1.84	\$1.72	\$1.35	\$1.29
Bering River	\$1.40	\$1.06	\$1.44	\$1.21	\$0.88	\$1.35	\$1.81	\$1.72	\$1.35	\$1.29
Coghill/Unakwik Districts	\$0.93	\$0.94	\$0.75	\$0.82	\$0.80	\$1.24	\$1.60	\$1.14	\$0.77	\$0.64
Eshamy	\$0.86	\$1.19	\$1.06	\$0.85	\$0.80	\$1.11	\$0.89	\$1.14	\$0.77	\$1.14
General Purse Seine	\$0.83	\$0.88	\$0.94	\$0.73	\$0.85	\$1.06	\$1.18	\$0.90	\$0.74	\$0.56
<b>Coho Salmon</b>										
Copper/Bering Districts	\$0.80	\$0.74	\$0.52	\$0.53	\$0.30	\$0.46	\$0.58	\$0.57	\$0.32	\$0.35
Prince William Sound	\$0.77	\$0.60	\$0.42	\$0.36	\$0.30	\$0.33	\$0.33	\$0.42	\$0.26	\$0.26
Pink Salmon	\$0.16	\$0.16	\$0.18	\$0.07	\$0.12	\$0.13	\$0.15	\$0.15	\$0.13	\$0.09
Chum Salmon	\$0.68	\$0.45	\$0.45	\$0.13	\$0.27	\$0.22	\$0.21	\$0.28	\$0.37	\$0.15

<sup>a</sup> Based on processor reports, fish tickets and other sources prior to 1995. After 1995 prices are based on processor reports. A weighted average is generally used. Prices generally do not reflect post season adjustments and are an estimate. Caution should be used if using these prices to estimate value.

Table 5. Estimated exvessel value of the total commercial salmon harvest by gear type, Prince William Sound, 1992 - 2002.

Species	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
<b>PURSE SEINE</b>											
Chinook	2,044	379	1,104	1,169	570	3,422	4,386	7,427	2,706	5,435	1,353
Sockeye	313,794	169,236	432,156	205,178	111,337	151,532	127,854	141,923	195,169	539,388	58,142
Coho	277,682	21,288	208,661	327,260	314,773	125,946	124,325	329,317	965,404	398,532	69,207
Pink	2,950,733	1,469,531	12,537,403	6,736,581	4,445,231	6,795,323	8,565,392	9,456,108	13,728,606	9,584,466	2,425,505
Chum	125,639	22,344	164,181	152,047	386,967	1,742,759	950,912	3,128,816	3,964,546	2,863,466	2,423,525
	\$3,669,892	\$1,682,778	\$13,343,505	\$7,422,236	\$5,258,878	\$8,818,982	\$9,772,869	\$13,063,591	\$18,856,431	\$13,391,287	\$4,977,731
<b>DRIFT GILLNET</b>											
Chinook	2,504,789	1,180,382	1,534,059	3,573,848	2,259,958	2,367,538	3,341,148	5,510,840	2,698,417	2,791,619	2,691,215
Sockeye	18,901,370	11,767,820	9,209,486	12,864,113	23,037,225	19,796,170	13,223,761	20,048,000	13,554,212	14,158,076	14,964,894
Coho	4,155,833	2,702,999	7,129,685	4,207,678	1,450,095	57,798	379,366	733,022	2,486,184	790,544	2,027,738
Pink	213,996	115,040	127,997	165,462	12,028	83,398	249,293	43,612	177,559	144,896	23,889
Chum	1,037,032	3,091,611	2,393,837	1,709,831	1,229,842	1,567,526	1,035,808	1,529,765	3,550,614	3,371,206	2,206,854
	\$26,813,021	\$18,857,852	\$20,395,065	\$22,520,932	\$27,989,149	\$23,872,430	\$18,229,376	\$27,865,239	\$22,466,986	\$21,256,342	\$21,914,590
<b>SET GILLNET</b>											
Chinook	1,973	848	121	182	148	159	25	592	2,902	787	765
Sockeye	1,355,943	517,182	638,164	181,653	697,572	1,055,286	177,723	407,497	912,603	844,123	1,701,077
Coho	8,321	4,343	3,513	2,003	612	340	336	1,877	3,346	1,686	388
Pink	248,170	48,618	117,298	18,892	2,373	20,477	16,659	8,721	53,160	22,048	10,848
Chum	22,316	97,911	18,675	21,018	11,312	17,242	337	13,630	25,641	20,045	27,638
	\$1,636,724	\$668,901	\$777,770	\$223,747	\$712,017	\$1,093,504	\$195,079	\$432,317	\$997,652	\$888,689	\$1,740,716
<b>HATCHERY SALES</b>											
Chinook	27,218	26,736	11,526	11,692	91	1,252	22,621	0	0	0	15
Sockeye	1,573,671	371,621	358,077	380,378	444,198	1,381,948	953,857	143,855	478	174,418	418,114
Coho	352,390	11,712	82,571	28,759	100,413	7,090	63,980	0	2	9,459	1
Pink	2,196,778	1,472,128	7,222,015	4,157,847	4,076,578	5,814,214	6,283,525	6,312,337	6,358,529	6,430,468	4,989,921
Chum	157,616	1,576,882	1,598,524	895,509	1,430,814	1,758,276	1,261,354	2,380,521	4,007,449	3,070,274	3,794,069
	\$4,307,673	\$3,459,882	\$9,272,731	\$5,474,186	\$6,052,094	\$8,965,780	\$8,585,338	\$8,836,513	\$10,366,458	\$9,684,619	\$9,202,119
<b>OTHER GEAR</b>											
Chinook	143	154	143	25	76	0	5,004	448	1,266	0	200
Sockeye	80,141	52,272	3,686	27,880	2,582	2,085	2,085	68,525	5,944	509	1,324
Coho	5,293	751	89	479	0	0	10	106	0	468	0
Pink	2,066	9,084	28,287	88,152	0	1	271	81,476	0	382	0
Chum	13,389	16,066	35,139	4,234	1	190	13	358	600	4,206	5
	\$101,031	\$78,327	\$67,344	\$120,771	\$2,659	\$2,276	\$7,383	\$150,913	\$7,811	\$5,364	\$1,529
<b>AVERAGE EARNINGS</b>											
Purse Seine	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Drift Gillnet	\$17,729	\$11,686	\$78,032	\$39,691	\$58,432	\$77,359	\$65,590	\$93,983	\$143,942	\$88,101	\$41,481
Set Gillnet	\$50,782	\$36,688	\$39,990	\$43,477	\$54,989	\$45,909	\$34,922	\$53,280	\$41,994	\$39,731	\$41,039
	\$54,557	\$22,297	\$29,914	\$8,606	\$26,371	\$42,058	\$12,192	\$20,587	\$35,630	\$27,772	\$62,168
<b>NUMBER OF PERMITS FISHED</b>											
Purse Seine	207	144	171	187	90	114	149	139	131	152	120
Drift Gillnet	528	514	510	518	509	520	522	523	520	535	534
Set Gillnet	30	30	26	26	27	26	16	21	28	32	28

Table 6. Preseason harvest projections for the 2002 commercial salmon fishery by district and species, Prince William Sound Area.

District <sup>a</sup>	COMMERCIAL HARVEST (1,000's of fish)														
	Chinook			Sockeye			Coho			Pink			Chum		
	Point Estimate	Range	Point Estimate	Range	Point Estimate	Range	Point Estimate	Range	Point Estimate	Range	Point Estimate	Range	Point Estimate	Range	
Copper River <sup>b</sup>	49.1	29.8 - 68.5	710.0	160.0 - 1,260.0	302.0	86.7 - 517.3									
Bering River <sup>c</sup>			17.9	7.2 - 28.7	111.2	0.0 - 252.6									
Coghill <sup>d</sup>			70.6	12.9 - 224.0											
Eshamy			6.0	0.0 - 17.9											
General P.W.S. Districts			10.1	7.8 - 12.5					3,200.0	0.0 - 6,500.0	690.0	460.0 - 920.0			
Total Wild Stock	49.1	29.8 - 68.5	814.6	187.9 - 1,543.1	413.2	86.7 - 769.9			3,200.0	0.0 - 6,500.0	690.0	460.0 - 920.0			
Solomon Gulch					138.3	107.33 - 169.10			2,800.0	1,000.0 - 4,000.0					
Armin F. Koemig									4,300.0	3,100.0 - 5,500.0	30.0	20.0 - 40.0			
Wally Noerenberg <sup>e</sup>					16.0	12.1 - 19.7			3,800.0	2,800.0 - 5,000.0	1,030.0	240.0 - 1,950.0			
Cannery Creek									2,600.0	2,000.0 - 3,300.0					
Main Bay <sup>f</sup>			420.5	410.9 - 425.9											
Gulkana			300.0	50.0 - 560.0											
Total Hatchery			720.5	460.9 - 985.9	154.3	117.8 - 189.8			13,500.0	8,900.0 - 17,800.0	1,060.0	260.0 - 1,990.0			
Total															
Hatchery and Wild	49.1	29.8 - 68.5	1,535.1	648.8 - 2,529.0	567.5	204.5 - 959.7			16,700.0	8900.0 - 24,300.0	1,750.0	720.0 - 2,910.0			

<sup>a</sup> Formal forecast procedures are used for estimating wild stock returns for pink and chum salmon in PWS. Hatchery contributions are based on known fry releases and average marine survival rates. General PWS sockeye salmon production is based upon average harvest. Harvest estimates are made only for those species which constitute a significant portion of the catch. The harvest projections do not include salmon projected for harvest by hatcheries for cost recovery.

<sup>b</sup> Formalized forecast procedures are used for Copper River chinook and sockeye salmon runs. Copper River coho salmon catches are based on the mean annual harvest.

<sup>c</sup> Bering River coho salmon harvest estimates are based on mean annual harvest.

<sup>d</sup> Coghill sockeye salmon runs are formally forecast using a sibling relationship model for the major age class and spawner recruit relationships for other age classes. The Coghill District's wild pink and chum salmon harvest is included in the "General PWS Districts" projection.

<sup>e</sup> WNH chum salmon harvest estimate includes all on-site and remote returns of chum salmon.

<sup>f</sup> Main Bay sockeye salmon harvest estimate includes all on-site and remote returns of sockeye salmon.

Table 7. A listing of finfish processors, their location of operation, and type of product processed, Prince Willam Sound Area, 2002.

Executive Names, Address Location of Operations	Processor Code	Type of Product	Executive Names, Address Location of Operations	Processor Code	Type of Product
Alaska Smokin Pauls Whittier Boat Harbor Whittier, AK 99693 Paul McMullin	F3933	Salmon	Norquest Seafoods P.O. Box 260 Cordova, AK 99574 Bill Gilbert	F1484 F1486	Salmon
Bear and Wolf Salmon Co. 4209 21st Ave W. Seattle, WA 98199 Peter Kuttel	F4287	Salmon	North Pacific Processors, Inc. P.O. Box 1040 Cordova, Alaska 99574 Ken Roemhildt	F0232	Salmon
Cook Inlet Processing P.O. Box 8163 Nikiski, Alaska 99635 Tim Blott	F0186 F1155	Salmon	Ocean Beauty Seafoods P.O. Box 548 Cordova, AK 99574 Hap Symmonds	F1930	Salmon
Copper River Seafoods P.O. Box 158 Cordova, AK 99574 Robyn McKenzie	F2977	Salmon	Peter Pan Seafoods, Inc. P.O. Box 1027 Valdez, Alaska 99686 Mark Hansen	F1041	Salmon
Deep Creek Custon Packing P.O. Box 39229 Ninilchik, Alaska 99639 Jeff Berger	F1051	Salmon	Potter's Own Fine Fish Box 1472 Cordova, AK 99574 Carol Potter	F3346	Salmon
FAVCO Box 190968 Anchorage, AK 99519 Bill Buck	F0398	Salmon	Prime Select Seafoods, Inc. P.O. Box 846 Cordova, Alaska 99574 Susan Laird	F1816	Salmon
Glacier Creek H.C. Box 8610 Bird Creek, AK 99540 Steve Aberle	F1826 F1876	Salmon	Prince William Sound Aquaculture P.O. Box 1110 Cordova, Alaska 99574 Monica Bradley	F1901,F1903 F2465 F2902 F3468	Salmon Salmon roe
Great Pacific Seafoods, Inc. P.O. Box 710 Whittier, AK 99693 Andrea Tesch	F1267	Salmon	Sea Hawk Seafoods P.O. Box 247 Valdez, AK 99686 Cary Cox	F0223	Salmon
Icicle Seafoods Inc. P.O. Box 8 Seward, Alaska 99664 Tim Schmidt	F0135	Salmon	Snug Harbor Box 701 Kenai, AK 99611 Brenda Stoops	F3894	Salmon
Nautilus Foods P.O. Box 727 Valdez, AK 99686 Tom Waterer	F2003	Salmon	Valdez Fisheries Development P.O. Box 125 Valdez, Alaska 99686 Dave Cobb/Laura Weaver	F1355	Salmon Salmon roe

## **FIGURES**

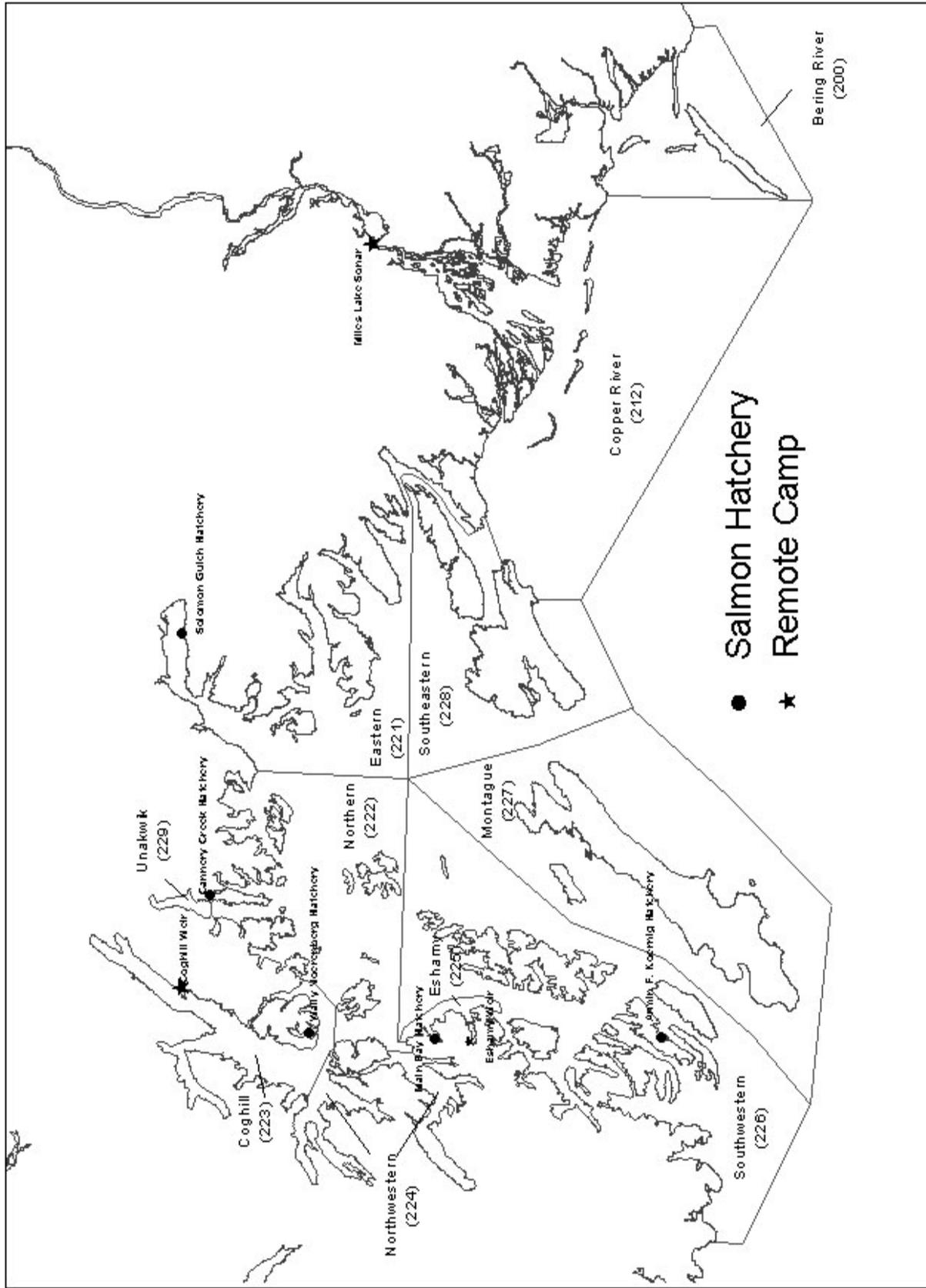


Figure 1. Prince William Sound Management Area showing commercial fishing districts, salmon hatcheries, weir locations, and Miles Lake sonar camp.

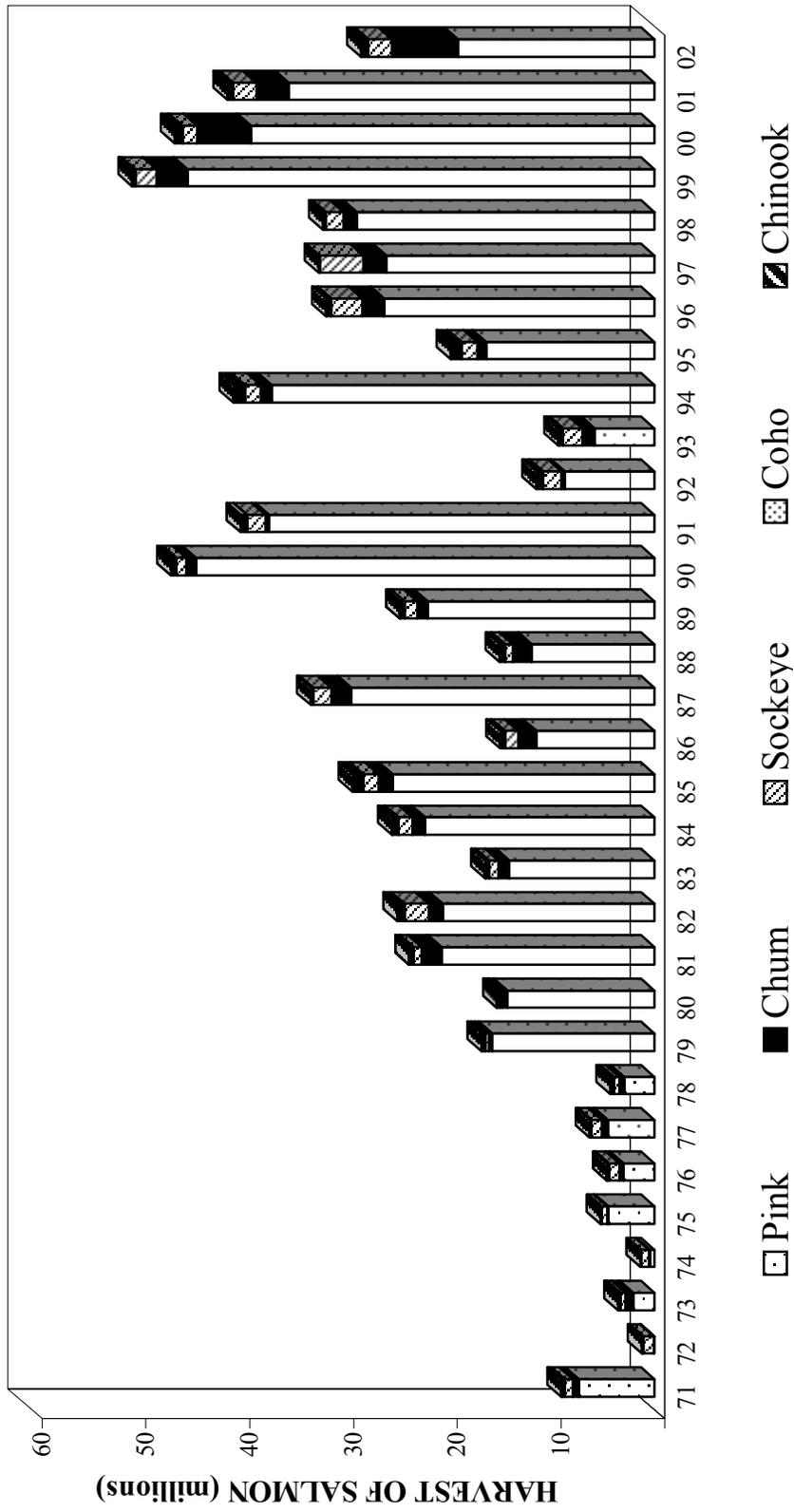


Figure 2. Commercial salmon harvest by species for all gear types combined, Prince William Sound, 1971 - 2002.

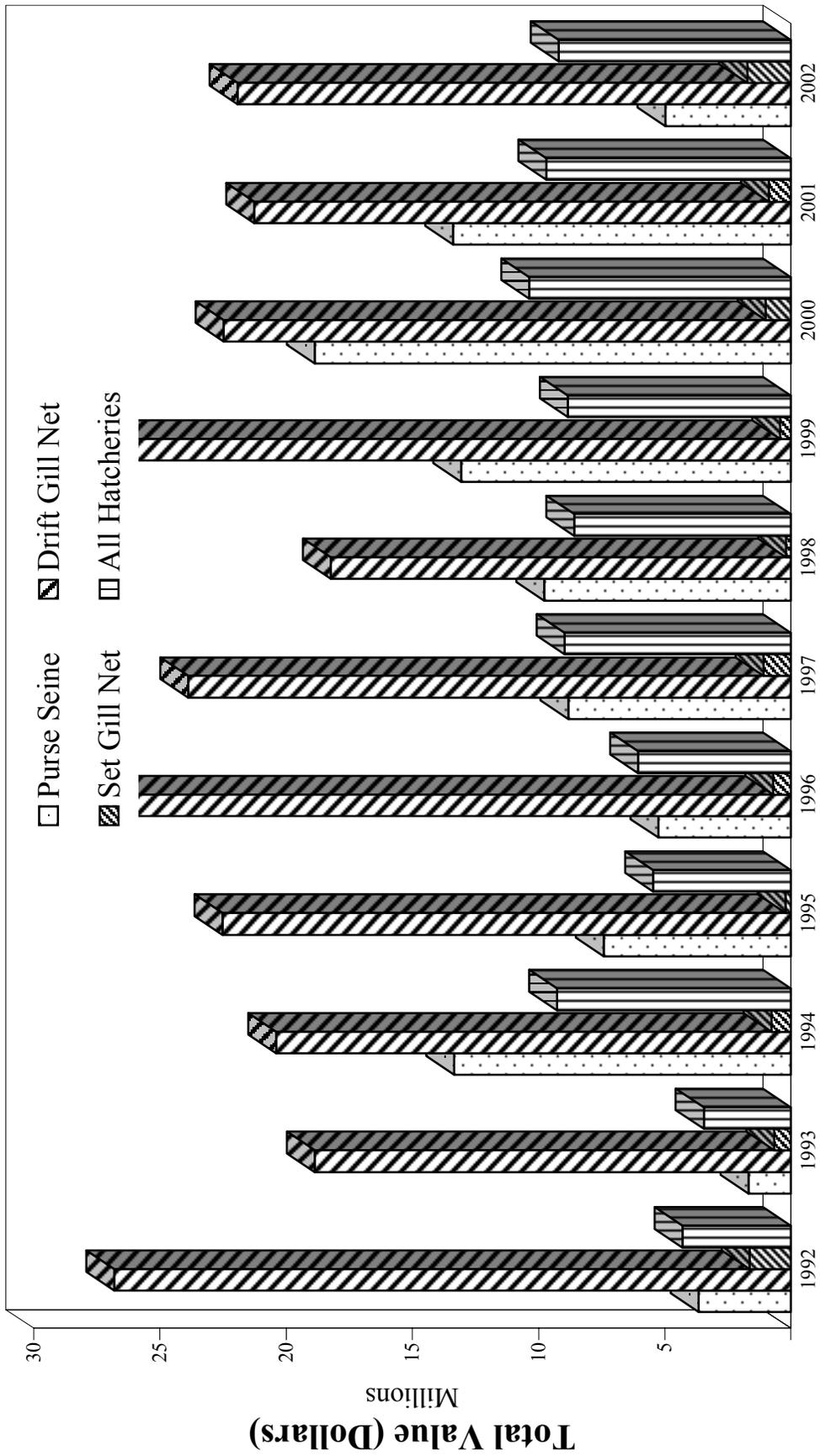
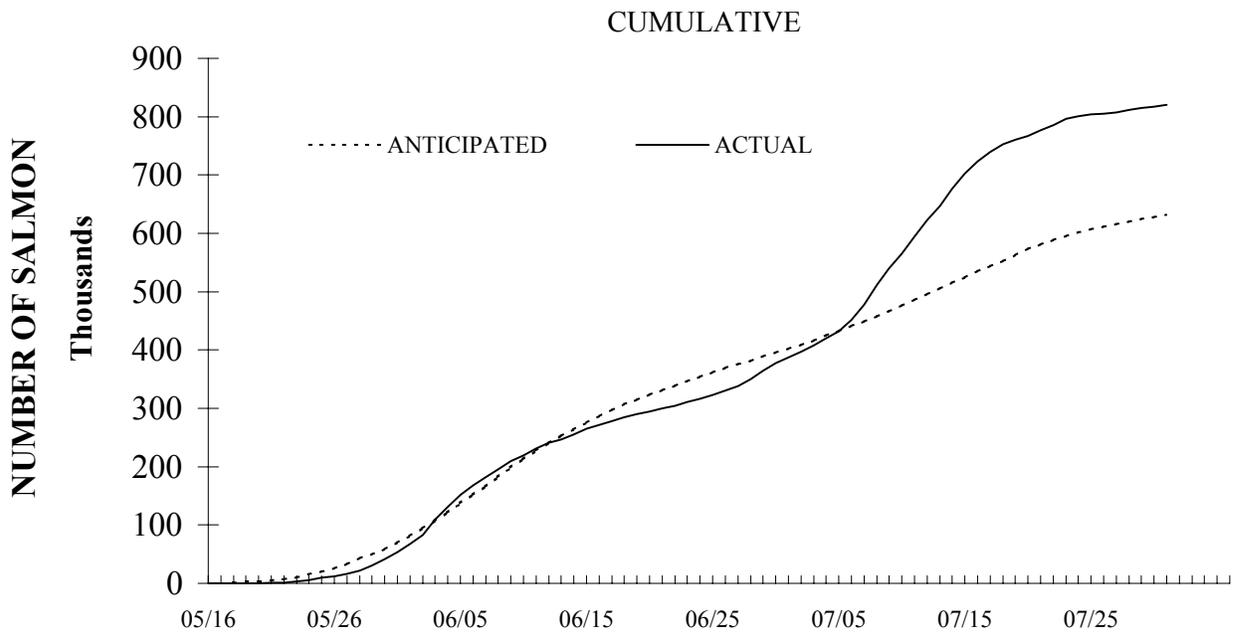
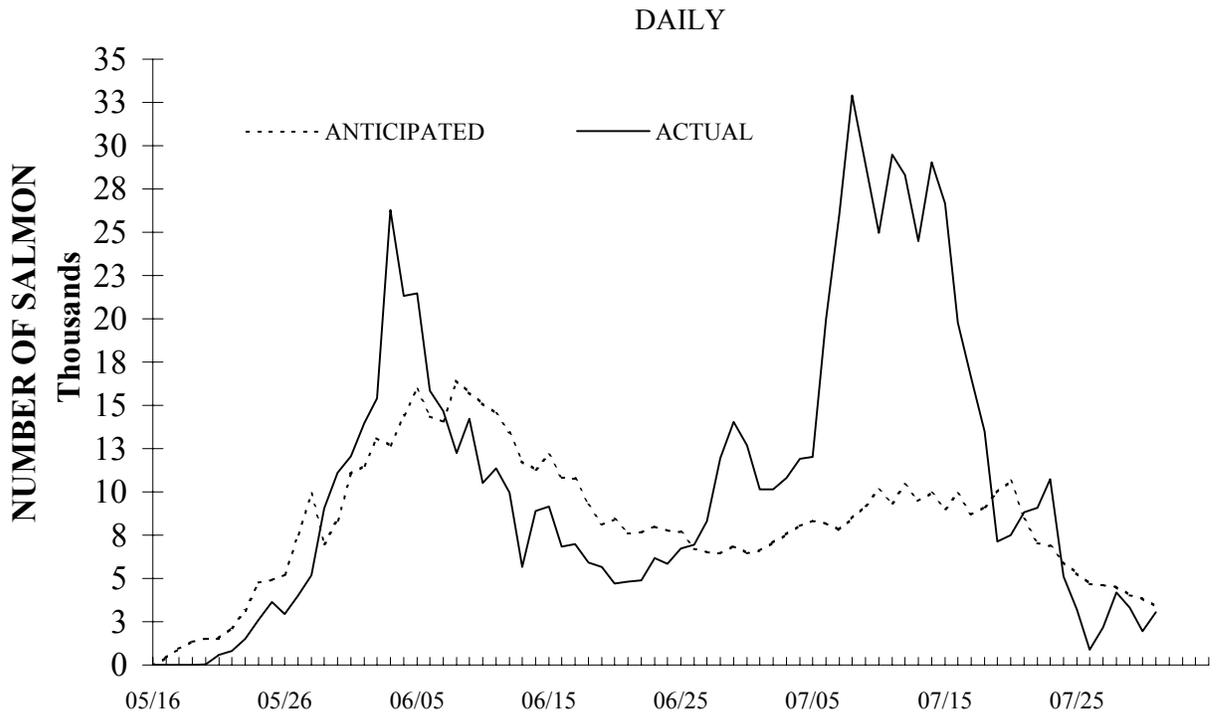


Figure 3. Exvessel value of the commercial salmon harvest by gear type, 1992 - 2002.



## **APPENDICES**

### **APPENDIX A: COPPER RIVER AND BERING RIVER DISTRICTS**



Appendix A.1. Anticipated versus actual daily and cumulative salmon escapement.

Appendix A.2. Total commercial salmon harvest by species in the Copper River District, 1974-2002.

Year	Chinook	Sockeye	Coho	Pink	Chum	Total
1974	18,980	607,766	46,625	9,839	664	683,874
1975	19,644	335,384	53,805	236	807	409,876
1976	31,479	865,195	111,900	3,392	178	1,012,144
1977	21,722	602,737	131,356	23,185	335	779,335
1978	29,062	249,872	220,338	3,512	2,233	505,017
1979	17,678	80,528	194,885	1,295	107	294,493
1980	8,454	18,908	225,299	3,966	198	256,825
1981	20,178	477,662	310,154	23,952	1,799	833,745
1982	47,362	1,177,632	454,763	7,154	1,177	1,688,088
1983	52,500	626,735	234,243	7,345	2,217	923,040
1984	38,957	900,043	382,432	32,194	6,935	1,360,561
1985	42,214	927,553	587,990	19,061	5,966	1,582,784
1986	40,670	780,808	295,980	3,016	17,614	1,138,088
1987	41,001	1,180,782	111,599	31,635	14,796	1,379,813
1988	30,741	576,950	315,568	2,775	11,022	937,056
1989	30,863	1,025,923	194,454	25,877	5,845	1,282,962
1990	21,702	844,778	246,797	1,596	7,545	1,122,418
1991	34,787	1,206,811	385,086	1,246	20,220	1,648,150
1992	39,810	970,938	291,627	1,664	5,807	1,309,846
1993	29,727	1,398,234	281,469	9,579	13,002	1,732,011
1994	47,061	1,152,220	677,633	12,079	19,055	1,908,048
1995	65,675	1,271,822	542,658	19,809	56,100	1,956,064
1996	55,646	2,356,365	193,042	6,372	25,533	2,636,958
1997	51,273	2,955,431	18,656	8,483	2,465	3,036,308
1998	68,827	1,341,692	108,232	20,829	5,022	1,544,602
1999	62,337	1,682,559	153,061	10,205	25,321	1,933,483
2000	31,259	880,334	304,944	9,804	5,363	1,231,704
2001	39,524	1,323,577	251,473	9,387	2,789	1,626,750
2002	38,734	1,248,503	504,223	3,677	31,627	1,826,764
Ten Year Average (1992-2001)	49,114	1,533,317	282,280	10,821	16,046	1,891,577

Appendix A.3. Daily sockeye salmon escapement at Miles Lake sonar, 2002.

Date	Water Level <sup>a</sup>	Estimated Daily Escapement				Escapement Objective		0600 Count	Projected Daily
		North Bank	South Bank	Daily	Cumulative	Daily	Cumulative		
15-May	39.89	71 <sup>b</sup>		71	71	0	0		
16-May	39.84	2		2	73	0	0		
17-May	40.02	4		4	77	405	405		
18-May	39.76	2	0 <sup>c</sup>	2	79	971	1,376		
19-May	39.91	0	17	17	96	1,365	2,741		
20-May	40.04	2	32	34	130	1,558	4,300		
21-May	40.24	98	477	575	705	1,556	5,856	78	312
22-May	40.40	23	802	825	1,530	2,133	7,989	166	664
23-May	40.69	75	1,429	1,504	3,034	3,122	11,111	244	976
24-May	40.78	288	2,324	2,612	5,646	4,797	15,908	414	1,656
25-May	40.89	146	3,488	3,634	9,280	4,914	20,822	822	3,288
26-May	41.07	169	2,787	2,956	12,236	5,231	26,053	608	2,432
27-May	41.29	261	3,748	4,009	16,245	7,554	33,607	830	3,320
28-May	41.41	119	5,054	5,173	21,418	9,900	43,507	862	3,448
29-May	41.33	238	8,817	9,055	30,473	6,981	50,488	1,584	6,336
30-May	41.33	266	10,848	11,114	41,587	8,330	58,818	2,260	9,040
31-May	41.46	838	11,204	12,042	53,629	11,013	69,831	3,247	12,988
01-Jun	41.53	1,030	12,945	13,975	67,604	11,490	81,321	2,749	10,996
02-Jun	41.35	818	14,597	15,415	83,019	13,132	94,453	3,577	14,308
03-Jun	41.17	2,564	23,723	26,287	109,306	12,684	107,137	7,508	30,032
04-Jun	41.12	1,339	19,995	21,334	130,640	14,409	121,546	5,406	21,624
05-Jun	41.04	1,011	20,462	21,473	152,113	15,924	137,470	4,118	16,472
06-Jun	41.02	1,194	14,637	15,831	167,944	14,380	151,850	2,870	11,480
07-Jun	41.22	636	14,024	14,660	182,604	14,087	165,937	2,720	10,880
08-Jun	41.28	529	11,705	12,234	194,838	16,446	182,383	3,359	13,436
09-Jun	41.40	769	13,470	14,239	209,077	15,738	198,121	3,636	14,544
10-Jun	41.39	646	9,876	10,522	219,599	15,101	213,222	3,050	12,200
11-Jun	41.39	569	10,803	11,372	230,971	14,518	227,740	2,804	11,216
12-Jun	41.35	619	9,327	9,946	240,917	13,425	241,165	2,733	10,932
13-Jun	41.25	550	5,098	5,648	246,565	11,782	252,947	1,896	7,584
14-Jun	41.18	358	8,545	8,903	255,468	11,285	264,232	1,716	6,864
15-Jun	41.38	464	8,698	9,162	264,630	12,115	276,346	2,774	11,096
16-Jun	41.76	553	6,300	6,853	271,483	10,818	287,165	2,137	8,548
17-Jun	42.05	247	6,738	6,985	278,468	10,784	297,949	2,002	8,008
18-Jun	42.30	146	5,764	5,910	284,378	9,243	307,192	1,652	6,608
19-Jun	42.63	251	5,400	5,651	290,029	8,134	315,325	1,373	5,492
20-Jun	42.65	210	4,499	4,709	294,738	8,436	323,762	1,266	5,064
21-Jun	42.61	171	4,640	4,811	299,549	7,639	331,400	1,317	5,268
22-Jun	42.49	189	4,693	4,882	304,431	7,687	339,087	1,475	5,900
23-Jun	42.43	125	6,060	6,185	310,616	8,015	347,101	1,632	6,528
24-Jun	42.43	95	5,752	5,847	316,463	7,797	354,898	1,473	5,892
25-Jun	42.41	250	6,473	6,723	323,186	7,685	362,583	1,491	5,964
26-Jun	42.41	213	6,737	6,950	330,136	6,734	369,317	1,700	6,800
27-Jun	42.36	337	7,988	8,325	338,461	6,530	375,846	1,948	7,792
28-Jun	42.18	509	11,438	11,947	350,408	6,471	382,317	2,821	11,284
29-Jun	42.09	579	13,448	14,027	364,435	6,873	389,191	2,760	11,040
30-Jun	42.22	548	12,148	12,696	377,131	6,482	395,672	3,841	15,364
01-Jul	42.33	151	9,995	10,146	387,277	6,627	402,299	2,677	10,708

-Continued-

Appendix A.3. (page 2 of 2)

Date	Water Level <sup>a</sup>	Estimated Daily Escapement				Escapement Objective		0600 Count	Projected Daily
		North Bank	South Bank	Daily	Cumulative	Daily	Cumulative		
02-Jul	42.44	350	9,784	10,134	397,411	7,074	409,373	2,016	8,064
03-Jul	42.43	494	10,332	10,826	408,237	7,536	416,910	2,820	11,280
04-Jul	42.49	351	11,572	11,923	420,160	8,044	424,954	3,108	12,432
05-Jul	42.71	298	11,731	12,029	432,189	8,343	433,297	3,003	12,012
06-Jul	42.71	562	19,389	19,951	452,140	8,205	441,502	4,093	16,372
07-Jul	42.46	1,157	24,904	26,061	478,201	7,812	449,314	4,467	17,868
08-Jul	42.39	1,015	31,897	32,912	511,113	8,438	457,752	7,339	29,356
09-Jul	42.47	1,643	27,275	28,918	540,031	9,197	466,950	8,208	32,832
10-Jul	42.47	1,282	23,692	24,974	565,005	10,122	477,072	5,235	20,940
11-Jul	42.66	1,899	27,572	29,471	594,476	9,341	486,412	5,287	21,148
12-Jul	42.75	2,345	25,954	28,299	622,775	10,421	496,834	7,182	28,728
13-Jul	42.69	1,416	23,062	24,478	647,253	9,478	506,312	5,875	23,500
14-Jul	42.54	2,575	26,463	29,038	676,291	9,926	516,238	6,617	26,468
15-Jul	42.50	1,789	24,863	26,652	702,943	9,022	525,260	7,175	28,700
16-Jul	42.61	1,081	18,706	19,787	722,730	9,908	535,168	5,784	23,136
17-Jul	42.71	941	15,644	16,585	739,315	8,697	543,865	4,482	17,928
18-Jul	42.98	480	13,003	13,483	752,798	9,104	552,969	2,935	11,740
19-Jul	43.27	220	6,896	7,116	759,914	9,968	562,937	2,209	8,836
20-Jul	43.22	385	7,129	7,514	767,428	10,622	573,559	1,378	5,512
21-Jul	43.02	477	8,340	8,817	776,245	8,423	581,982	1,484	5,936
22-Jul	42.95	604	8,463	9,067	785,312	7,062	589,045	2,210	8,840
23-Jul	42.91	1,121	9,610	10,731	796,043	6,876	595,921	3,103	12,412
24-Jul	43.12	455	4,638	5,093	801,136	5,943	601,864	1,362	5,448
25-Jul	43.63	277	2,929	3,206	804,342	5,277	607,141	1,144	4,576
26-Jul	44.03	85	786	871	805,213	4,703	611,844	230	920
27-Jul	43.59	237	1,933	2,170	807,383	4,615	616,459	119	476
28-Jul	43.06	1,083	3,090	4,173	811,556	4,508	620,968	862	3,448
29-Jul	43.02	572	2,737	3,309	814,865	4,056	625,024	910	3,640
30-Jul	43.32	530	1,430	1,960	816,825	3,874	628,898	593	3,640
31-Jul	43.30	1,290	1,771	3,061	819,886	3,393	632,291	497	2,982

<sup>a</sup> Stage Height (meters).

<sup>b</sup> North Bank counter in May 13.

<sup>c</sup> South Bank counter in May 18 (1700).

Appendix A.4. Anticipated and actual semi-weekly harvest and escapement of sockeye salmon in the Copper River District drift gillnet fishery, 2002.

Semi-Weekly Date	Fishing Time (Hrs.)	Anticipated Harvest	Actual Harvest <sup>a</sup>	Anticipated Cumulative Escapement <sup>b</sup>	Actual Cumulative Escapement <sup>c</sup>	
18-May	Sat	6	27,496	55,867	1,376	79
22-May	Wed	12	47,725	117,427	7,989	1,530
25-May	Sat	12	45,718	226,564	20,822	9,280
29-May	Wed	12	78,076	161,574	50,488	30,473
1-Jun	Sat	0	57,983		81,321	67,604
5-Jun	Wed	24	64,384	230,723	137,470	152,113
8-Jun	Sat	24	39,370	44,034	182,383	194,838
12-Jun	Wed	24	38,898	42,269	241,165	240,917
15-Jun	Sat	24	23,772	60,560	276,346	264,630
19-Jun	Wed	12	35,028	28,417	315,325	290,029
22-Jun	Sat	0	24,125		339,087	304,431
26-Jun	Wed	0	40,747		369,317	330,136
29-Jun	Sat	0	29,741		389,191	364,435
3-Jul	Wed	0	38,827		416,910	408,237
6-Jul	Sat	12	31,010	48,854	441,502	452,140
10-Jul	Wed	12	40,527	96,007	477,072	565,005
13-Jul	Sat	24	30,634	55,355	506,312	647,253
17-Jul	Wed	24	32,244	35,929	543,865	739,315
20-Jul	Sat	36	20,285	20,954	573,559	767,428
24-Jul	Wed	36	22,560	10,630	595,921	796,043
27-Jul	Sat	36	9,136	3,334	616,459	807,383
31-Jul	Wed	36	10,382	4,078	632,291	819,886
3-Aug	Sat	36	4,173	3,034	640,911	
7-Aug	Wed	24	4,578	2,217	647,250	
10-Aug	Sat	0	2,408		649,223	
14-Aug	Wed	24	1,253	391	650,462	
17-Aug	Sat	0	740		651,042	
21-Aug	Wed	24	649	179	651,321	
24-Aug	Sat	0	374		651,453	
28-Aug	Wed	24	270	56	651,487	
31-Aug	Sat	12	143	19	651,487	
4-Sep	Wed	24	113	13	651,493	
7-Sep	Sat	36	57	12	651,500	
11-Sep	Wed	36	22	2		
14-Sep	Sat	84	9	4		
Total	690	803,458	1,248,503			

<sup>a</sup> Based on average historical harvests for comparable dates (1992-1999).

<sup>b</sup> Based on historical escapements at Miles Lake sonar, includes upriver chinook salmon escapement component and sockeye salmon broodstock for the Gulkana Hatchery. Does not include sockeye salmon escapements for the Copper/Bering delta streams.

<sup>c</sup> Escapement estimate from sonar counters at Miles Lake. Sonar counts ended July 31.

Appendix A.5. Copper River and Bering River area sockeye salmon escapement indices, 1993 - 2002.

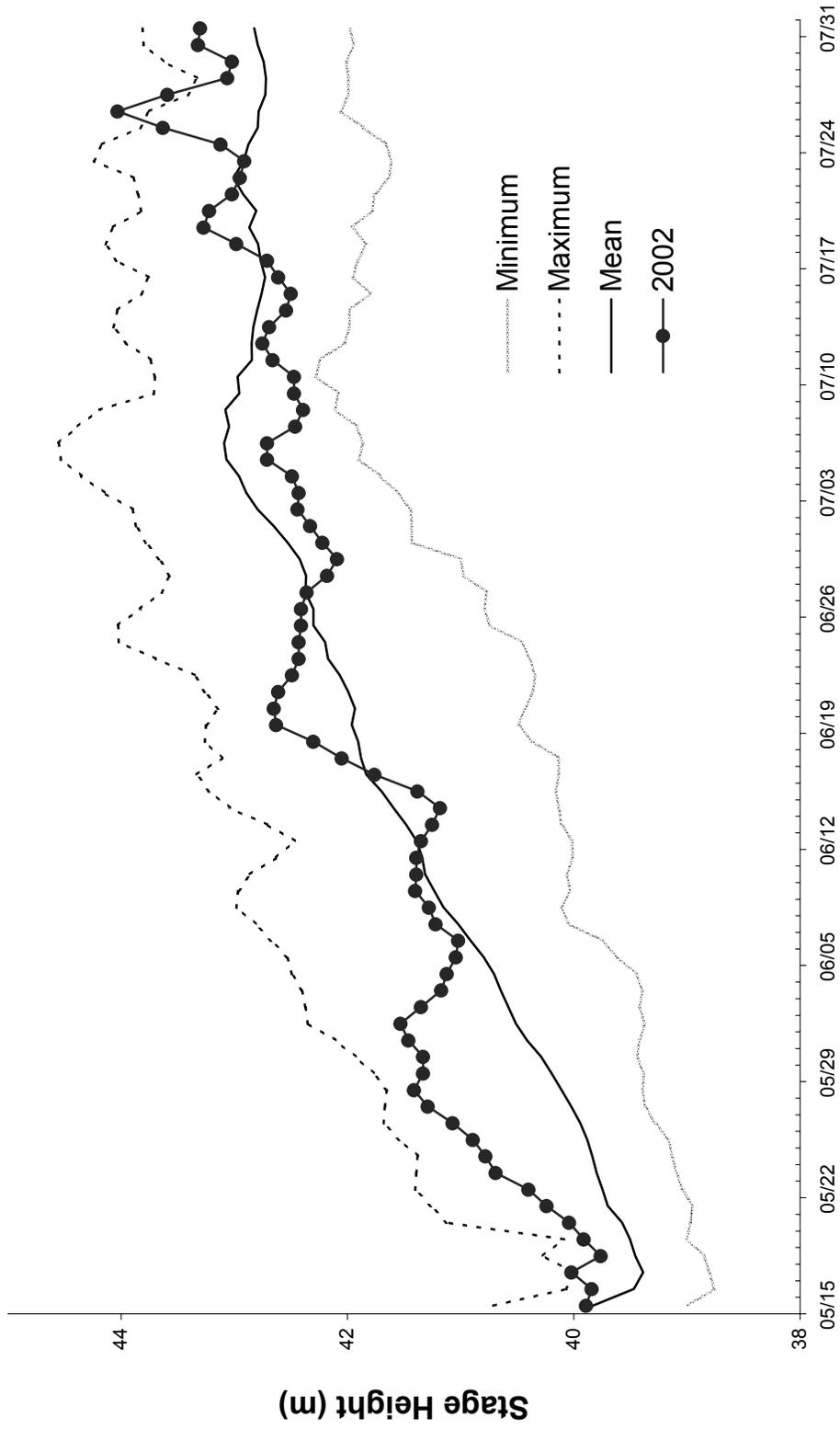
Stream/Lake <sup>a,b</sup>	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Eyak Lake	16,400	18,040	17,720	16,110	d	16,300	18,100	20,500	7,400	13,375
Hatchery Creek	1,100	2,800	3,700	1,900	d	3,300	200	2,800	950	1,700
Power Creek	700	500	650	1,200	d	1,500	1,400	6,700	2,450	1,600
Ibek Creek	d	800	d	100	d	d	50	d	1,500	0
McKinley Lake	7,700	12,700	13,100	8,600	8,500	11,300	400	2,850	2,080	4,200
Salmon Creek	3,000	420	200	2,600	3,100	3,300	7,100	4,220	9,650	4,900
26/27 Mile Creek	1,625	4,900	2,000	1,440	1,700	1,800	3,800	3,300	4,000	850
39 Mile Creek	4,000	7,000	5,400	6,200	9,300	11,500	12,000	6,500	9,000	10,000
Goat Mountain	d	600	650	1,000	350	300	60	60	5	70
Pleasant Creek	2,270	1,400	1,600	1,400	5,000	1,000	7,615	2,300	8,100	2,425
Martin River	1,500	4,700	1,500	2,700	1,100	2,700	2,800	2,650	200	700
Ragged Pt. River/Lake	1,325	0	6,200	1,540	4,400	4,800	5,900	3,600	2,900	3,375
Martin Lake	6,700	13,100	9,450	9,000	13,100	13,600	19,150	22,900	7,100	10,600
Pothole Lake	700	950	1,200	1,160	300	1,500	2,100	3,050	1,910	8,400
L. Martin Lake	1,900	1,760	2,500	300	470	750	1,800	830	825	2,540
Tokun Lake/River	3,400	2,850	7,150	7,150	5,750	8,950	7,600	6,485	5,695	6,500
Martin River Slough	5,400	5,850	3,350	3,070	4,000	4,900	10,900	9,300	7,300	4,500
<b>Copper River Delta Total</b>	<b>57,720</b>	<b>78,370</b>	<b>76,370</b>	<b>65,470</b>	<b>57,070</b>	<b>87,500</b>	<b>100,975</b>	<b>98,045</b>	<b>71,065</b>	<b>75,735</b>
<b>Upper Copper River<sup>c</sup></b>	<b>833,387</b>	<b>715,577</b>	<b>599,265</b>	<b>906,239</b>	<b>1,148,079</b>	<b>866,957</b>	<b>850,951</b>	<b>587,497</b>	<b>833,569</b>	<b>819,886</b>
<b>Copper River Dist. Tot.</b>	<b>891,107</b>	<b>793,947</b>	<b>675,635</b>	<b>971,709</b>	<b>1,205,149</b>	<b>954,457</b>	<b>951,926</b>	<b>685,542</b>	<b>904,634</b>	<b>895,621</b>
Bering River/Lake	23,120	23,000	28,650	22,420	d	21,600	39,030	21,050	7,750	19,540
Shepherd Creek	3,100	1,400	2,600	2,000	1,400	d	1,215	950	60	60
Stillwater Creek	500	800	900	1,100	700	400	950	320	320	350
Kushtaka Lake	205	150	400	990	65	500	1,100	700	293	265
Katalla River	800	1,200	900	800	700	900	3,900	1,200	400	4,500
<b>Bering River Area Tot.</b>	<b>27,725</b>	<b>26,550</b>	<b>33,450</b>	<b>27,310</b>	<b>2,865</b>	<b>23,400</b>	<b>46,195</b>	<b>24,220</b>	<b>8,823</b>	<b>24,715</b>
<b>Copper/Bering River Total</b>	<b>918,832</b>	<b>820,497</b>	<b>709,085</b>	<b>999,019</b>	<b>1,208,014</b>	<b>977,857</b>	<b>998,121</b>	<b>709,762</b>	<b>913,457</b>	<b>920,336</b>

<sup>a</sup> The escapement figures in this table are based on peak aerial survey estimates and sonar counts from a majority of known salmon spawning areas in the Copper and Bering River Delta. These indices are not intended to provide a true estimate of total escapement for the coastal stocks, but a comparable index based upon the best data currently available. An effort has been made to standardize the estimates across years.

<sup>b</sup> The areas in this table represent combined survey sites corresponding to the "system" designations for the current year survey results presented elsewhere in this report.

<sup>c</sup> Upriver escapement estimate from Miles Lake sonar counts.

<sup>d</sup> Peak escapement estimates were not possible for these systems due to poor weather conditions.



Appendix A.6. Measured water stage height at the Million Dollar Bridge from 1982 - 2002.

Appendix A.7. Anticipated and actual weekly harvest of chinook salmon in the Copper River District drift gillnet fishery, 2002.

Semi-Weekly Date	Fishing Time (Hrs.)	Anticipated Harvest	Actual Harvest <sup>a</sup>
May 18 Sat	6	8,970	4,632
May 22 Wed	12	7,888	4,688
May 25 Sat	12	6,340	10,754
May 29 Wed	12	6,844	3,567
June 1 Sat	0	5,223	
June 5 Wed	24	4,847	4,860
June 8 Sat	24	2,739	2,682
June 12 Wed	24	2,316	3,600
June 15 Sat	24	1,056	2,139
June 19 Wed	12	1,098	1,440
June 22 Sat	0	480	
June 26 Wed	0	602	
June 29 Sat	0	222	
July 3 Wed	0	166	
July 6 Sat	12	75	72
July 10 Wed	12	97	87
July 13 Sat	24	46	95
July 17 Wed	24	40	59
July 20 Sat	36	21	34
July 24 Wed	36	15	11
July 27 Sat	36	5	7
July 31 Wed	36	5	3
Aug 3 Sat	36	3	0
Aug 7 Wed	24	4	3
Aug 10 Sat	0	2	
Aug 14 Wed	24	2	0
Aug 17 Sat	0	1	
Aug 21 Wed	24	2	0
Aug 24 Sat	0	2	
Aug 28 Wed	24	1	1
Aug 31 Sat	12	2	0
Sept 4 Wed	24	0	0
Sept 7 Sat	36	0	0
Sept 11 Wed	36	0	0
Sept 14 Sat	84	0	0
Total	690	49,114	38,734

<sup>a</sup> Based on average historical harvests for comparable dates (1992-2001).

Appendix A.8. Total commercial salmon harvest by period in the Copper District drift gillnet fishery, 2002.

Period	Date	Hours	Permits	Landings	Chinook		Sockeye		Coho		Pink		Chum	
					Numbers	Pounds	Numbers	Pounds	Numbers	Pounds	Numbers	Pounds	Numbers	Pounds
01	05/16	6	453	486	4,632	87,293	55,867	364,148	7	51	0	0	223	1,784
02	05/20	12	457	590	4,688	96,370	117,427	774,254	0	0	0	0	155	1,138
03	05/23	12	464	726	10,754	222,772	226,564	1,434,582	0	0	0	0	312	2,268
04	05/27	12	473	661	3,567	74,083	161,574	1,031,321	0	0	0	0	314	2,373
05	06/03-06/04	24	470	841	4,860	109,268	230,723	1,468,695	0	0	0	0	4,106	32,006
06	06/06-06/07	24	425	543	2,682	56,491	44,034	278,122	0	0	0	0	583	4,622
07	06/10-06/11	24	355	494	3,600	73,139	42,269	268,684	0	0	0	0	24,859	179,231
08	06/13-06/14	24	329	433	2,139	45,404	60,560	386,055	0	0	0	0	78	634
09	06/17	12	313	344	1,440	28,007	28,417	187,527	0	0	0	0	2	13
10	07/06-07/07	12	184	218	72	1,408	48,854	319,152	37	232	5	18	19	167
11	07/09	12	315	423	87	1,080	96,007	632,885	693	5,318	66	198	100	806
12	07/12-07/13	24	322	470	95	1,081	55,355	363,894	607	4,733	268	867	135	1,147
13	07/15-07/16	24	289	366	59	767	35,929	235,061	1,199	9,687	430	1,450	51	382
14	07/18-07/20	36	208	293	34	451	20,954	134,746	1,151	9,207	886	3,012	274	2,413
15	07/22-07/23	36	152	188	11	135	10,630	67,218	624	5,091	939	3,287	163	1,311
16	07/25-07/27	36	65	72	7	64	3,334	20,402	409	3,168	462	1,656	186	1,541
17	07/29-07/30	36	35	39	3	39	4,078	25,418	611	5,452	272	898	44	351
18	08/01-08/03	36	27	37	0	0	3,034	18,646	1,021	8,125	28	107	4	35
19	08/05-08/06	24	62	75	3	98	2,217	12,729	4,673	36,162	288	1,038	15	116
20	08/12-08/13	24	150	207	0	0	391	2,418	23,430	207,109	29	121	2	18
21	08/19-08/20	24	185	361	0	0	179	1,101	65,408	610,228	4	12	2	16
22	08/26-08/27	24	214	441	1	20	56	360	93,246	895,609	0	0	0	0
23	08/30	12	200	242	0	0	19	121	60,523	579,988	0	0	0	0
24	09/02-09/03	24	212	364	0	0	13	79	67,607	654,512	0	0	0	0
25	09/05-09/06	36	178	414	0	0	12	69	64,129	629,414	0	0	0	0
26	09/09-09/10	36	149	335	0	0	2	12	55,238	530,284	0	0	0	0
27	09/12-09/15	84	103	169	0	0	4	17	28,020	269,700	0	0	0	0
28	09/16-09/22	156	103	268	0	0	0	0	35,520	342,698	0	0	0	0
30	09/27-09/29	60	1	1	0	0	0	0	70	564	0	0	0	0
Total			515	10,101	38,734	797,970	1,248,503	8,027,716	504,223	4,807,332	3,677	12,664	31,627	232,372
Average Weight						20.60		6.43		9.53		3.44		7.35

Appendix A.9. Aerial Escapement indices by date and location for sockeye salmon returning to the Copper River Delta, 2002.

Copper River Delta <sup>a</sup>		June 7	June 15	June 20	June 28	July 3	July 8
System and Drainage	Survey System						
Eyak River	Eyak River	75	500	50	10	75	250
	West Shore Beaches	0	50	125	625	75	1,050
	East Shore Beaches	75	1,000	250	400	150	160
	Middle Arm Beaches <sup>b</sup>	25	550	400	2,000	1,500	2,500
	North Shore Beaches	0	75	0	150	1,250	170
	Hatchery Creek Delta	0	0	25	50	25	75
	Hatchery Creek	0	NC	0	150	125	250
	Power Creek Delta	0	0	0	300	50	200
	Power Creek	0	NC	0	5	0	450
Ibek Creek	Ibek Creek	NS	NS	NS	NS	NS	NS
Alaganik Slough	Alaganik Slough	0	0	0	0	0	0
	McKinley Lake	0	0	0	150	400	1,500
	Salmon Creek West Fork	0	0	0	0	0	0
	Salmon Creek East Fork	0	0	0	0	15	0
26/27 Mile Creek	26/27 Mile Creek	0	0	70	25	50	50
39 Mile Creek	39 Mile Creek	NS	0	0	0	NS	200
Goat Mountain	Goat Mountain Creek	NS	0	0	0	NS	70 *
Pleasant Creek	Pleasant Creek	0	175	450	1,125	NS	2,425 *
Martin River	Martin River - Lower	0	150	10	220	1,450	2,000
	Ragged Point River	NS	NS	NS	100	0	120
	Ragged Point Lake Outlet	NS	NS	NS	10	0	0
	Ragged Point Lake	NS	NS	NS	0	0	0
	Martin River - Upper <sup>b</sup>	500	100	1	200	1,200	3,420
	Martin Lake Outlet	0	75	0	600	0	10
	Martin Lake	0	100	100	2,750	4,500	2,600
	Martin Lake Feeders	0	0	0	150	75	1,600
	Pothole River	NS	0	0	10	75	227
	Pothole Lake	NS	0	0	0	0	0
	Little Martin River	0	0	0	275	25	50
Little Martin Lake	0	0	0	125	0	125	
Tokun	Tokun Springs	0	0	0	0	0	0
	Tokun River	0	500	25	60	100	675
	Tokun Lake Outlet	0	600	0	600	500	200
	Tokun Lake	500	2,400	0	3,000	500	5,000 *
Martin River Slough	Martin River Slough	0	0	0	1,260	960	2,030
Copper River Aerial Survey Daily Total		1,175	6,275	1,506	14,350	13,100	27,407
Anticipated Escapement		<b>5,160</b>	<b>4,411</b>	<b>10,126</b>	<b>21,099</b>	<b>27,717</b>	<b>44,154</b>

-Continued-

Appendix A.9. (page 2 of 4)

Copper River Delta <sup>a</sup>								
System and Drainage	Survey System	July 12	July 16	July 30	Aug. 10	Aug. 17	Aug. 26	
Eyak River	Eyak River	0 *	475	675	0	0	0	
	West Shore Beaches	1,600	2,100	2,400	4,200 *	3,600	1,500	
	East Shore Beaches	500 *	900	6,000	0	0	700	
	Middle Arm Beaches <sup>b</sup>	1,200	4,000	3,200	4,000	3,500	7,000 *	
	North Shore Beaches	2,100	1,700	0	500	1,500	800 *	
	Hatchery Creek Delta	600	50	200	0	500	300 *	
	Hatchery Creek	150	600	500	350	300	1,400 *	
	Power Creek Delta	100	10	0	200	400	200 *	
	Power Creek	1,350 *	1,400	900	300	250	600	
Ibek Creek	Ibek Creek	NS	NS	NS	0	0	0	
Alaganik Slough	Alaganik Slough	0	0	0	0	0	0	
	McKinley Lake	3,200	4,100	4,200 *	3,700	2,700	4,500	
	Salmon Creek West Fork	250	25	4,000 *	2,500	3,000	1,300	
	Salmon Creek East Fork	225	350	900 *	800	3,000	400	
26/27 Mile Creek	26/27 Mile Creek	175	550	700	850 *	725	550	
39 Mile Creek	39 Mile Creek	1,400	1,700	10,000 *	9,000	8,000	2,500	
Goat Mountain	Goat Mountain Creek	0	25	0	0	0	0	
Pleasant Creek	Pleasant Creek	1,900	1,375	450	0	10	NS	
Martin River	Martin River - Lower	3,225	2,800	750	200 *	0	0	
	Ragged Point River	400	525	275 *	500	125	50	
	Ragged Point Lake Outlet	0	0	100	200 *	300	0	
	Ragged Point Lake	0	275	1,500	900	1,700	2,500	
	Martin River - Upper <sup>b</sup>	500	1,000	375	450	0	0	
	Martin Lake Outlet	1,500 *	200	100	100	0	0	
	Martin Lake	2,100 *	5,200	3,000	3,100	600	0	
	Martin Lake Feeders <sup>b</sup>	2,400 *	2,700	1,700	875	50	2,500 *	
	Pothole River <sup>b</sup>	425	375	1,600 *	800	200	3,400 *	
	Pothole Lake	5	25	3,400 *	1,300	1,000	1,050	
Tokun	Tokun Springs	0	0	0	0	0	0	
	Tokun River	525	1,400	550	825	300	900 *	
	Tokun Lake Outlet	0	100	200	200	600 *	125	
	Tokun Lake	2,800	3,650	2,300	2,300	4,500	3,500	
	Martin River Slough	Martin River Slough	4,500 *	4,500	3,050	250	80	0
	Copper River Aerial Survey Daily Total		33,655	43,020	53,965	40,900	37,540	37,875
	Anticipated Escapement		<b>44,154</b>	<b>47,787</b>	<b>53,545</b>	<b>55,062</b>	<b>44,234</b>	<b>42,074</b>

-Continued-

Appendix A.9. (page 3 of 4)

Copper River Delta <sup>a</sup>		Estimated Escapement				
System and Drainage	Survey System	Sept. 3	Sept. 9	Site <sup>c</sup>	System <sup>c</sup>	Anticipated
Eyak River	Eyak River	0	0	475	16,675	14,043
	West Shore Beaches	3,300	1,500	4,200		
	East Shore Beaches	1,600	300	900		
	Middle Arm Beaches <sup>b</sup>	4,500	1,000	7,000		
	North Shore Beaches	550	200	800		
	Hatchery Creek Delta	600	0	300		
	Hatchery Creek	900	300	1,400		
	Power Creek Delta	500	0	200		
	Power Creek	750	200	1,400		
Ibek Creek	Ibek Creek	0	0	0		
Alaganik Slough	Alaganik Slough	0	0	0	9,100	13,650
	McKinley Lake	3,460	3,600	4,200		
	Salmon Creek West Fork	NS	600	4,000		
	Salmon Creek East Fork	NS	0	900		
26/27 Mile Creek	26/27 Mile Creek	0	100	850	850	3,643
39 Mile Creek	39 Mile Creek	NS	600	10,000	10,000	9,367
Goat Mountain	Goat Mountain Creek	NS	0	70	70	1,024
Pleasant Creek	Pleasant Creek	NS	NS	2,425	2,425	897
Martin River	Martin River - Lower	300	0	200	25,615	29,808
	Ragged Point River	0	0	275		
	Ragged Point Lake Outlet	0	0	200		
	Ragged Point Lake	2,900	2,000	2,900		
	Martin River - Upper <sup>b</sup>	0	0	500		
	Martin Lake Outlet	2,100	0	200		
	Martin Lake	1,300	150	5,200		
	Martin Lake Feeders	300	500	5,200		
	Pothole River	3,700	0	5,000		
	Pothole Lake	1,200	800	3,400		
	Little Martin River	0	0	40		
Little Martin Lake	520	825	2,500			
Tokun	Tokun Springs	300	0	0	6,500	9,172
	Tokun River	250	0	900		
	Tokun Lake Outlet	75	2,500	600		
	Tokun Lake	3,750	1,500	5,000		
Martin River Slough	Martin River Slough	0	0	4,500	4,500	6,574
Copper River Aerial Survey Daily Total		32,855	16,675		75,735	
Anticipated Escapement		<b>32,732</b>	<b>29,520</b>			<b>88,178</b>

-Continued-

## Appendix A.9. (page 4 of 4)

---

- <sup>a</sup> The survey sites represent most of the known sockeye salmon spawning locations in the Copper River Delta drainage. Weather permitting, the sites are surveyed weekly. The surveys provide information about the relative strength of escapement among years and within a year, time for spawning sites and relative escapement strength among sites. The indices are not intended to provide an actual estimate of escapement for coastal stocks, but have been used for that purpose in the absence of any other escapement estimating method. The abbreviations used in the table have the following meaning: NS = no survey, NC = surveyed but no count due to poor conditions. The + sign after some counts indicates that the count is the minimum estimate seen in less than ideal conditions. The symbol \* indicates that this survey count was used as the peak survey for the site without duplication of counts for survey sites along migratory corridors (see footnote c).
- <sup>b</sup> The sites typically have very protracted run timing or two temporally segregated spawning populations at the same sites. Aerial counts from more than one day may be restricted and used in the escapement estimate if the surveyor indicates that these counts represented different fish.
- <sup>c</sup> The escapement estimates for each site is in the restricted survey estimate. Where the survey site is a terminal spawning area, the peak count is used. However, if the site is a schooling area for migratory fish bound for sites further upstream, the count which minimizes possible duplicate of counts across dates is selected.
- <sup>d</sup> This stream is not included in the estimated escapement delta wide, it is a non-index stream.
- <sup>e</sup> The sum of the estimates by site within a system.
- \* Denotes peak counts.

Appendix A.10. Anticipated and actual weekly harvest of coho salmon in the Copper River District drift gillnet fishery, 2002.

Week Ending Date	Length of Fishing Periods (Hrs)	Coho	
		Actual Catch	Anticipated Catch <sup>a</sup>
18-May	6	7	0
25-May	12 and 12	0	12
1-Jun	12	0	19
8-Jun	24 and 24	0	15
15-Jun	24 and 24	0	54
22-Jun	12	0	9
29-Jun	0	0	237
6-Jul	7	23	430
13-Jul	5, 12, and 24	1,314	1,023
20-Jul	24 and 36	2,350	1,975
27-Jul	36 and 36	1,033	2,482
3-Aug	36 and 36	1,632	5,447
10-Aug	24	4,673	16,688
17-Aug	24	23,430	34,311
24-Aug	24	65,408	55,036
31-Aug	24 and 12	153,769	62,487
7-Sep	24 and 36	131,736	63,034
14-Sep	36 and 65	80,909	37,025
21-Sep	19 and 137	37,679	13,527
28-Sep	19, 48, and 41	190	6,541
5-Oct	7 and 48	70	1,394
Season Total		504,223	301,746

<sup>a</sup> Based on average historic catches for comparable dates (1969 - 1993).

Appendix A.11. Aerial escapement indices by date and location for coho salmon returning to the Copper River Delta, 2002.

Copper River Delta <sup>a</sup>						
System and Drainage	Survey System	August 10	August 17	August 26	Sept 3	Sept 9
Eyak River	Eyak River	725	800	800	1,900	6,825 *
	East Shore Beaches	0	0	50	0	1,400 *
	West Shore Beaches	200	350	50	1,700	3,000 *
	Middle Arm Beaches	0	0	0	400	5,500 *
	North Shore Beaches	0	0	0	0	700 *
	Hatchery Creek Delta	0	20	0	150	200 *
	Hatchery Creek	0	0	0	400	1,200 *
	Power Creek Delta	0	10	0	20	400 *
	Power Creek	0	0	0	300	1,600 *
Ibek Creek	Ibek Creek	0	975	9,875	20,300	23,900 *
Scott River	Scott Lake <sup>b</sup>	NS	250	1,100	1,600 *	500
	Scott River <sup>b</sup>	NS	NS	0	0 *	NS
	Elsner Lake <sup>b</sup>	NS	500	500	800 *	300
Alaganik Slough	Alaganik Slough	25	0	75	0	200 *
	18/20 Mile Creek	NS	5	475	1,250 *	600
	McKinley Lake	0	0	0	2,200 *	400
	Salmon Creek West Fork	0	0	0	NS	1,000 *
	Salmon Creek East Fork	0	0	500	NS	100 *
26/27 Mile Creek	26/27 Mile Creek	0	0	25	240 *	100
39 Mile Creek	39 Mile Creek	0	500	2,000	NS	4,500 *
Goat Mountain Cr.	Goat Mountain Creek	25	25	150	NS	160 *
Pleasant Creek	Pleasant Creek <sup>b</sup>	0	0 *	NS	NS	NS
Martin River	Martin River - Lower	225	65	1,235	4,400	6,625 *
	Ragged Point River	0	0	300	0	300 *
	Ragged Point Lake Outlet	0	0	300	0	200 *
	Ragged Point Lake	0	0	0	2,900 *	300
	Martin River - Upper	0	75	1,550	3,900	6,700 *
	Martin Lake Outlet	0	0	100	400	650 *
	Martin Lake	0	0	0	0	200 *
	Martin Lake Feeders	0	0	0	0	1,000 *
	Pothole River	0	0	0	0	3,300 *
	Pothole Lake	0	0	0	0	100 *
	Little Martin River	0	0	65	170	300 *
	Little Martin Lake	0	0	0	200 *	75
	Tokun Springs	0	0	0	40 *	0
	Tokun River	0	0	400	60	300 *
	Tokun Lake Outlet	0	0	0	0	0 *
Tokun Lake	0	0	0	0	200 *	
Martin River Slough	Martin River Slough	0	20	1,350	3,725	10,025 *
Copper River Aerial Survey Daily Tot		1,200	3,595	20,900	47,055	82,860
<b>Anticipated Escapement</b>		<b>3,232</b>	<b>9,371</b>	<b>24,202</b>	<b>34,815</b>	<b>33,749</b>

-continued-

Appendix A.11. (page 2 of 3)

Copper River Delta <sup>a</sup>		Estimated Escapement		
System and Drainage	Survey System	Site <sup>c</sup>	System <sup>d</sup>	Anticipated
Eyak River	Eyak River	6,825	20,825	<b>6,100</b>
	East Shore Beaches	1,400		
	West Shore Beaches	3,000		
	Middle Arm Beaches	5,500		
	North Shore Beaches	700		
	Hatchery Creek Delta	200		
	Hatchery Creek	1,200		
	Power Creek Delta	400		
	Power Creek	1,600		
Ibek Creek	Ibek Creek	23,900	23,900	<b>6,600</b>
Scott River	Scott River <sup>b</sup>	0	2,400	
	Elsner Lake <sup>b</sup>	800		
	Scott Lake <sup>b</sup>	1,600		
Alaganik Slough	Alaganik Slough	200	4,750	<b>3,550</b>
	18/20 Mile Creek	1,250		
	McKinley Lake	2,200		
	Salmon Creek West Fork	1,000		
	Salmon Creek East Fork	100		
26/27 Mile Creek	26/27 Mile Creek	240	240	<b>400</b>
39 Mile Creek	39 Mile Creek	4,500	4,500	<b>3,650</b>
Goat Mountain Cr.	Goat Mountain Creek	160	160	<b>1,450</b>
Pleasant Creek	Pleasant Creek <sup>b</sup>	0	0	
Martin River	Martin River - Lower	6,625	6,625	<b>8,900</b>
	Ragged Point River	300	3,400	
	Ragged Point Lake Outlet	200		
	Ragged Point Lake	2,900		
	Martin River - Upper	6,700	6,700	
	Martin Lake Outlet	650	1,850	
	Martin Lake	200		
	Martin Lake Feeders	1,000		
	Pothole River	3,300	3,400	<b>2,350</b>
	Pothole Lake	100		
	Little Martin River	300	500	<b>6,100</b>
	Little Martin Lake	200		
	Tokun Springs	40	540	<b>1,300</b>
	Tokun River	300		
	Tokun Lake Outlet	0		
Tokun Lake	200			
Martin River Slough	Martin River Slough	10,025	10,025	<b>9,550</b>
Copper River Aerial Survey Total			89,815	
<b>Anticipated Escapement</b>				<b>49,950</b>

-continued-

## Appendix A.11. (page 3 of 3)

- <sup>a</sup> The survey sites represent most of the known coho salmon spawning locations in the Copper River Delta drainage. Weat permitting, the sites are surveyed weekly. The surveys provide information about the relative strength of escapement among years and within a year, time for spawning sites and relative escapement strength among sites. The indices are not intended to provide an actual estimate of escapement for coastal stocks but have been used for that purpose in the absence of any other escapement estimating method. The abbreviations used in the following table have the following meaning: NS = no survey, NC = surveyed but no count due to poor conditions. A + sign after a count indicates that the count is a minimum estimate, made in less than ideal conditions. The symbol \* indicates that this survey count was used as the peak survey for the site.
- <sup>b</sup> This stream is not included in the estimated escapement delta wide, it is a non-index strea
- <sup>c</sup> Where the survey site is a terminal spawning area the peak count is used. However, if the site is a schooling area for migrat fish bound for further sites upstream, the count which minimizes possible duplication of counts across dates is selected.
- <sup>d</sup> The sum of the estimates by site within the index system

Appendix A.12. Copper River Delta and Bering River coho salmon escapement indices, 1992 - 2002.

Stream/Lake <sup>a,b</sup>	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Eyak Lake	5,710	NC <sup>d</sup>	9,900	4,050	5,100	6,800	2,550	1,250	2,130	7,800	17,425
Hatchery Creek	1,100	NC <sup>d</sup>	700	170	0	1,400	1,200	300	1,900	450	1,400
Power Creek	1,000	NC <sup>d</sup>	700	300	0	2,700	4,900	2,700	1,450	480	2,000
Ibek Creek	9,600	NC <sup>d</sup>	3,060	3,000	6,300	4,700	1,500	4,600	7,000	14,000	23,900
Scott & Elsner River <sup>c</sup>	550	1,580	1,600	540	1,000	2,200	750	2,500	300	600	2,400
18/20 Mile	915	1,750	3,300	2,550	3,800	3,300	1,300	610	420	420	1,450
McKinley Lake	800	700	2,100	400	NC <sup>d</sup>	1,100	400	50	120	800	2,200
Salmon Creek	0	1,400	0	1,250	1,500	2,500	2,100	3,080	2,600	200	1,100
26/27 Mile	475	1,500	1,300	1,300	1,480	2,300	700	2,610	1,000	400	240
39 Mile	1,900	1,600	4,150	3,800	5,250	6,100	2,100	3,650	5,000	1,800	4,500
Goat Mountain	480	650	1,000	2,800	1,000	1,400	800	650	430	330	160
Pleasant Cr. <sup>c</sup>	8	NS	45	100	40	620	450	1,220	45	210	0
Martin River	1,900	4,540	10,600	5,000	15,400	NC <sup>d</sup>	6,250	3,900	4,500	3,755	13,325
Ragged Pt. River/Lk.	310	300	0	100	0	80	850	275	330	440	3,400
Martin Lake	65	150	0	10	0	NC <sup>d</sup>	300	600	1,350	311	1,850
Pothole Lake	300	730	0	300	140	60	1,500	600	245	390	3,400
Little Martin Lake	10,800	6,400	200	1,500	700	10,500	3,800	3,600	3,000	3,010	500
Tokun River/Lake	510	950	1,780	1,900	1,300	1,300	2,000	1,130	710	1,600	540
Martin River Slough	8,140	11,200	5,120	5,950	4,100	10,500	6,400	12,900	10,600	4,100	10,025
<b>Copper Delta Total</b>	<b>44,563</b>	<b>33,450</b>	<b>45,555</b>	<b>35,020</b>	<b>47,110</b>	<b>57,560</b>	<b>39,850</b>	<b>46,225</b>	<b>43,130</b>	<b>41,096</b>	<b>89,815</b>

Katalla R.	2,760	4,400	4,500	4,500	6,800	8,000	5,100	3,000	2,800	2,900	5,000
Bering Lake	3,540	5,900	5,800	10,600	6,000	14,800	14,300	13,800	10,370	21,040	15,375
Dick Creek	1,250	200	100	100	0	1,300	0	1,270	2,500	760	1,700
Shepherd Cr.	NS	600	900	800	NC <sup>d</sup>	NC <sup>d</sup>	NC <sup>d</sup>	200	450	300	675
Nichawak R.	1,970	4,100	2,000	2,700	2,000	4,300	2,500	4,800	4,300	1,300	1,420
Gandil R.	600	1,250	950	1,350	1,000	1,900	950	3,000	600	900	330
Controller Bay	6,180	13,600	14,300	7,400	11,000	12,100	6,900	5,220	5,360	2,807	9,700
<b>Bering Area Total</b>	<b>16,300</b>	<b>30,050</b>	<b>28,550</b>	<b>27,450</b>	<b>26,800</b>	<b>42,400</b>	<b>29,750</b>	<b>31,290</b>	<b>26,380</b>	<b>30,007</b>	<b>34,200</b>
<b>Copper/Bering Total</b>	<b>60,863</b>	<b>63,500</b>	<b>74,105</b>	<b>62,470</b>	<b>73,910</b>	<b>99,960</b>	<b>69,600</b>	<b>77,515</b>	<b>69,510</b>	<b>71,103</b>	<b>124,015</b>

<sup>a</sup> The escapement figures in this table are based on peak aerial survey estimates counts from a majority of the known salmon spawning areas in the Copper and Bering River Delta. These indices are not intended to provide a true estimate of total escapement for the coastal stocks, but a comparable index based upon the best data currently available. An effort has been made to standardize the estimates across years, however counts were obtained only as environmental conditions allowed and may not necessarily correspond to periods of peak abundance. Missing counts are generally a result of bad weather, high water, turbulence or other factors that prevent surveys for that given year.

<sup>b</sup> The areas in this table represent combined survey sites corresponding to the "system" designations for the current year survey results presented elsewhere in this report.

<sup>c</sup> Not an indexed stream.

<sup>d</sup> Due poor stream or weather conditions these systems are listed as "NC" no count.

Appendix A.13. Summary of periods and emergency orders issued for the commercial salmon drift gillnet fisheries in the Bering and Copper River Districts, 2002.

Bering River District (200)			Copper River District (212)			Emergency Orders Issued
Periods	Dates	Hours Fished	Periods <sup>a</sup>	Dates	Hours Fished	
			1 <sup>b</sup>	05/16	6	2-F-E-002-02
			2 <sup>b</sup>	05/20	12	2-F-E-003-02
			03	05/23	12	2-F-E-006-02
			04	05/27	12	2-F-E-008-02
			05	06/03-06/04	24	2-F-E-012-02 & 2-F-E-013-02 <sup>c</sup>
01	06/06-06/07	24	06	06/06-06/07	24	2-F-E-014-02
02	06/10-06/11	24	07	06/10-06/11	24	2-F-E-016-02
03	06/13-06/14	24	08	06/13-06/14	24	2-F-E-017-02
04	06/17	12	09	06/17	12	2-F-E-020-02
05	07/06-07/07	12	10	07/06-07/07	12	2-F-E-036-02 <sup>d</sup>
06	07/09	12	11	07/09	12	2-F-E-039-02
07	07/12-07/13	24	12	07/12-07/13	24	2-F-E-045-02
08	07/15-07/16	24	13	07/15-07/16	24	2-F-E-046-02
09	07/18-07/19	36	14	07/18-07/20	36	2-F-E-050-02
10	07/22-07/23	36	15	07/22-07/23	36	2-F-E-052-02
11	07/25-07/27	36	16	07/25-07/27	36	2-F-E-055-02
12	07/29-07/30	36	17	07/29-07/30	36	2-F-E-056-02
13	08/01-08/03	36	18	08/01-08/03	36	2-F-E-059-02
14	08/05-08/06	24	19	08/05-08/06	24	2-F-E-060-02
15	08/12-08/13	24	20	08/12-08/13	24	2-F-E-068-02
16	08/19-08/20	24	21	08/19-08/20	24	2-F-E-072-02
17	08/26-08/27	24	22	08/26-08/27	24	2-F-E-078-02
18	08/30	12	23	08/30	12	2-F-E-083-02
19	09/02-09/03	24	24	09/02-09/03	24	2-F-E-083-02
20	09/05-09/06	36	25	09/05-09/06	36	2-F-E-089-02
21	09/09-09/10	36	26	09/09-09/10	36	2-F-E-089-02
22	09/12-09/15	84	27	09/12-09/15	84	2-F-E-090-02
23	09/16-09/22	156	28	09/16-09/22	156	2-F-E-090-02
24	09/23-09/25	48	29	09/23-09/25	48	2-F-E-096-02
25	09/27-09/29	60	30	09/27-09/29	60	2-F-E-101-02
26	10/01-10/03	48	31	10/01-10/03	48	2-F-E-099-02

<sup>a</sup> The Copper River schedule is typically two 24-hour periods per week; from 7:00 a.m. Monday to 7:00 a.m. Tuesday and from 7:00 p.m. Thursday to 7:00 p.m. Friday. All 12-hours periods began at 7:00 a.m with the exception of 7/6, which began at 7:00 p.m..

<sup>b</sup> The following waters were closed to commercial fishing during the 12-hour period on May 17:  
The waters inside of a line from the Steamboat marker to the U.S.C.G. light on the west side of Pete Dahl entrance to the ADF&G marker located on the east side of Pete Dahl entrance and from the U.S.C.G. light on the west side of Grass Island entrance to the ADF&G marker located on the east side of Grass Island entrance and from the U.S.C.G light on the west side of Kokenhenik Island entrance to the ADF&G marker located on the east side of Kokenhenik Island entrance and all waters west of the ADF&G marker at Coffee Creek.

<sup>c</sup> Period extended 12 hours.

<sup>d</sup> Period began at 7:00 p.m. to reduce harvest potential.

Appendix A.14. Total commercial salmon harvest by species in the Bering River District,  
1973 - 2002.

Year	Chinook	Sockeye	Coho	Pink	Chum	Total
1973	285	15,426	65,348	2	5	81,066
1974	32	4,208	28,615	7	2	32,864
1975	162	21,637	24,162	0	0	45,961
1976	228	30,908	42,423	43	1	73,603
1977	127	14,445	47,218	192	221	62,203
1978	331	33,554	91,097	266	2,391	127,639
1979	385	139,015	114,046	6,895	23,094	283,435
1980 <sup>a</sup>	0	0	108,872	0	0	108,872
1981	200	55,585	82,626	9,882	8,307	156,600
1982	254	129,667	144,752	47	333	275,053
1983	610	179,273	117,669	851	4,615	303,018
1984	330	91,784	214,632	309	20,408	327,463
1985	215	26,561	419,276	214	9,642	455,908
1986	128	19,038	115,809	15	243	135,233
1987	34	16,926	15,864	54	7	32,885
1988	19	7,152	86,539	23	181	93,914
1989	30	9,225	26,952	7	2	36,216
1990	14	8,332	42,952	2	1	51,301
1991	28	19,181	110,951	4	195	130,359
1992	21	19,721	125,616	4	1	145,363
1993	130	33,951	115,833	82	22	150,018
1994	121	27,926	259,003	34	63	287,147
1995	44	21,585	282,045	26	229	303,929
1996	111	37,712	93,763	0	30	131,616
1997	23	9,651	97	2	0	9,773
1998	70	8,439	12,284	5	2	20,800
1999	42	13,697	9,852	204	96	23,891
2000	5	1,279	56,329	0	0	57,613
2001	76	5,450	2,715	0	0	8,241
2002	14	235	108,522	0	0	108,771
Ten Year Average (1992-01)	64	17,941	95,754	36	44	113,839

<sup>a</sup> In 1980 no fishing was allowed prior to August 11.

Appendix A.15. Aerial escapement indices by date and location for sockeye salmon returning to the Bering River Delta, 2002.

Bering River Delta <sup>a</sup>		June 7	June 15	June 22	June 28	July 3	July 8
System and Drainage	Survey System						
Bering River	Bering River	350	NC	750	900	675	90 *
	Bering Lake	0	NC	0	250	6,000	12,100
	Dick Creek	0	NS	NC	0	NS	1,450
	Shepherd Creek - Lagoon	NS	NS	NS	NC	NC	10 *
	Shepherd Creek	NS	NS	NS	NC	NC	0
	Carbon Creek	NS	NS	NS	0	NS	5
	Clear Creek	NS	NS	NS	NS	NS	NS
	Kushitaka Lake	NS	NS	NS	NS	NS	0
	Shockum Creek	NS	NS	NS	NS	NS	0
Katalla River <sup>b</sup>	Katalla River	5	NC	NS	0	525	3,000
Bering River Aerial Survey Daily Index		355	0	750	1,150	7,200	16,655
<b>Anticipated Escapement Index</b>		<b>4,278</b>	<b>2,371</b>	<b>7,750</b>	<b>9,080</b>	<b>12,528</b>	<b>23,695</b>

Bering River Delta <sup>a</sup>		Aerial Escapement Indices by Survey Date				
System and Drainage	Survey System	July 12	July 16	30-Jul	August 10	August 17
Bering River	Bering River	50	75	440	50	0
	Bering Lake	10,800 *	13,000	5,500	2,500	2,700
	Dick Creek	2,000	1,200	8,650 *	2,850	3,500
	Shepherd Creek - Lagoon	0	0	0	0	NS
	Shepherd Creek	25 *	0	0	0	NS
	Carbon Creek	NS	0	0	25 *	NS
	Clear Creek	NS	NS	350 *	100	NS
	Kushitaka Lake	NS	0	5	65 *	NS
	Shockum Creek	NS	NS	NS	200 *	NS
Katalla River <sup>b</sup>	Katalla River	2,300	2,800	4,500 *	800	600
Bering River Aerial Survey Daily Index		15,175	17,075	19,445	6,590	6,800
<b>Anticipated Escapement Index</b>		<b>23,695</b>	<b>23,777</b>	<b>23,117</b>	<b>20,844</b>	<b>9,878</b>

-continued-

Appendix A.15 (page 2 of 2).

Bering River Delta <sup>a</sup> System and Drainage	Survey System	Aerial Escapement Indices by Survey Date				System <sup>d</sup>	Anticipated
		August 26	Sept. 3	Site <sup>c</sup>	19,540		
	Bering River	0	0	90	19,540	23,512	
	Bering Lake	500	1,550	10,800			
	Dick Creek	1,950	3,400	8,650			
	Shepherd Creek - Lagoon	0	0	10	60	6,045	
	Shepherd Creek	0	0	25			
	Carbon Creek	NS	0	25			
	Clear Creek	100	0	350	350	1,585	
	Kushtaka Lake	55	0	65	265	1,693	
	Shockum Creek	0	0	200			
Katalla River <sup>b</sup>	Katalla River	0	0	4,500	4,500		
Bering River Aerial Survey Daily Index		2,605	4,950		24,715		
<b>Anticipated Escapement Index</b>		<b>3,810</b>	<b>1,542</b>			<b>32,835</b>	

<sup>a</sup> The survey sites represent most of the known sockeye salmon spawning locations in the Bering River drainage. Weather permitting, the sites are surveyed weekly. The surveys provide information about the relative strength of escapement among years and within a year, time for spawning sites and relative escapement strength among sites. The indices are not intended to provide an actual estimate of escapement for coastal stocks but have been used for that purpose in the absence of any other escapement estimating method. The abbreviations used in the following table have the following meaning: NS = no survey, NC = surveyed but no count due to poor conditions. The + sign after some counts indicates that the count is the minimum estimate seen in less than ideal conditions. The symbol \* indicates that this survey count was used as the peak survey for the site without duplication of counts for survey sites along migratory corridors (see footnote c).

<sup>b</sup> This stream is not included in the estimated escapement for the Bering River drainage, it is a non-index stream

<sup>c</sup> Where the survey site is a terminal spawning area the peak count is used. However, if the site is a schooling area for migratory fish bound for sites further upstream, the count which minimizes possible duplication of counts across dates is selected.

<sup>d</sup> The sum of the estimates by site within a system

Appendix A.16. Aerial escapement indices by date and location for coho salmon returning to the Bering River Delta<sup>a</sup>, 2002.

System and Drainage	Survey System	August 10	August 17	August 26	Sept. 3	Sept.9
Bering River	Bering River <sup>b</sup>	50	50	650	4,500	3,725 *
	Bering Lake	0	200	2,000	5,150	12,100 *
	Dick Creek	0	25	0	940	1,700 *
Shepherd Drainage <sup>c</sup>	Shepherd Creek - Lagoon	0	NS	0	175	675 *
	Shepherd Creek	0	NS	0	0	0 *
	Carbon Creek	0	NS	0	0	0 *
Katalla River	Katalla River	600	2,400	5,000 *	4,800	3,600
Lower Bering River	Gandil River	NS	0	150	330 *	150
	Nichawak River	NS	2	600	1,420 *	40
Controller Bay	Campbell River	NS	0	0	150 *	0
	Edwardes River	NS	0	1,375	6,100 *	4,200
	Okalee River	NS	125	1,125	1,760	3,450 *
	Other Clear Streams	NS	NS	0	0	0
Bering River Aerial Survey Daily Index		650	2,802	10,900	25,325	29,640
<b>Anticipated Aerial Index</b>		<b>1,131</b>	<b>5,084</b>	<b>17,525</b>	<b>18,859</b>	<b>16,468</b>

System and Drainage	Survey System	Estimated Escapement		
		Site <sup>d</sup>	System <sup>e</sup>	Anticipated
Bering River	Bering River <sup>b</sup>	3,275	17,075	<b>5,600</b>
	Bering Lake	12,100		
	Dick Creek	1,700		
Shepherd Drainage <sup>c</sup>	Shepherd Creek - Lagoon	675	675	
	Shepherd Creek	0		
	Carbon Creek	0		
Katalla River	Katalla River	5,000	5,000	<b>6,650</b>
Lower Bering River	Gandil River	330	1,750	<b>9,900</b>
	Nichawak River	1,420		
Controller Bay	Campbell River	150	9,700	<b>2,500</b>
	Edwardes River	6,100		
	Okalee River	3,450		
	Other Clear Streams	0		
Bering River/Controller Bay Aerial Survey Total			34,200	
<b>Anticipated Aerial Index</b>				<b>24,650</b>

<sup>a</sup> The survey sites represent most of the known coho salmon spawning locations in the Bering River drainage. Weather permitting, the sites are surveyed weekly. The surveys provide information about the relative strength of escapement among years and within a year, time for spawning sites and relative escapement strength among sites. The indices are not intended to provide an actual estimate of escapement for coastal stocks but have been used for that purpose in the absence of any other escapement estimating method. The abbreviations used in the following table have the following meaning: NS = no survey, NC = surveyed but no count due to poor conditions. The + sign after some counts indicates that the count is the minimum estimate seen in less than ideal conditions. The symbol \* indicates that this survey count was used as the peak survey for the site without duplication of counts for survey sites along migratory corridors (see footnote d).

<sup>b</sup> Bering River counts include coho observed in the Don Miller Hill tributaries.

<sup>c</sup> This stream is not included in the estimated escapement delta wide, it is a non-index stream.

<sup>d</sup> Where the survey site is a terminal spawning area the peak count is used. However, if the site is a schooling area for migratory fish bound for sites further upstream, the count which minimizes possible duplication of counts across dates is selected.

<sup>e</sup> The sum of the estimates by site within a system

Appendix A.17. Total commercial salmon harvest by period in the Bering River District drift gillnet fishery, 2002.

Period	Date(s) <sup>a</sup>	Hours	Permits	Landings	Chinook		Sockeye		Coho		Pink		Chum	
					Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
03	06/13-06/14	24	2	2	1	11	112	846	0	0	0	0	0	0
04	06/17	24	1	1	13	336	120	722	0	0	0	0	0	0
18	08/30	12	4	4	0	0	0	0	2,011	18,872	0	0	0	0
19	09/02-09/03	24	18	36	0	0	1	7	9,852	85,715	0	0	0	0
20	09/05-09/06	36	35	90	0	0	2	12	24,364	222,891	0	0	0	0
21	09/09-09/10	36	72	219	0	0	0	0	52,230	469,326	0	0	0	0
22	09/12-09/15	84	17	39	0	0	0	0	10,251	86,951	0	0	0	0
23	09/16-09/22	156	18	57	0	0	0	0	9,814	91,781	0	0	0	0
Total			79	448	14	347	235	1,587	108,522	975,536				
Average Weight						24.78		6.75		8.98				

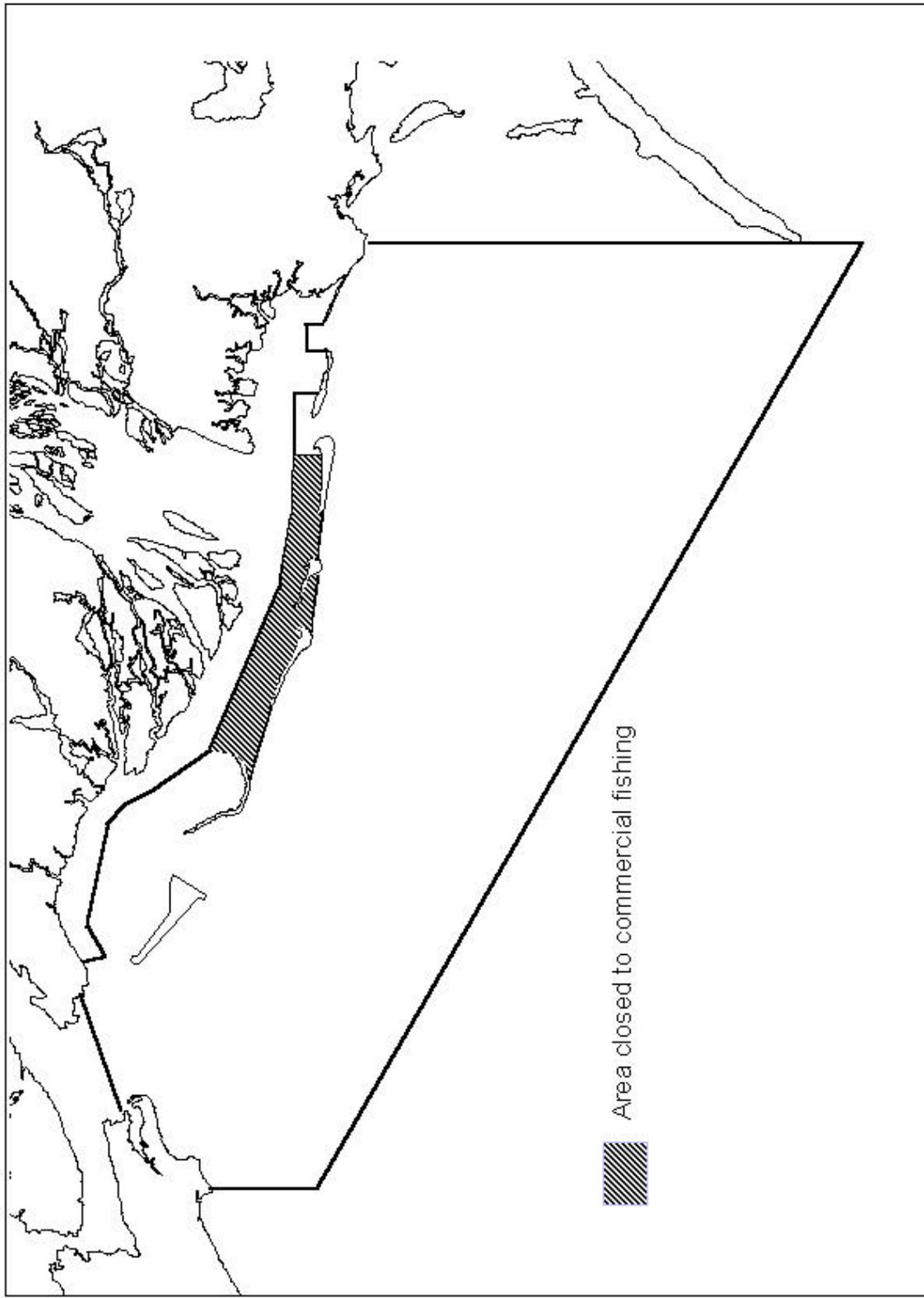
<sup>a</sup> For starting times of specific openings refer to Appendix B.26.

Appendix A.18. Anticipated and actual weekly harvest and escapement of coho salmon in the Bering River District drift gillnet fishery, 2002.

Week Ending Date	Fishing Time (Hrs.)		Actual Harvest	Anticipated Harvest <sup>a</sup>	Actual Aerial Index		Anticipated Index <sup>b</sup>	
8/10	24			128	650	1,131		
8/17	24			1,220	2,802	5,084		
8/24	24			12,270	NS	8,324		
8/31	24 and 12		2,011	27,281	10,900	17,525		
9/7	24 and 36		34,216	34,278	25,325	18,859		
9/14	36 and 65		62,481	25,682	29,640	16,468		
9/21	9 and 137		9,814	7,971	NS	14,836		
9/28	19, 48 and 41			1,762	NS	8,632		
10/5	7 and 48			254	NS	4,886		
Season Total			108,522	110,846	69,317	95,745		

<sup>a</sup> Based on average historical harvests for comparable dates (1969-2001).

<sup>b</sup> Based on average historical aerial escapement surveys for comparable dates (1984 - 1992)



Appendix A.19. Copper River District area closed to Chinook salmon harvest during the first two commercial fishing periods, 2002.

Appendix A.20. Upper Copper River chinook salmon aerial escapement index counts, 1977-2002<sup>h</sup>.

Year	Gulkana R. <sup>b</sup>	Copper R. Upstream of Gulkana <sup>a</sup>		Tazlina Drainage <sup>a</sup>		Klutina Drainage <sup>a</sup>		Tonsina Drainage <sup>a</sup>		Total
		E. Fork Chistochina R.	Indian River	Mendeltna Creek	Kiana Creek	St. Anne Creek	Manker Creek	Little Tonsina River	Grayling Creek	
1977	729	132	<sup>c</sup>	73	91	10	15	<sup>c</sup>	<sup>c</sup>	1,050
1978	618 <sup>f</sup>	137	9	52 <sup>e</sup>	125 <sup>e</sup>	24 <sup>e</sup>	20 <sup>e</sup>	285 <sup>e</sup>	92 <sup>e</sup>	1,362
1979	764	810	29	5 <sup>e</sup>	279 <sup>e</sup>	16 <sup>e</sup>	16 <sup>e</sup>	285 <sup>e</sup>	153 <sup>e</sup>	2,357
1980	712	575	24	3 <sup>e</sup>	247	8 <sup>e</sup>	35 <sup>e</sup>	70 <sup>e</sup>	66 <sup>e</sup>	1,740
1981	77	120	<sup>c</sup>	51	191	19	33	191	107	789
1982	879 <sup>e</sup>	1,260	179	70 <sup>e</sup>	200 <sup>e</sup>	35 <sup>e</sup>	49 <sup>e</sup>	440 <sup>e</sup>	124 <sup>e</sup>	3,236
1983	589	575	41	12 <sup>e</sup>	166	87	141	330	287	2,228
1984	1,331	577	17	26 <sup>e,f</sup>	382 <sup>f</sup>	89 <sup>f</sup>	264 <sup>f</sup>	568	279	3,533
1985	224	360	14	26 <sup>e</sup>	91 <sup>e</sup>	15 <sup>e</sup>	22 <sup>e</sup>	203 <sup>e</sup>	58 <sup>e</sup>	1,013
1986	1,484	618	<sup>c</sup>	76	328	182	251	424	224	3,587
1987	1,098	764	33	10	80	192	141	247	112	2,677
1988	831	709	<sup>c</sup>	25 <sup>e</sup>	249	64	119	78	167	2,242
1989	2,009	750	7	187	345	90	165	68 <sup>e</sup>	78	3,699
1990	1,171 <sup>e</sup>	645	15 <sup>e</sup>	323 <sup>e</sup>	414 <sup>e</sup>	43 <sup>e</sup>	43	57	52 <sup>e</sup>	2,763
1991	1,223 <sup>e</sup>	925	18	310 <sup>f</sup>	522 <sup>f</sup>	130	107	59	159	3,453
1992	540	88	1	83 <sup>e</sup>	79 <sup>e</sup>	12 <sup>e</sup>	14 <sup>e</sup>	107	17 <sup>e</sup>	941
1993	693	<sup>c</sup>	<sup>c</sup>	<sup>c</sup>	<sup>c</sup>	<sup>c</sup>	<sup>c</sup>	<sup>c</sup>	<sup>c</sup>	693
1994	786	508	47	120	430	250	75	4 <sup>e</sup>	2 <sup>e</sup>	2,222
1995	285 <sup>f</sup>	37 <sup>e</sup>	2 <sup>e</sup>	32 <sup>e</sup>	111 <sup>e</sup>	26 <sup>e</sup>	8 <sup>e</sup>	25 <sup>e</sup>	26 <sup>e</sup>	552
1996 <sup>f</sup>	1,364 <sup>f</sup>	450 <sup>f</sup>	11 <sup>f</sup>	360 <sup>f</sup>	723 <sup>f</sup>	117 <sup>f</sup>	164 <sup>f</sup>	25 <sup>f</sup>	143 <sup>f</sup>	3,357
1997	2,270	2,245 <sup>f</sup>	270 <sup>f</sup>	311 <sup>f</sup>	693 <sup>f</sup>	900 <sup>f</sup>	466 <sup>f</sup>	55 <sup>f</sup>	330 <sup>f</sup>	7,540
1998	1,407	740 <sup>f</sup>	48	280 <sup>f</sup>	700 <sup>f</sup>	515 <sup>f</sup>	843 <sup>f</sup>	60	527 <sup>f</sup>	5,120
1999	934 <sup>e</sup>	82 <sup>e</sup>	2 <sup>e</sup>	38 <sup>e</sup>	216 <sup>e</sup>	486 <sup>e</sup>	69 <sup>e</sup>	93 <sup>e</sup>	88 <sup>e</sup>	2,008
2000	1,174	580	62	125	155 <sup>e</sup>	70	54 <sup>e</sup>	26 <sup>e</sup>	104 <sup>e</sup>	2,350
2001	556 <sup>e</sup>	0 <sup>d</sup>	0 <sup>d</sup>	80 <sup>e</sup>	154 <sup>e</sup>	75 <sup>e</sup>	24 <sup>e</sup>	7 <sup>e</sup>	73 <sup>e</sup>	969
2002	2,087	956	27	220	240	130	130	139	164	4,093
<b>1977-1986<sup>g</sup></b>	<b>725</b>	<b>516</b>	<b>45</b>	<b>67</b>	<b>234</b>	<b>77</b>	<b>141</b>	<b>378</b>	<b>224</b>	<b>2,407</b>
<b>1987-1996<sup>g</sup></b>	<b>951</b>	<b>605</b>	<b>20</b>	<b>197</b>	<b>392</b>	<b>141</b>	<b>116</b>	<b>96</b>	<b>132</b>	<b>2,650</b>
<b>1997-2001<sup>g</sup></b>	<b>1,617</b>	<b>1,188</b>	<b>127</b>	<b>239</b>	<b>697</b>	<b>495</b>	<b>655</b>	<b>58</b>	<b>429</b>	<b>5,505</b>

<sup>a</sup> Some data published in Brady et al. 1991, remainder is unpublished.

<sup>b</sup> Gulkana River index counts are those upstream and including the West Fork.

<sup>c</sup> No aerial survey conducted.

<sup>d</sup> Visibility poor due to high water.

<sup>e</sup> Survey flown outside of July 17 - 31.

<sup>f</sup> Counts determined by two surveyors. In years where more than one surveyor was used, counts from the most experienced surveyor are listed.

<sup>g</sup> Averages exclude years when surveys were flown outside July 17-31.

<sup>h</sup> Data in this table has been modified from previous year's reports. Past years table reporting accounted for estimates from outside of defined survey reaches and included extrapolated data.

Appendix A.21. Aerial survey indices of sockeye salmon escapement to the upper Copper River drainage, 1993 - 2002.

Location <sup>a</sup>	Year survey Indices										10 Year Average 1983-92 <sup>c</sup>
	1993 <sup>b</sup>	1994	1995	1996	1997	1998	1999	2000	2001	2002	
Fish Lake				4,800		4,900	1,880	5,000	5,000	125	6,418
Bad Crossing 1&2				780		7,800	195	19	2,000	157	2,604
Suslota Lake				4,100		1,060	0	3,000	2,500	1,500	1,416
Dickey Lake				0		350	11	0	1	0	115
Keg Creek				850	420	160	125	0	1	30	725
Mahlo Creek				3,800	11,800	12,300	325	1,000	400	5,000	2,648
St. Anne Creek				3,500	4,800	4,100	1,300	1,100	300	3,500	4,888
Fish Cr.-Mentasta				400		1,400	450	800	3,500	900	963
Swede Lake				20		770	270	135	500	150	531
Tana River											1,345
Mentasta Lake				2,800		6,100	715	1,200	13,000	5,400	3,277
Tanada Lake		6,270	3,100				350	3,200	200	950	3,849
Salmon Creek							0	500	1,500	1,400	825
Paxson Int-Mud Cr				16,800		15,200	5,700	2,200	7,000	4,800	6,560
Mud Creek and Lake				240			20	30	300	30	172
Mendeltna Creek				1,250	400		120	2,800	800	1,875	2,470
Paxson Lake Outlet						200	1,800	1,000	200	140	2,661
Mud Cr.- Summit L.						700	820	140	450	2,800	7,445
Long Lake											1,577
Tonsina Lake											1,080
Totals	NS	6,270	3,100	39,340	17,420	55,040	14,081	22,124	37,652	28,757	51,569

<sup>a</sup> The escapement figures in this table are based on peak aerial survey estimates and weir counts from a majority of the known spawning areas in the upper Copper River drainage. These indices are not intended to provide a true estimate of escapement for these stocks, but a comparable index based upon the best data currently available. An effort has been made to standardize the estimate across years, however counts were obtained only as environmental conditions allowed and may not necessarily correspond to periods of peak abundance. Missing counts are generally a result of bad weather, high water or other factors that prevented surveys for that given year.

<sup>b</sup> No survey flown.

<sup>c</sup> 1983-1992 average used for anticipated estimate.

Appendix A.22. Temporally stratified age and sex composition of sockeye salmon harvested in the Copper River District commercial common property drift gillnet fishery, 2002.

	Brood Year and Age Class												Total		
	1999			1998			1997			1996				1995	
	0.2	1.1	0.3	1.2	1.4	2.2	0.4	1.3	1.4	2.3	2.4	2.4			
<b>Strata Combined:</b>	05/15	-	08/03												
Sampling dates:	05/17	-	07/20												
Sample size:	3,718 <sup>a</sup>														
Female	0.0	0.0	2.0	6.1	0.1	37.8	0.2	0.3	2.9	0.1	49.6				
Percentage of sample	308	0	25,274	76,572	1,191	472,341	2,425	3,930	36,777	718	619,536				
Number in catch															
Male	0.2	0.0	1.5	7.2	0.1	38.2	0.5	0.5	2.2	0.0	50.4				
Percentage of sample	2,325	166	18,998	89,673	1,112	477,032	5,679	5,774	27,888	0	628,647				
Number in catch															
Total	0.2	0.0	3.5	13.3	0.2	76.1	0.6	0.8	5.2	0.1	100.0				
Percentage of sample	2,633	166	44,272	166,245	2,303	949,693	8,103	9,704	64,664	718	1,248,503				
Number in catch	733	166	4,208	6,655	1,027	9,267	1,980	1,907	5,044	718					
Standard error															

<sup>a</sup> fish with resorbed scales were taken out - Strata 2 has 1 resorbed scale; strata 3 had 2 resorbed scales; strata 4 had 2 resorbed scales; strata 5 had 5 resorbed scales; strata 6 had 67 resorbed scales and strata 7 had 75 resorbed scales.

Appendix A.23. Temporally stratified age and sex composition of chinook salmon harvested in the Copper River District commercial common property drift gillnet fishery, 2002.

	Brood Year and Age Class												Total
	1999		1998		1997		1996		1995				
	0.2	1.1	1.2	2.1	1.3	2.2	1.4	2.3	1.5	2.4			
<b>Strata Combined:</b>	05/12 - 06/15												
Sampling dates:	05/16 - 06/15												
Sample size:	2,143												
Female	0.0	0.1	5.8	0.0	36.4	0.3	12.7	0.4	0.0	0.3	56.2		
Percentage of sample													
Number in catch	0	42	2,263	0	14,111	123	4,928	147	17	126	21,757		
Male	0.0	0.1	6.5	0.1	24.3	0.2	11.1	0.1	0.0	0.2	42.8		
Percentage of sample													
Number in catch	10	56	2,536	25	9,417	89	4,317	34	10	68	16,562		
Total	0.0	0.3	12.7	0.1	61.3	0.5	24.1	0.5	0.1	0.5	100.0		
Percentage of sample													
Number in catch	10	98	4,921	25	23,739	212	9,327	181	27	194	38,734		
Standard error	10	46	305	25	464	70	417	60	20	77			

Appendix A.24. Temporally stratified age and sex composition of coho salmon harvested in the Copper River District commercial common property drift gillnet fishery, 2002.

	Brood Year and Age Class				Total
	1999	1998	1997		
	1.1	2.1	3.1		
<b><u>Strata Combined:</u></b>	06/13 - 09/29				
Sampling dates:	08/13 - 09/10				
Sample size:	1,254				
Female	Percentage of sample	34.7	9.0	0.1	43.8
	Number in catch	175,075	45,148	528	220,751
Male	Percentage of sample	45.9	9.6	0.2	55.7
	Number in catch	231,396	48,518	764	280,678
Total	Percentage of sample	81.0	18.7	0.3	100.0
	Number in catch	408,584	94,347	1,292	504,223
	Standard error	5,832	5,798	783	

## **APPENDIX B: COGHILL AND UNAKWIK DISTRICTS**

Appendix B.1. Total commercial common property salmon harvest by period in the Coghill District drift gillnet and purse seine fisheries, 2002.

Period	Date(s)	Hours	Permits	Landings	Chinook		Sockeye		Coho		Pink		Chum	
					Numbers	Pounds	Numbers	Pounds	Numbers	Pounds	Numbers	Pounds	Numbers	Pounds
<b>DRIFT GILNET</b>														
01	05/27-05/28	24	1	1	0	0	11	70	0	0	0	0	36	357
02	05/30-05/31	24	4	13	2	33	6	36	0	0	0	0	6,532	57,764
03	06/03-06/04	24	8	10	0	61	61	374	0	0	0	0	14,026	107,007
04	06/06-06/08	48	84	276	67	848	210	1,405	0	0	0	0	149,509	1,284,731
05	06/10-06/12	48	122	491	42	513	502	3,408	0	0	1	12	227,252	1,868,756
06	06/13-06/14	24	129	352	17	268	510	3,252	3	13	0	0	151,119	1,269,393
07	06/15-06/16	24	116	280	4	41	540	3,575	0	0	0	0	132,376	1,101,901
08	06/17-06/18	24	110	208	26	255	1,010	7,032	0	0	0	0	96,798	805,469
09	06/18-06/19	12	86	136	0	0	504	3,687	0	0	0	0	58,505	494,375
10	06/20-06/21	24	218	533	10	170	3,318	21,585	0	0	0	0	169,901	1,433,672
11	06/22-06/23	24	168	326	5	70	3,963	26,921	0	0	0	0	108,075	895,351
12	06/27-06/28	24	189	355	7	85	4,365	27,638	0	0	8	23	125,343	1,052,393
13	07/01-07/02	24	77	94	1	12	5,901	37,078	0	0	0	0	23,244	194,720
14	07/02-07/04	48	190	387	5	77	9,415	61,467	3	18	1,339	10,225	115,871	959,214
15	07/04-07/05	24	122	175	1	9	9,169	57,126	8	55	559	1,824	65,145	515,039
16	07/06-07/07	24	67	117	3	34	3,869	24,455	1	8	1,361	5,363	48,929	394,073
17	07/07-07/09	36	123	169	2	15	5,856	38,472	1	8	292	1,245	95,235	728,744
18	07/09-07/11	48	41	60	1	10	3,096	19,421	80	242	212	675	26,293	209,914
19	07/11-07/13	48	28	54	2	23	2,799	17,644	14	106	334	1,051	20,549	158,843
20	07/14-07/16	48	25	64	5	79	2,939	18,961	37	295	727	2,788	17,224	128,494
21	07/18-07/20	36	24	54	3	58	1,543	9,502	231	1,907	1,618	5,858	8,392	64,647
22	07/21-07/27	156	2	3	0	0	154	925	0	0	6	20	89	666
29	08/26-09/01	156	1	3	0	0	4	28	115	1,057	0	0	0	0
30	09/02-09/08	156	2	3	0	0	13	65	262	2,542	0	0	0	0
32	09/16-09/22	156	1	1	0	0	0	0	29	252	0	0	0	0
Total		1,284		4,165	203	2,600	59,758	384,127	784	6,503	6,457	29,084	1,660,443	13,725,523
Average Weight						12.81		6.43		8.29		4.50		8.27

Appendix B.1. (page 2 of 2)

Period	Date(s)	Hours	Permits	Landings	Chinook		Sockeye		Coho		Pink		Chum	
					Numbers	Pounds	Numbers	Pounds	Numbers	Pounds	Numbers	Pounds	Numbers	Pounds
<b>PURSE SEINE</b>														
17	07/07-07/09	36	63	100	0	0	0	0	0	0	0	0	360,617	2,906,745
18	07/09-07/11	48	48	67	4	47	43	273	1	10	196	663	186,952	1,490,975
19	07/11-07/13	48	37	58	0	0	95	667	4	36	59	178	118,225	920,005
20	07/14-07/16	48	30	53	0	0	89	550	0	0	77	255	110,400	878,078
21	07/18-07/20	36	18	21	0	0	1,448	8,036	0	0	2,458	7,771	18,424	145,349
22	07/21-07/27	156	1	1	0	0	153	917	0	0	83	290	6	48
24	08/16	12	41	49	1	15	48	311	28	210	331,416	1,198,550	66	539
25	08/18	12	28	34	0	0	59	387	37	332	223,978	802,134	74	594
26	08/20	12	28	30	0	0	48	282	26	231	160,492	569,018	9	75
27	08/22	12	23	23	0	0	33	201	34	284	45,953	175,564	1	8
28	08/24	12	10	10	0	0	15	98	4	32	31,975	119,446	0	0
29	08/26-09/01	156	15	59	0	0	29	196	1,247	11,017	381,245	1,393,468	11	90
30	09/02-09/08	156	6	21	0	0	8	47	1,050	8,859	93,248	313,446	9	67
Total		744		526	5	62	2,068	11,965	2,431	21,011	1,271,180	4,580,783	794,794	6,342,573
Average Weight						12.40		5.79		8.64		3.60		7.98
Combined Total				4,691	208	2,662	61,826	396,092	3,215	27,514	1,277,637	4,609,867	2,455,237	20,068,096
Average Weight						12.80		6.41		8.56		3.61		8.17

Appendix B.2. Total commercial common property salmon harvest by species in the Coghill District, 1983 - 2002.

Year	CATCH BY SPECIES							Total
	Chinook	Sockeye	Coho	Pink	Chum			
<b>DRIFT GILLNET</b>								
1983	340	38,273	1,013	233,263	234,022			506,911
1984	396	94,956	563	897,496	264,878			1,258,289
1985	380	339,296	1,131	454,531	246,824			1,042,162
1986	617	381,565	789	68,887	218,971			670,829
1987	352	377,454	13,396	712,897	318,842			1,422,941
1988	501	82,294	41,307	1,314,061	346,388			1,784,551
1989	364	106,114	80,737	628,522	194,584			1,010,321
1990	126	11,988	128,605	1,907,510	301,209			2,349,438
1991	92	3,888	78,363	231,501	34,223			348,067
1992	242	57,919	86,782	167,384	182,433			494,760
1993	576	66,532	37,898	141,279	635,208			881,493
1994	390	12,928	50,879	58,334	554,181			676,712
1995	468	57,797	29,343	161,493	379,659			628,760
1996	575	177,530	20,926	59,447	612,969			871,447
1997	862	227,231	5,618	154,969	689,977			1,078,657
1998	605	59,463	2,925	383,604	347,317			793,914
1999	401	106,028	1,114	32,408	689,210			829,161
2000	269	176,452	82,869	88,228	1,643,801			1,991,619
2001	216	87,539	3,185	308,707	1,142,449			1,542,096
2002	203	59,758	784	6,457	1,660,443			1,727,645
Ten Year Average (1992-2001)	460	102,942	32,154	155,585	687,720			978,862

Appendix B.2. (page 2 of 3)

Year	CATCH BY SPECIES							Total
	Chinook	Sockeye	Coho	Pink	Chum			
<b>PURSE SEINE</b>								
1983	0	175	16	41,048	8,958			50,197
1984	0	21	0	10,911	1,126			12,058
1985	85	10,757	112	69,242	19,330			99,526
1986	186	18,514	98	145,706	27,078			191,582
1987	58	38,899	1,956	865,671	59,252			965,836
1988	63	1,623	15,787	1,600,481	11,755			1,629,709
1989	61	2,030	39,484	3,296,965	124,639			3,463,179
1990	2	286	11,819	785,278	10,951			808,336
1991	11	1,562	621	1,980,074	11,519			1,993,787
1992	6	765	27,382	196,503	1,603			226,259
1993	46	6,250	1,760	352,468	3,645			364,169
1994	50	21,060	30,517	3,538,760	3,575			3,593,962
1995	33	20,670	5,337	917,200	2,597			945,837
1996	1	2,640	5,319	1,484,422	463			1,492,845
1997	7	5,694	1,269	1,875,617	33,139			1,915,726
1998	20	1,702	1,531	2,845,157	21,600			2,870,010
1999	34	3,229	338	3,509,722	621,349			4,134,672
2000	1	2,984	31,991	3,271,314	1,338			3,307,628
2001	8	2,398	356	648,335	3,802			654,899
2002	5	2,068	2,431	1,271,180	794,794			2,070,478
Ten Year								
Average (1992-2001)	21	6,739	10,580	1,863,950	69,311			1,950,601

Appendix B.2. (page 3 of 3)

Year	CATCH BY SPECIES							Total
	Chinook	Sockeye	Coho	Pink	Chum			
<b>COMBINED GEARS</b>								
1983	340	38,448	1,029	274,311	242,980			557,108
1984	396	94,977	563	908,407	266,004			1,270,347
1985	465	350,053	1,243	523,773	266,154			1,141,688
1986	803	400,079	887	214,593	246,049			862,411
1987	410	416,353	15,352	1,578,568	378,094			2,388,777
1988	564	83,917	57,094	2,914,542	358,143			3,414,260
1989	425	108,144	120,221	3,925,487	319,223			4,473,500
1990	128	12,274	140,424	2,692,788	312,160			3,157,774
1991	103	5,450	78,984	2,211,575	45,742			2,341,854
1992	248	58,684	114,164	363,887	184,036			721,019
1993	622	72,782	39,658	493,747	638,853			1,245,662
1994	440	33,988	81,396	3,597,094	557,756			4,270,674
1995	501	78,467	34,680	1,078,693	382,256			1,574,597
1996	576	180,170	26,245	1,543,869	613,432			2,364,292
1997	869	232,925	6,887	2,030,586	723,116			2,994,383
1998	625	61,165	4,456	3,228,761	368,917			3,663,924
1999	435	109,257	1,452	3,542,130	1,310,559			4,963,833
2000	270	179,436	114,860	3,359,542	1,645,139			5,299,247
2001	224	89,937	3,541	957,042	1,146,251			2,196,995
2002	208	61,826	3,215	1,277,637	2,455,237			3,798,123
<b>Ten Year</b>								
Average (1992-2001)	481	109,681	42,734	2,019,535	757,032			2,929,463

Appendix B.3. Daily salmon escapement through the Coghill River weir, 2002.

Date	Sockeye		Pink <sup>a</sup>		Chum		Coho		Chinook	
	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.
06/13	3	3	0	0	0	0	0	0	0	0
06/14	0	3	0	0	0	0	0	0	0	0
06/15	0	3	0	0	0	0	0	0	0	0
06/16	3	6	0	0	0	0	0	0	0	0
06/17	6	12	0	0	0	0	0	0	0	0
06/18	2	14	0	0	0	0	0	0	0	0
06/19	16	30	0	0	0	0	0	0	0	0
06/20	7	37	0	0	0	0	0	0	0	0
06/21	14	51	0	0	0	0	0	0	0	0
06/22	4	55	0	0	0	0	0	0	0	0
06/23	12	67	0	0	0	0	0	0	0	0
06/24	10	77	0	0	0	0	0	0	1	1
06/25	186	263	0	0	0	0	0	0	1	2
06/26	1,007	1,270	0	0	4	4	0	0	0	2
06/27	257	1,527	0	0	2	6	0	0	0	2
06/28	1,775	3,302	0	0	3	9	0	0	0	2
06/29	1,278	4,580	0	0	0	9	0	0	1	3
06/30	6,345	10,925	0	0	0	9	0	0	0	3
07/01	5,223	16,148	1	1	3	12	0	0	0	3
07/02	839	16,987	0	1	0	12	0	0	0	3
07/03	603	17,590	2	3	1	13	0	0	0	3
07/04	339	17,929	0	3	0	13	0	0	0	3
07/05	451	18,380	1	4	5	18	0	0	1	4
07/06	529	18,909	0	4	2	20	0	0	0	4
07/07	703	19,612	7	11	1	21	0	0	0	4
07/08	295	19,907	1	12	1	22	0	0	0	4
07/09	733	20,640	1	13	1	23	0	0	0	4
07/10	1,357	21,997	23	36	2	25	0	0	1	5
07/11	473	22,470	13	49	4	29	0	0	0	5
07/12	821	23,291	16	65	6	35	0	0	1	6
07/13	372	23,663	7	72	2	37	0	0	0	6
07/14	286	23,949	9	81	3	40	0	0	0	6
07/15	463	24,412	27	108	3	43	0	0	1	7
07/16	263	24,675	17	125	2	45	0	0	1	8
07/17	337	25,012	17	142	6	51	0	0	2	10
07/18	568	25,580	58	200	5	56	0	0	0	10
07/19	83	25,663	7	207	0	56	2	2	1	11
07/20	33	25,696	2	209	4	60	0	2	0	11
07/21	79	25,775	9	218	0	60	0	2	0	11
07/22	59	25,834	2	220	3	63	0	2	1	12
07/23	69	25,903	4	224	0	63	2	4	0	12
07/24	227	26,130	121	345	3	66	0	4	2	14
07/25	749	26,879	1,090	1,435	14	80	4	8	2	16
07/26	224	27,103	438	1,873	9	89	1	9	1	17
07/27	212	27,315	927	2,800	7	96	3	12	2	19
07/28	122	27,437	489	3,289	12	108	6	18	1	20
07/29	140	27,577	610	3,899	6	114	16	34	2	22
07/30	85	27,662	471	4,370	8	122	4	38	0	22
07/31	108	27,770	610	4,980	8	130	17	55	0	22
08/01	63	27,833	380	5,360	8	138	6	61	1	23
08/02	70	27,903	330	5,690	7	145	2	63	0	23
08/03	69	27,972	443	6,133	7	152	5	68	0	23
08/04	45	28,017	267	6,400	5	157	9	77	0	23
08/05	63	28,080	787	7,187	11	168	14	91	0	23
08/06	38	28,118	641	7,828	8	176	14	105	0	23
08/07	55	28,173	5,337	13,165	40	216	53	158	1	24
08/08	52	28,225	4,014	17,179	13	229	54	212	0	24
08/09	26	28,251	1,449	18,628	4	233	42	254	0	24

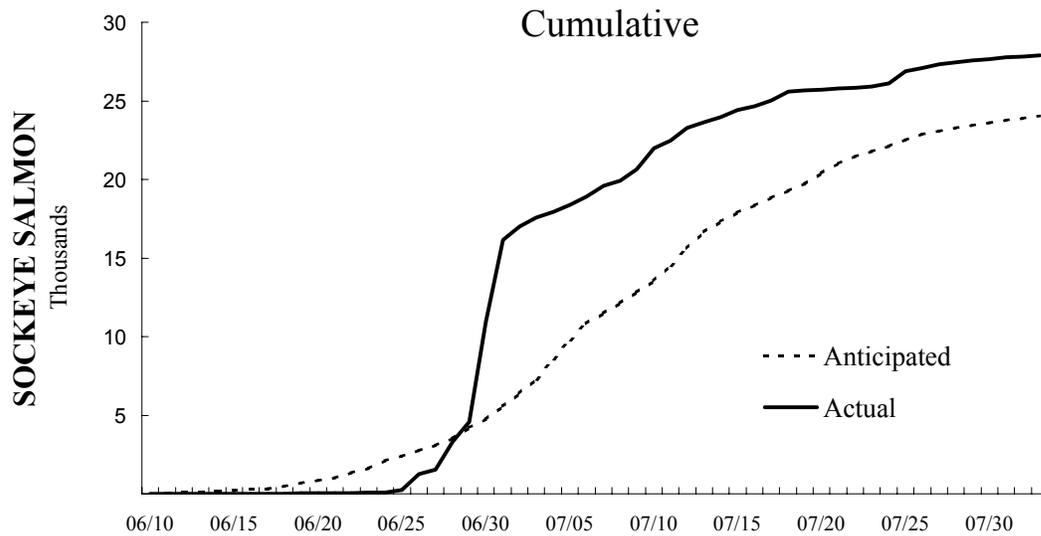
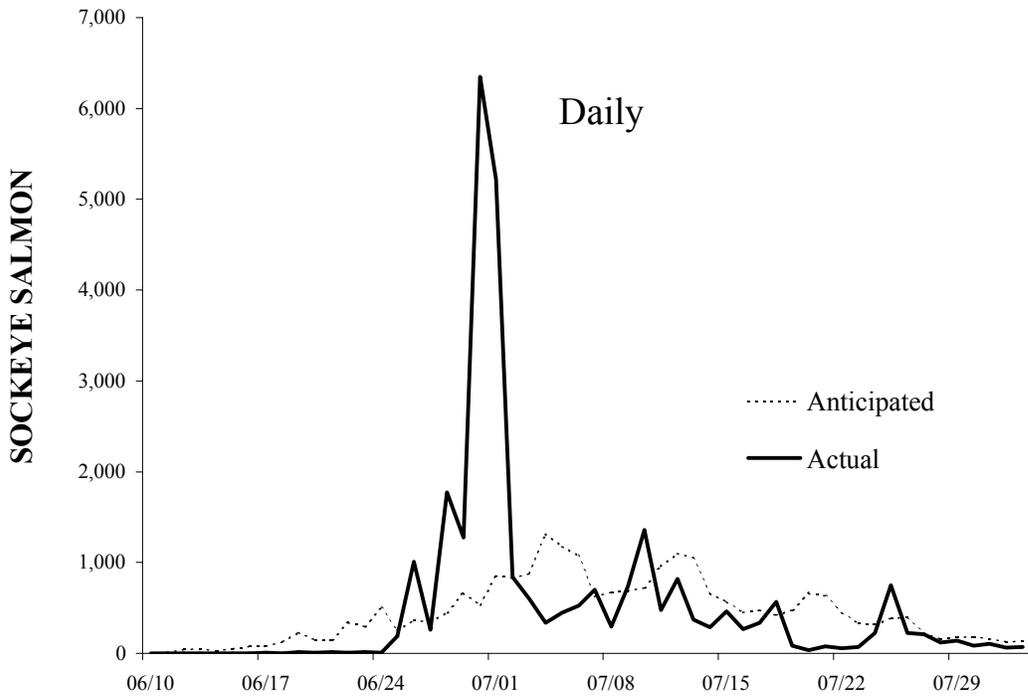
-continued-

Appendix B.3. (page 2 of 2)

Date	Sockeye		Pink <sup>a</sup>		Chum		Coho		Chinook	
	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.
08/10	14	28,265	1,078	19,706	3	236	22	276	0	24
08/11	b									
08/12	b									
08/13	b									
08/14	b									
08/15	3	28,268	17	19,723	2	238	2	278	0	24
08/16	2	28,270	105	19,828	3	241	4	282	0	24
08/17	1	28,271	174	20,002	5	246	9	291	0	25
08/18	19	28,290	547	20,549	4	250	49	390	1	25
08/19	11	28,301	480	21,029	5	255	58	398	0	25
08/20	6	28,307	1,281	22,310	2	257	130	528	0	25
08/21	b									
08/22	b									
08/23	b									
08/24	b									
08/25	b									
08/26	2	28,309	48	22,358	0	257	32	560	0	25
08/27	0	28,309	97	22,455	0	257	34	594	0	25
08/28	0	28,309	123	22,578	0	257	104	698	0	25
08/29	2	28,311	43	22,621	0	257	74	772	0	25
08/30	1	28,312	77	22,698	0	257	95	867	0	25
08/31	0	28,312	28	22,726	0	257	139	1,006	0	25
09/01	2	28,314	7	22,733	0	257	95	1,101	0	25
09/02	0	28,314	6	22,739	0	257	118	1,219	0	25
09/03	3	28,317	5	22,744	0	257	169	1,388	0	25
09/04	2	28,319	3	22,747	0	257	202	1,590	0	25
09/05	0	28,319	0	22,747	0	257	93	1,683	0	25
09/06	2	28,321	0	22,747	0	257	131	1,814	0	25
09/07	0	28,321	0	22,747	0	257	112	1,926	0	25
09/08	0	28,321	0	22,747	0	257	115	2,041	0	25
09/09	1	28,322	0	22,747	0	257	81	2,122	0	25
09/10	1	28,323	0	22,747	0	257	132	2,254	0	25
09/11	0	28,323	0	22,747	0	257	41	2,295	0	25
09/12	0	28,323	0	22,747	0	257	33	2,328	0	25

<sup>a</sup> Count may be incomplete. The Coghill weir is designed to prohibit the passage of sockeye salmon, but smaller pink salmon may pass through the weir uncounted.

<sup>b</sup> Weir pickets were removed due to high water.



Appendix B.4. Anticipated daily and cumulative sockeye salmon escapement versus actual escapement past the Coghill River weir, 2002.

Appendix B.5. Salmon escapement by species in the Coghill District,  
1970 - 2002.

Year	Sockeye <sup>a</sup>	Pink <sup>b</sup>	Chum <sup>b</sup>
1970	35,200	95,170	11,880
1971	15,000	62,160	6,600
1972	51,000	30,960	28,160
1973	55,000	493,780	72,610
1974	22,333	56,940	29,280
1975	34,855	452,430	3,640
1976	9,056	57,090	25,670
1977	31,562	130,510	43,940
1978	42,284	85,450	18,160
1979	48,281	70,980	6,330
1980	142,253	214,930	23,340
1981	156,112	106,450	2,050
1982	180,314	368,380	22,130
1983	38,783	310,330	61,410
1984	63,622	429,450	19,690
1985	163,311	296,970	22,140
1986	71,095	101,600	13,140
1987	187,263	147,060	24,510
1988	72,052	37,070	39,240
1989	37,751	45,510	22,680
1990	8,949	49,110	26,020
1991	9,752	98,580	6,070
1992	29,642	23,611	10,003
1993	9,232	41,837	8,430
1994	7,264	65,648	14,176
1995	30,382	46,029	11,596
1996	38,693	104,781	19,669
1997	35,517	52,961	3,101
1998	28,923	85,968	22,764
1999	59,311	168,816	5,057
2000	28,446	223,646	20,488
2001	38,558	148,665	13,388
2002	28,323	54,882	7,430
10-Year Average (1992-2001)	30,597	96,196	12,867

<sup>a</sup> Escapement count of sockeye salmon past the Coghill River weir.

<sup>b</sup> Pink and chum escapements estimated for streams in district by aerial surveys. Historical data revised in 1990.

Appendix B.6. Summary of periods, dates, duration, and emergency orders issued for the commercial common property salmon fisheries in the Coghill and Unakwik Districts, 2002.

UNAKWIK (229)				COGHILL (223)				Emergency Orders
Periods		Dates	Hours Open	Periods		Dates	Duration	Issued
P/S <sup>a</sup>	GN <sup>a</sup>			P/S	GN			
				01		05/27-05/28	24	2-F-E-009-02 <sup>b</sup>
				02		05/30-05/31	24	2-F-E-010-02 <sup>b</sup>
				03		06/03-06/04	24	2-F-E-011-02 <sup>b</sup>
				04		06/06-06/08	48	2-F-E-015-02 <sup>b</sup>
				05		06/10-06/12	48	2-F-E-018-02 <sup>b</sup>
				06		06/13-06/14	24	2-F-E-019-02 <sup>b</sup>
				07		06/15-06/16	24	2-F-E-019-02 <sup>b</sup>
01	01	06/17	12					2-F-E-021-02 <sup>c</sup>
				08		06/17-06/18	24	2-F-E-019-02 <sup>b</sup>
				09		06/18-06/19	12	2-F-E-022-02 <sup>d</sup>
02	02	06/20-06/21	24	10		06/20-06/21	24	2-F-E-022-02 <sup>d</sup> , 2-F-E-025-02 <sup>c</sup>
				11		06/22-06/23	24	2-F-E-022-02 <sup>d</sup>
03	03	06/24-06/25	24					2-F-E-027-02 <sup>c</sup>
04	04	06/27-06/28	24	12		06/27-06/28	24	2-F-E-029-02 <sup>c,d</sup>
05	05	07/01-07/02	24	13		07/01-07/02	24	2-F-E-030-02 <sup>c,e</sup>
				14		07/02-07/04	48	2-F-E-031-02, 2-F-E-033-02 <sup>f</sup>
06	06	07/04-07/05	24	15		07/04-07/05	24	2-F-E-034-02 <sup>g</sup> , 2-F-E-035-02 <sup>c</sup>
				16		07/06-07/07	24	2-F-E-034-02 <sup>h</sup> , 2-F-E-037-02 <sup>i</sup>
07	07	07/06-07/07	24					2-F-E-038-02 <sup>c</sup>
				17		07/08-07/09	36	2-F-E-034-02 <sup>h</sup> , 2-F-E-037-02 <sup>i</sup>
08	08	07/08-07/09	24	18		07/09-07/11	48	2-F-E-037-02 <sup>j</sup> , 2-F-E-040-02 <sup>j</sup>
				19		07/11-07/13	48	2-F-E-037-02 <sup>j</sup> , 2-F-E-040-02 <sup>j</sup>
09	09	07/10-07/11	24					2-F-E-041-02 <sup>c</sup>
10	10	07/12-07/13	24					2-F-E-041-02 <sup>c</sup>
11	11	07/14-07/16	24					2-F-E-041-02, 2-F-E-043-02 <sup>c</sup>
				20	20	07/14-07/16	48	2-F-E-040-02, 2-F-E-044-02 <sup>i</sup>
12	12	07/18-07/20	36	21	21	07/18-07/20	36	2-F-E-047-02 <sup>c,i</sup> , 2-F-E-049-02 <sup>k</sup>
				22	22	07/21-07/27	156	2-F-E-062-02 <sup>l</sup>
13	13	07/22-07/23	36					2-F-E-053-02 <sup>c</sup>
14	14	07/25-07/27	36					2-F-E-054-02 <sup>c</sup>
15	15	07/29-07/30	36					2-F-E-057-02 <sup>c</sup>
				23	23	07/29-07/31	48	2-F-E-066-02 <sup>l</sup>
				24	24	08/16	12	2-F-E-075-02 <sup>m</sup>
				25	25	08/18	12	2-F-E-076-02 <sup>m</sup>
				26	26	08/20	12	2-F-E-077-02 <sup>m</sup>
				27	27	08/22	12	2-F-E-080-02 <sup>m</sup>
				28	28	08/24	12	2-F-E-081-02 <sup>m</sup>
				29	29	08/26-09/01	156	2-F-E-082-02 <sup>n</sup>
				30	30	09/02-09/08	156	2-F-E-082-02 <sup>n</sup>
				31	31	09/09-09/15	156	2-F-E-082-02 <sup>n</sup> , 2-F-E-086-02 <sup>o</sup>
				32	32	09/16-09/22	156	2-F-E-086-02 <sup>o</sup>

<sup>a</sup> P/S (Purse Seine) and GN (Drift Gillnet).

<sup>b</sup> All waters of the Coghill District, excluding the Wally Noerenberg Hatchery (WNH) Terminal Harvest Area (THA) and Special Harvest Area (SHA), were open.

<sup>c</sup> The entire Unakwik District was open.

<sup>d</sup> Waters of the Coghill District south of the latitude of Point Pakenham, excluding the WNH THA and SHA, were open.

<sup>e</sup> In the Coghill District waters south of the latitude of Fable Point, excluding the WNH THA and SHA, were open.

-continued-

## Appendix B.6. (page 2 of 2)

---

<sup>f</sup> Within the Coghill District, only the waters of the Esther Subdistrict were closed.

Coghill River anadromous stream closure was not in effect beginning at 10:30 am Tuesday, July 2.

<sup>g</sup> Waters of the Coghill District, excluding the WNH THA and SHA were open.

Coghill River anadromous stream closure was not in effect.

<sup>h</sup> Waters of the Coghill District, excluding the WNH THA, were open.

Coghill River anadromous stream closure was not in effect.

<sup>i</sup> Waters of the Coghill District, including the WNH THA and SHA up to a line of buoys in front of the barrier seine were open to drift gillnet gear, only waters of the WNH THA and SHA up to a line of buoys in front of the barrier seine were open to purse seine gear.

<sup>j</sup> Waters of the Coghill District north of the Golden Lagoon were open to drift gillnet gear only.

<sup>k</sup> Waters of the Coghill District, excluding the WNH SHA up to a line of buoys in front of the barrier seine were open to drift gillnet gear, only waters of the WNH THA excluding the SHA up to a line of buoys in front of the barrier seine were open to purse seine gear.

<sup>l</sup> Waters of the Coghill District north of the Golden Lagoon were open. Coghill River anadromous stream closure was not in effect.

<sup>m</sup> Waters of the Esther Subdistrict, excluding the WNH THA and SHA, were open.

<sup>n</sup> Waters of the Esther Subdistrict, including the WNH THA and SHA, were open.

<sup>o</sup> Waters of the Esther Subdistrict, including the WNH THA, were open.

Appendix B.7. Temporally stratified age and sex composition of sockeye salmon harvested in the Coghill District commercial common property drift gillnet fisheries, 2002.

	Brood Year and Age Class <sup>a</sup>								Total
	1999		1998		1997		1996		
	0.2	0.3	1.2	1.3	2.2	1.4	2.3		
<b>Strata Combined:</b>	05/27 - 09/08								
Sampling dates:	06/29 - 07/08								
Sample size:	695								
Female	0.6	0.0	40.5	7.0	0.5	0.0	0.1	48.8	
Percentage of sample	345	0	24,229	4,184	296	0	87	29,142	
Number in catch									
Male	0.1	0.1	42.2	7.9	0.6	0.1	0.0	51.0	
Percentage of sample	75	75	25,201	4,695	371	37	0	30,454	
Number in catch									
Total	0.7	0.1	82.9	14.9	1.1	0.1	0.1	100.0	
Percentage of sample	420	75	49,555	8,917	666	37	87	59,758	
Number in catch	278	53	878	758	371	37	87		
Standard error									

<sup>a</sup>Age composition generated using length frequency data only.

Appendix B.8. Temporally stratified age and sex composition of sockeye salmon escapement through the weir on the outlet stream of Coghill Lake, 2002.

	Brood Year and Age Class										Total
	1999		1998		1997		1996				
	0.2	1.1	1.2	2.1	1.3	2.2	1.4	2.3			
<b>Strata Combined:</b>	06/13 - 09/10										
Sampling dates:	06/30 - 07/24										
Sample size:	1,408										
Female	0.0	0.0	9.8	0.0	38.5	0.5	0.1	0.5	49.4		
Percentage of sample	13	0	2,775	0	10,905	131	27	135	13,986		
Number in escapement											
Male	0.0	1.1	16.1	0.1	32.5	0.0	0.4	0.4	50.6		
Percentage of sample	13	305	4,547	27	9,213	12	110	110	14,337		
Number in escapement											
Total	0.1	1.1	25.9	0.1	71.0	0.5	0.5	0.9	100.0		
Percentage of sample	27	305	7,322	27	20,118	143	137	244	28,323		
Number in escapement	19	63	354	19	365	43	58	79			
Standard error											

Appendix B.9. Total commercial common property salmon harvest by period in the Unakwik District drift gillnet and purse seine fisheries, 2002.

**DRIFT GILLNET**

Period	Date(s) <sup>a</sup>	Hours	Permits	Landings	Chinook		Sockeye		Coho		Pink		Chum	
					Numbers	Pounds								
01	06/17	12	1	1	0	0	156	936	0	0	0	0	0	0
03	06/24-06/25	24	6	6	0	0	529	3,931	0	0	0	0	0	0
04	06/27-06/28	24	28	47	3	54	5,012	33,249	0	0	0	0	538	3,903
05	07/01-07/02	24	8	12	2	28	1,300	8,179	0	0	0	0	88	677
06	07/04-07/05	24	2	2	0	0	635	3,815	0	0	0	0	0	0
07	07/06-07/07	24	1	1	0	0	112	729	0	0	0	0	0	0
08	07/08-07/09	24	2	2	0	0	709	4,376	0	0	0	0	135	1,078
11	07/14-07/16	48	1	1	0	0	179	1,075	0	0	0	0	0	0
12	07/18-07/20	36	2	2	0	0	561	3,374	14	50	0	0	0	0
13	07/22-07/23	36	2	2	0	0	632	3,793	0	0	0	0	0	0
Total			36	76	5	82	9,825	63,457	14	50			761	5,658
Average Weight						16.40		6.46		3.57				7.43

**PURSE SEINE**

Period	Date <sup>a</sup>	Hours	Permits	Landings	Chinook		Sockeye		Coho		Pink		Chum	
					Numbers	Pounds								
13	07/22-07/23	36	2	2	3	26	1,141	4,850	16	118	133	379	123	1,096
Total			2	2	3	26	1,141	4,850	16	118	133	379	123	1,096
Average Weight						8.67		4.25		7.38		2.85		8.91

<sup>a</sup> For area and opening times refer to Appendix B.6.

Appendix B.10. Total commercial common property salmon harvest by species in the Unakwik District, 1990 - 2002.

Year	CATCH BY SPECIES							Total
	Chinook	Sockeye	Coho	Pink	Chum			
<b>DRIFT GILLNET</b>								
1990	3	247	127	9,986	23			10,386
1991	13	4,482	11	12,299	118			16,923
1992	3	2,224	13	3,972	94			6,306
1993	5	14,691	4	3,338	978			19,016
1994	0	548	0	300	0			848
1995	8	2,116	0	1	36			2,161
1996	3	6,063	0	17	694			6,777
1997	3	3,411	0	0	177			3,591
1998	10	13,651	55	1,932	586			16,234
1999	4	8,544	5	0	296			8,849
2000	0	1,119	0	0	20			1,139
2001	3	2,298	2	4	44			2,351
2002	5	9,825	14	0	761			10,605
10-Year Average (1992-2001)	4	5,467	8	956	293			6,727

-continued-

Appendix B.10. (page 2 of 3)

Year	CATCH BY SPECIES					Total
	Chinook	Sockeye	Coho	Pink	Chum	
<b>PURSE SEINE</b>						
1990 <sup>a</sup>						
1991	0	819	3	121,068	79	121,969
1992	0	42	2	13,264	119	13,427
1993	0	79	0	3,233	67	3,379
1994	0	226	102	388,901	73	389,302
1995 <sup>a</sup>						
1996 <sup>a</sup>						
1997 <sup>a</sup>						
1998 <sup>a</sup>						
1999	1	386	0	0	2	389
2000	0	0	0	20,485	0	20,485
2001 <sup>a</sup>						
2002	3	1,141	16	133	123	1,416
10-Year Average (1992-2001)	0	147	21	85,177	52	85,396

-continued-

Appendix B.10. (page 3 of 3)

Year	CATCH BY SPECIES							Total
	Chinook	Sockeye	Coho	Pink	Chum			
<b>COMBINED GEARS</b>								
1990	3	247	127	9,986	23			10,386
1991	13	5,301	14	133,367	197			138,892
1992	3	2,266	15	17,236	213			19,733
1993	5	14,770	4	6,571	1,045			22,395
1994	0	774	102	389,201	73			390,150
1995	8	2,116	0	1	36			2,161
1996	3	6,063	0	17	694			6,777
1997	4	3,797	0	0	179			3,980
1998	10	13,651	55	1,932	586			16,234
1999	5	8,930	5	0	298			9,238
2000	0	1,119	0	20,485	20			21,624
2001	3	2,298	2	4	44			2,351
2002	8	10,966	30	133	884			12,021
10-Year Average (1992-2001)	4	5,578	18	43,545	319			49,464

<sup>a</sup>No harvest recorded.

## **APPENDIX C: ESHAMY DISTRICT**

Appendix C.1. Total commercial common property salmon harvest by period in the Eshamy District drift and set gillnet fisheries, 2002.

Period	Date(s) <sup>a</sup>	Hours	Permits	Landings	Chinook		Sockeye		Coho		Pink		Chum		
					Numbers	Pounds	Numbers	Pounds	Numbers	Pounds	Numbers	Pounds	Numbers	Pounds	
<b>DRIFT GILLNET</b>															
01	05/16-05/19	72	89	331	257	3,320	113,845	870,541	0	0	0	0	0	144	1,167
02	05/20-05/22	48	68	164	117	1,770	35,023	236,959	0	0	0	0	0	92	799
03	05/23-05/25	48	22	44	31	552	13,115	83,637	0	0	0	0	0	49	484
04	05/27-05/29	48	4	8	0	0	3,134	21,329	0	0	0	0	0	0	0
05	05/30-06/01	48	22	47	3	41	8,473	57,349	0	0	0	0	0	742	7,082
06	06/03-06/05	48	6	13	4	51	1,813	12,049	0	0	0	0	0	1,535	13,647
07	06/06-06/08	48	6	7	0	0	952	6,195	0	0	0	0	0	1,276	11,491
08	06/10-06/12	48	1	1	0	0	129	902	0	0	0	0	0	13	133
09	06/13-06/14	24	4	5	0	0	923	6,206	0	0	0	0	0	447	3,775
10	06/17-06/19	48	6	10	0	0	2,523	14,798	0	0	0	0	0	237	1,904
11	06/20-06/21	24	21	30	0	0	3,573	22,239	0	0	3	12	0	1,358	11,581
12	06/24-06/25	24	57	119	0	0	26,151	160,340	0	0	0	0	0	4,172	32,610
13	07/01-07/02	24	297	554	3	29	148,872	911,911	13	107	276	925	24,049	187,506	
14	07/04-07/05	24	301	554	2	23	61,571	366,653	49	417	2,685	8,651	22,031	171,344	
15	07/06-07/07	24	137	255	0	0	26,604	161,168	49	446	4,402	13,592	11,285	88,166	
16	07/08-07/09	24	101	143	2	37	14,867	88,511	48	195	1,781	6,263	6,180	48,739	
17	07/10-07/11	24	57	101	0	0	14,317	87,055	27	196	1,382	4,737	3,763	29,236	
18	07/12-07/13	24	35	56	1	16	10,422	63,105	15	119	941	3,169	2,393	18,374	
19	07/14-07/16	48	66	212	1	10	19,267	117,231	129	1,064	7,143	24,623	9,443	76,805	
20	07/18-07/20	36	75	142	1	17	13,648	80,706	483	4,146	7,815	25,859	4,169	34,997	
21	07/22-07/23	24	69	151	1	8	11,489	70,822	277	2,425	10,982	36,496	4,903	39,655	
22	07/25-07/27	36	94	188	3	30	28,209	171,057	68	592	9,838	32,981	3,319	25,062	
23	07/29-07/30	36	72	137	2	44	6,614	40,875	94	818	18,942	67,055	1,987	15,972	
24	08/01-08/03	36	36	73	0	0	5,196	31,184	78	660	7,557	25,386	230	1,877	
25	08/05-08/06	24	20	36	0	0	1,941	12,130	83	699	6,807	25,695	174	1,484	
26	08/08-08/09	24	24	38	0	0	2,696	16,739	94	743	9,799	34,807	138	1,131	
27	08/12-08/13	24	9	16	0	0	1,020	6,145	28	249	6,737	20,652	54	448	
28	08/15-08/16	24	12	21	0	0	1,226	7,367	43	395	8,365	27,181	28	226	
29	08/19-08/22	72	10	29	0	0	1,210	7,301	301	2,250	10,765	35,595	67	514	
30	08/23-08/25	60	9	37	0	0	7,474	48,274	845	6,440	1,362	4,558	6	58	
31	08/26-09/01	156	9	44	0	0	2,902	18,252	808	6,497	4,783	14,519	0	0	
Total			392	3,567	428	5,948	589,199	3,799,030	3,532	28,458	122,365	412,756	104,284	826,267	
Average Weight						13.90		6.45	8.06		3.37			7.92	

-continued-

Appendix C.1. (page 2 of 2)

Period	Date(s) <sup>a</sup>	Hours	Permits	Landings	Chinook		Sockeye		Coho		Pink		Chum		Pounds
					Numbers	Pounds	Numbers	Pounds	Numbers	Pounds	Numbers	Pounds	Numbers	Pounds	
<b>SET GILLNET</b>															
01	05/16-05/19	72	13	89	4	109	28,159	192,012	0	0	0	0	0	0	24
02	05/20-05/22	48	14	41	2	72	11,293	76,934	3	18	0	0	0	0	24
03	05/23-05/25	48	33	33	9	167	8,779	53,912	0	0	0	0	0	0	128
04	05/27-05/29	48	12	35	2	66	10,342	69,331	0	0	0	0	0	0	85
05	05/30-06/01	48	5	21	0	48	3,914	26,456	0	0	0	0	0	0	394
06	06/03-06/05	48	8	27	1	23	6,086	38,778	0	0	0	0	0	0	5,296
07	06/06-06/08	48	5	10	1	7	1,277	7,659	0	0	0	0	0	0	623
08	06/10-06/12	48	3	7	0	0	1,910	12,832	0	0	0	0	0	0	0
09	06/17-06/19	48	11	21	0	0	2,523	14,693	0	0	0	0	0	0	2,476
10	06/20-06/21	24	9	10	0	0	1,977	11,872	0	0	0	0	0	0	386
11	06/24-06/25	24	11	24	0	0	8,380	50,814	0	0	0	0	0	0	3,648
12	07/01-07/02	24	21	58	0	0	27,829	167,986	3	26	211	837	475	3,887	29,489
13	07/04-07/05	24	23	61	0	0	14,820	89,228	3	24	390	1,363	2,222	18,291	18,291
14	07/06-07/07	24	24	49	0	0	10,449	62,748	15	127	526	2,545	2,671	19,913	19,913
15	07/08-07/09	24	24	54	0	0	9,520	56,998	3	30	557	1,809	1,607	13,412	13,412
16	07/10-07/11	24	27	62	0	0	11,802	71,067	39	304	1,290	4,190	1,414	10,986	10,986
17	07/12-07/13	24	26	44	1	8	11,336	65,818	4	32	1,104	3,650	1,271	10,196	10,196
18	07/14-07/16	48	28	122	2	19	16,400	100,178	24	149	3,743	12,020	2,274	18,262	18,262
19	07/18-07/20	36	21	52	1	10	9,496	53,850	8	71	3,577	11,338	1,484	12,868	12,868
20	07/22-07/23	24	26	98	3	45	10,911	63,669	16	108	4,279	14,995	1,721	13,138	13,138
21	07/25-07/27	36	25	76	0	0	9,174	55,685	20	113	2,840	9,835	970	7,721	7,721
22	07/29-07/30	36	22	85	4	49	9,955	58,489	19	155	9,327	30,268	1,104	8,295	8,295
23	08/01-08/03	36	15	49	0	0	3,475	21,862	42	338	8,740	30,555	341	2,575	2,575
24	08/05-08/06	24	15	31	0	0	3,459	17,485	29	305	6,140	22,273	171	1,516	1,516
25	08/08-08/09	24	8	17	0	0	1,378	8,766	5	44	3,236	11,859	41	309	309
26	08/12-08/13	24	8	23	0	0	2,006	12,090	7	62	4,918	16,390	32	278	278
27	08/15-08/16	24	5	8	0	0	1,161	7,127	31	243	4,412	13,932	25	201	201
28	08/19-08/22	72	4	15	0	0	1,206	7,289	52	431	5,269	17,115	15	117	117
29	08/23-08/25	60	2	14	0	0	1,335	8,378	53	466	2,153	6,899	10	78	78
30	08/26-09/01	156	2	8	0	0	809	5,176	83	607	1,706	5,084	3	24	24
31	09/02-09/08	156	2	3	0	0	499	2,991	66	656	0	0	0	0	0
32			28	1,247	30	575	241,660	1,492,173	525	4,309	64,421	216,969	22,987	184,254	184,254
Average Weight						19.17		6.17		8.21		3.37		8.02	8.02
Combined Total				4,814	458	6,523	830,859	5,291,203	4,057	32,767	186,786	629,725	127,271	1,010,521	1,010,521
Average Weight						14.24		6.37		8.08		3.37		7.94	7.94

<sup>a</sup> For area and opening times refer to Appendix C.9.

Appendix C.2. Summary of periods, dates, duration, and emergency orders issued for the commercial common property fisheries in the Eshamy District, 2002.

Main Bay Subdistrict (225-21)			Crafton Island Subdistrict (225-10, 20, 30)			Emergency Orders Issued
Period	Dates	Duration	Periods	Dates	Duration	
01	05/16-05/19	72	01	05/16-05/19	72	2-F-E-001-02 <sup>a</sup>
02	05/20-05/22	48	02	05/20-05/22	48	2-F-E-004-02 <sup>b</sup>
03	05/23-05/25	48	03	05/23-05/25	48	2-F-E-007-02 <sup>a</sup>
04	05/27-05/29	48				2-F-E-009-02 <sup>c</sup>
05	05/30-06/01	48				2-F-E-010-02 <sup>d</sup>
06	06/03-06/05	48				2-F-E-011-02 <sup>c</sup>
07	06/06-06/08	48				2-F-E-015-02 <sup>d</sup>
08	06/10-06/12	48				2-F-E-018-02 <sup>c</sup>
09	06/13-06/14	24				2-F-E-019-02 <sup>d</sup>
10	06/17-06/19	48				2-F-E-021-02 <sup>c</sup>
11	06/20-06/21	24				2-F-E-025-02 <sup>c</sup>
12	06/24-06/25	24				2-F-E-027-02 <sup>c</sup>
13	07/01-07/02	24				2-F-E-030-02 <sup>f</sup>
14	07/04-07/05	24	14	07/04-07/05	24	2-F-E-035-02 <sup>g</sup>
15	07/06-07/07	24	15	07/06-07/07	24	2-F-E-035-02 <sup>g</sup>
16	07/08-07/09	24	16	07/08-07/09	24	2-F-E-035-02 <sup>g</sup>
17	07/10-07/11	24	17	07/10-07/11	24	2-F-E-041-02 <sup>g</sup>
18	07/12-07/13	24	18	07/12-07/13	24	2-F-E-041-02 <sup>g</sup>
19	07/14-07/16	48	19	07/14-07/16	48	2-F-E-043-02 <sup>g</sup>
20	07/18-07/20	36	20	07/18-07/20	36	2-F-E-046-02 <sup>g</sup>
21	07/22-07/23	36	21	07/22-07/23	36	2-F-E-053-02 <sup>g</sup>
22	07/25-07/27	36	22	07/25-07/27	36	2-F-E-054-02 <sup>a</sup>
23	07/29-07/30	36	23	07/29-07/30	36	2-F-E-057-02 <sup>b</sup>
24	08/01-08/03	36	24	08/01-08/03	36	2-F-E-058-02 <sup>h</sup>
25	08/05-08/06	36	25	08/05-08/06	36	2-F-E-061-02 <sup>i</sup>
26	08/08-08/09	24	26	08/08-08/09	24	2-F-E-069-02 <sup>j</sup>
27	08/12-08/13	24	27	08/12-08/13	24	2-F-E-070-02 <sup>k</sup>
28	08/15-08/16	24	28	08/15-08/16	24	2-F-E-071-02 <sup>l</sup>
29	08/19-08/22	72	29	08/19-08/22	72	2-F-E-073-02 <sup>m</sup>
30	08/23-08/25	60	30	08/23-08/25	60	2-F-E-079-02 <sup>n</sup>
31	08/26-09/01	156	31	08/26-09/01	156	2-F-E-079-02 <sup>o</sup>
32	09/02-09/08	156	32	09/02-09/08	156	2-F-E-087-02 <sup>p</sup>
33	09/09-09/15	156	33	09/09-09/15	156	2-F-E-088-02 <sup>q</sup>

<sup>a</sup> All waters of the Eshamy District were open. The alternating gear zone (AGZ) was open to drift gillnet gear.

<sup>b</sup> All waters of the Eshamy District were open. The AGZ was open to set gillnet gear.

<sup>c</sup> Only the Main Bay Subdistrict was open. The AGZ was open to set gillnet gear.

<sup>d</sup> Only the Main Bay Subdistrict was open. The AGZ was open to drift gillnet gear.

-continued-

## Appendix C.2. (page 2 of 2)

---

- <sup>e</sup> Waters of the Main Bay Subdistrict, excluding the Special Harvest Area (SHA), were open.
- <sup>f</sup> Waters of the Main Bay Subdistrict, excluding the Special Harvest Area (SHA), were open.  
Deep gillnet gear was allowed in the Eshamy District beginning July 1.
- <sup>g</sup> Within the Eshamy District, only the waters of the AGZ were closed.
- <sup>n</sup> All waters of the Eshamy District were open. The alternating gear zone (AGZ) was open to drift gillnet gear.  
Gillnet mesh size of no less than 5 3/8 was required outside of the Main Bay Subdistrict.
- <sup>l</sup> All waters of the Eshamy District were open. The alternating gear zone (AGZ) was open to set gillnet gear.  
Gillnet mesh size of no less than 5 3/8 was required outside of the Main Bay Subdistrict.
- <sup>j</sup> Waters of the Main Bay Subdistrict, including the AGZ, were open. AGZ was open to drift gillnet gear.  
Waters of Eshamy Bay east of 148° 00' 30" W. longitude and west of 147° 58' W. longitude were also open.
- <sup>k</sup> Waters of the Main Bay Subdistrict, including the AGZ, were open. AGZ was open to set gillnet gear.  
Waters of Eshamy Bay east of 148° 00' 30" W. longitude and west of 147° 58' W. longitude were also open.
- <sup>l</sup> Waters of the Main Bay Subdistrict, including the AGZ, were open. AGZ was open to drift gillnet gear.  
Waters of Eshamy Bay east of 148° 00' 30" W. longitude and west of 147° 58' W. longitude were also open. Gillnet mesh size of 5 3/8 inches or greater was required in Eshamy Bay.
- <sup>m</sup> Waters of the Main Bay Subdistrict, including the AGZ, were open. AGZ was open to set gillnet gear.  
Waters of Eshamy Bay east of 148° 00' 30" W. longitude and west of 147° 58' W. longitude were also open. Gillnet mesh size of 5 3/8 inches or greater was required in Eshamy Bay.
- <sup>n</sup> Waters of the Main Bay Subdistrict, including the AGZ, were open. AGZ was open to drift gillnet gear.  
Waters of Eshamy Bay east of 148° 07' 30" W. longitude and west of 147° 58' 30" W. longitude were also open. Gillnet mesh size of 5 3/8 inches or greater was required in Eshamy Bay.
- <sup>o</sup> Waters of the Main Bay Subdistrict, including the AGZ, were open. AGZ was open to set gillnet gear.  
Waters of Eshamy Bay east of 148° 07' 30" W. longitude and west of 147° 58' 30" W. longitude were also open. Gillnet mesh size of 5 3/8 inches or greater was required in Eshamy Bay.
- <sup>p</sup> Waters of the Main Bay Subdistrict, including the AGZ, were open. AGZ was open to drift gillnet gear.  
Waters of Eshamy Bay west of 147° 58' 30" W. longitude and east of sport fish regulatory markers in front of Eshamy Lagoon were also open. Gillnet mesh size of 5 3/8 inches or greater was required in Eshamy Bay.
- <sup>q</sup> Waters of the Main Bay Subdistrict, including the AGZ, were open. AGZ was open to drift gillnet gear.  
Waters of Eshamy Bay west of 147° 58' 30" W. longitude and east of sport fish regulatory markers in front of Eshamy Lagoon were also open. Gillnet mesh size of 5 3/8 inches or greater was required in Eshamy Bay.

Appendix C.3. Estimated age and sex composition of sockeye salmon harvested in the Eshamy District commercial common property gillnet fishery, 2002.

	Brood Year and Age Class <sup>b</sup>						Total	
	1999		1998		1997			1996
	1.1	1.2	1.2	1.3	2.2	2.3		
<b>Strata Combined:</b>	06/13 - 09/08							
Sampling dates:	06/26 - 08/07							
Sample size:	1,461							
Female	0.0	41.6	7.0	0.4	0.0	1.1	50.1	
Percentage of sample								
Number in harvest <sup>a</sup>	0	242,416	40,756	2,165	0	6,293	291,631	
Male	0.0	38.8	9.8	0.6	0.0	0.6	49.9	
Percentage of sample								
Number in harvest <sup>a</sup>	263	226,259	56,917	3,352	171	3,759	290,721	
Total	0.0	80.5	16.8	0.9	0.0	1.7	100.0	
Percentage of sample								
Number in harvest <sup>a</sup>	263	468,938	97,673	5,517	171	10,052	582,615	
Standard error	263	5,717	5,631	1,281	171	1,345		

<sup>a</sup> Number in harvest does not reflect total Eshamy district sockeye salmon harvest due to the return of Eyak lake stock to Main Bay Hatchery prior to June 12, 2002.

<sup>b</sup> Generated using Length Frequency data ONLY.

Appendix C.4. Estimated age and sex composition of the sockeye salmon escapement past the Eshamy River weir, 2002.

	Brood Year and Age Class							Total
	1999	1998	1997		1996			
	1.1	1.2	1.3	2.2	1.4	2.3		
<b>Strata Combined:</b>	07/02	-	08/21					
Sampling dates:	07/16	-	08/11					
Sample size:	1,421							
Female	0.0	38.4	8.3	1.6	0.0	0.3	48.7	
Percentage of sample			3,364	637	0	139	19,694	
Number in escapement	0	15,554						
Male	0.6	43.4	4.7	2.4	0.1	0.1	51.3	
Percentage of sample			1,920	985	33	33	20,784	
Number in escapement	225	17,588						
Total	0.6	81.9	13.1	4.0	0.1	0.4	100.0	
Percentage of sample			5,284	1,622	33	172	40,478	
Number in escapement	225	33,142						
Standard error	100	460	415	205	24	52		

Appendix C.5. Daily salmon escapement through the Eshamy River weir, 2002.

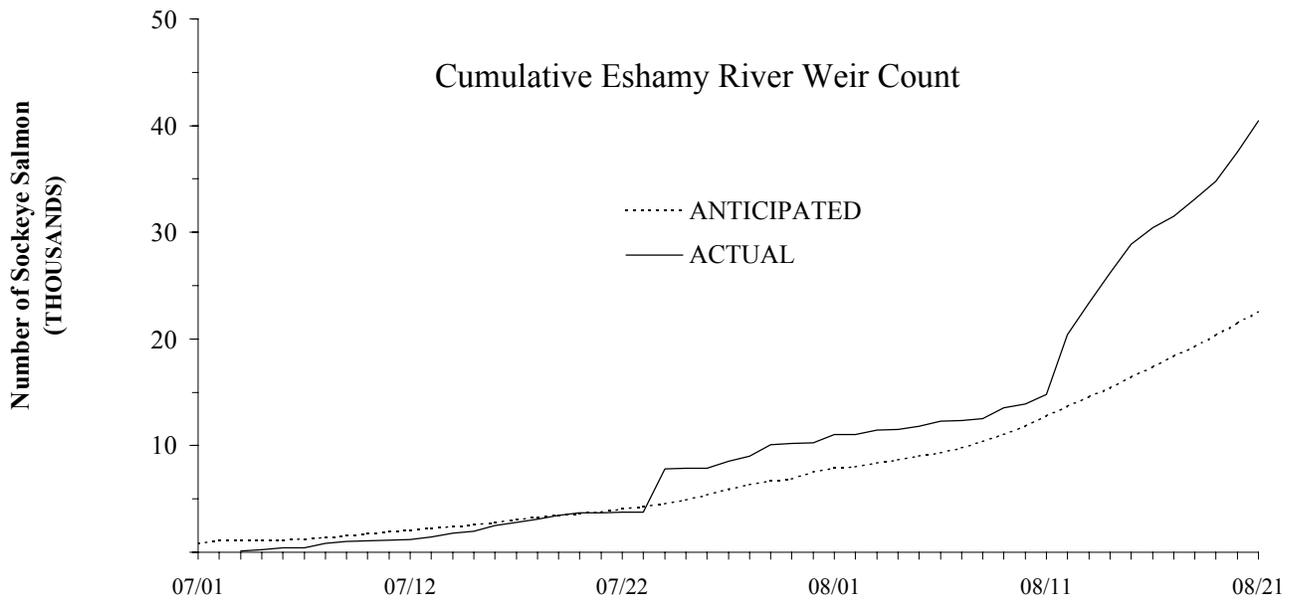
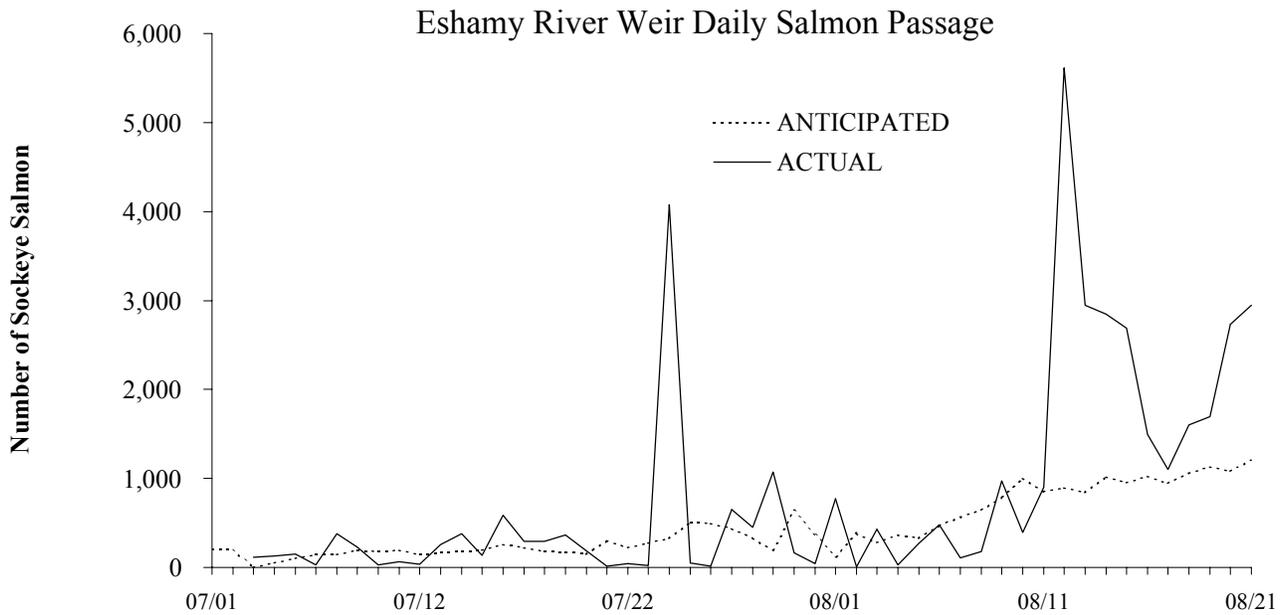
Date	Sockeye		Pink <sup>a</sup>		Chum		Coho		Chinook	
	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.
07/03	7	7	0	0	27	27	0	0	0	0
07/04	116	123	0	0	158	185	0	0	0	0
07/05	130	253	0	0	58	243	0	0	0	0
07/06	153	406	0	0	45	288	0	0	0	0
07/07	28	434	0	0	9	297	0	0	0	0
07/08	380	814	0	0	102	399	0	0	0	0
07/09	227	1,041	0	0	21	420	0	0	0	0
07/10	32	1,073	0	0	0	420	0	0	0	0
07/11	65	1,138	0	0	24	444	0	0	0	0
07/12	36	1,174	0	0	13	457	0	0	0	0
07/13	257	1,431	1	1	47	504	0	0	0	0
07/14	380	1,811	2	3	69	573	0	0	0	0
07/15	134	1,945	0	3	12	585	0	0	0	0
07/16	587	2,532	3	6	21	606	0	0	0	0
07/17	296	2,828	0	6	19	625	0	0	0	0
07/18	292	3,120	2	8	10	635	0	0	0	0
07/19	367	3,487	1	9	42	677	0	0	0	0
07/20	189	3,676	2	11	10	687	0	0	0	0
07/21	16	3,692	2	13	5	692	0	0	0	0
07/22	40	3,732	1	14	11	703	0	0	0	0
07/23	21	3,753	2	16	34	737	0	0	0	0
07/24	4,076	7,829	96	112	138	875	0	0	0	0
07/25	53	7,882	6	118	7	882	0	0	0	0
07/26	15	7,897	3	121	15	897	0	0	0	0

-continued-

Appendix C.5. (Page 2 of 2)

Date	Sockeye		Pink <sup>a</sup>		Chum		Coho		Chinook	
	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.
07/27	649	8,546	4	125	12	909	0	0	0	0
07/28	448	8,994	3	128	3	912	0	0	0	0
07/29	1,071	10,065	15	143	5	917	0	0	0	0
07/30	165	10,230	7	150	1	918	0	0	0	0
07/31	45	10,275	3	153	3	921	0	0	0	0
08/01	771	11,046	14	167	31	952	0	0	0	0
08/02	8	11,054	1	168	5	957	0	0	0	0
08/03	431	11,485	4	172	8	965	0	0	0	0
08/04	27	11,512	4	176	1	966	0	0	0	0
08/05	274	11,786	15	191	10	976	0	0	0	0
08/06	479	12,265	24	215	16	992	0	0	0	0
08/07	106	12,371	29	244	4	996	0	0	0	0
08/08	178	12,549	32	276	6	1,002	0	0	0	0
08/09	970	13,519	71	347	10	1,012	0	0	0	0
08/10	393	13,912	31	378	11	1,023	0	0	0	0
08/11	900	14,812	11	389	12	1,035	0	0	0	0
08/12	5,613	20,425	289	678	13	1,048	0	0	0	0
08/13	2,945	23,370	177	855	6	1,054	0	0	0	0
08/14	2,849	26,219	133	988	3	1,057	0	0	0	0
08/15	2,686	28,905	360	1,348	3	1,060	0	0	0	0
08/16	1,496	30,401	300	1,648	0	1,060	1	1	0	0
08/17	1,101	31,502	368	2,016	0	1,060	0	1	0	0
08/18	1,600	33,102	598	2,614	3	1,063	3	4	0	0
08/19	1,693	34,795	510	3,124	4	1,067	1	5	0	0
08/20	2,735	37,530	753	3,877	2	1,069	3	8	0	0
08/21	2,948	40,478	966	4,843	3	1,072	6	14	0	0
Totals	40,478		4,843		1,072		14		0	

<sup>a</sup> The weir is designed to prohibit passage of sockeye salmon, but smaller pink salmon may pass through the Eshamy River weir uncouncted.



Appendix C.6. Anticipated daily and cumulative sockeye salmon escapement versus actual escapement past the Eshamy River weir, 2002.

Appendix C.7. Total commercial common property salmon harvest by species in the Eshamy District, 1987 - 2002.

Year	Chinook	Sockeye	Coho	Pink	Chum	Total
<b>DRIFT GILLNET</b>						
1987	2	642	3	3,225	7,060	10,932
1988	94	50,868	794	348,873	206,060	606,689
1989 <sup>a</sup>						
1990	110	12,967	574	165,362	264,772	443,785
1991	107	296,234	468	44,516	202,183	543,508
1992	158	373,596	1,017	153,018	50,974	578,763
1993	8	80,807	673	45,974	27,045	154,507
1994	2	61,848	623	254,535	9,497	326,505
1995	21	29,851	1,468	60,712	13,284	105,336
1996	19	179,064	1,056	19,043	23,552	222,734
1997	17	475,498	426	146,324	34,768	657,033
1998	2	98,002	252	101,068	343	199,667
1999	30	86,032	2,036	127,082	13,120	228,300
2000	634	235,085	5,396	375,250	27,511	643,876
2001	47	499,972	10,423	367,588	21,316	899,346
2002	428	589,199	3,532	122,365	104,284	819,808
10-Year Average (1992-01)	94	211,976	2,337	165,059	22,141	401,607
<b>SET GILLNET</b>						
1987	31	5,387	336	86,677	45,099	137,530
1988	100	18,321	283	180,456	93,577	292,737
1989 <sup>a</sup>						
1990	56	10,204	532	369,589	94,494	474,875
1991	76	184,028	504	20,075	49,394	254,077
1992	101	144,568	1,242	390,097	4,695	540,703
1993	55	101,717	832	84,568	20,369	207,541
1994	9	97,664	628	311,134	6,908	416,343
1995	19	30,814	695	28,118	6,621	66,267
1996	13	132,268	309	16,648	9,276	158,514
1997	12	196,005	163	76,610	8,475	281,265
1998	1	25,533	91	33,916	214	59,755
1999	131	74,378	1,092	43,443	11,101	130,145
2000	41	101,105	662	139,008	12,319	253,135
2001	25	176,060	1,006	127,737	7,057	311,885
2002	30	241,660	525	64,421	22,987	329,623
10-Year Average (1992-01)	41	108,011	672	125,128	8,704	242,555
<b>COMBINED GEAR</b>						
1987	33	6,029	339	89,902	52,159	148,462
1988	194	69,189	1,077	529,329	299,637	899,426
1989 <sup>a</sup>						
1990	166	23,171	1,106	534,951	359,266	918,660
1991	183	480,262	972	64,591	251,577	797,585
1992	259	518,164	2,259	543,115	55,669	1,119,466
1993	63	182,524	1,505	130,542	47,414	362,048
1994	11	159,512	1,251	565,669	16,405	742,848
1995	40	60,665	2,163	88,830	19,905	171,603
1996	32	311,332	1,365	35,691	32,828	381,248
1997	29	671,503	589	222,934	43,243	938,298
1998	3	123,535	343	134,984	557	259,422
1999	161	160,410	3,128	170,525	24,221	358,445
2000	675	336,190	6,058	514,258	39,830	897,011
2001	72	676,032	11,429	495,325	28,373	1,211,231
2002	458	830,859	4,057	186,786	127,271	1,149,431
10-Year Average (1992-01)	135	319,987	3,009	290,187	30,845	644,162

<sup>a</sup>Fishing was closed due to oil contamination on the beaches.

Appendix C.8. Salmon escapement by species past the Eshamy River weir, 1967-2002<sup>a</sup>.

Year	Chinook	Sockeye	Coho	Pink	Chum	Total
1967	0	10,821	192	10,433	1	21,447
1968	1	68,048	450	919	1	69,419
1969	0	61,196	96	3,095	2	64,389
1970	0	11,460	25	387	0	11,872
1971 <sup>b</sup>	0	954	97	3,179	0	4,230
1972 <sup>c</sup>		28,683				28,683
1973	0	10,202	205	1,698	0	12,105
1974 <sup>c</sup>		633				633
1975 <sup>c</sup>		1,724				1,724
1976 <sup>c</sup>		19,367				19,367
1977	0	11,746	230	32,080	0	44,056
1978	0	12,580	20	552	0	13,152
1979	0	12,169	5	3,654	1	15,829
1980	5	44,263	128	963	2	45,361
1981	1	23,048	249	5,956	13	29,267
1982	0	6,782	79	1,056	79	7,996
1983	0	10,348	40	7,047	4	17,439
1984	2	36,121	881	3,970	0	40,974
1985	0	26,178	96	6,271	0	32,545
1986	2	6,949	55	1,004	31	8,041
1987 <sup>d</sup>						
1988	2	31,747	48	1,205	1	33,003
1989	1	57,232	0	7,782	210	65,225
1990	0	14,477	43	2,209	5	16,734
1991	2	46,229	907	31,241	17	78,396
1992	1	36,237	52	3,004	5	39,299
1993	1	42,893	92	3,435	9	46,430
1994	1	64,660	1,184	12,061	87	77,993
1995	7	21,701	1,076	18,601	407	41,792
1996	2	5,271	108	7,959	9	13,349
1997	2	39,015	111	15,142	18	54,288
1998 <sup>d</sup>						
1999	1	27,057	194	32,756	3	60,011
2000	2	22,653	151	20,515	381	43,702
2001	0	55,187	335	21,027	176	76,725
2002	0	40,478	14	4,843	1,072	46,407
10-Year Average (1992-2001)	2	34,964	367	14,944	122	50,399

<sup>a</sup> For break down of jacks versus adult sockeye salmon see specific year's daily escapement enumeration table.

<sup>b</sup> Escapement estimate may be low due to holes in weir. Actual escapement is estimated to be more than 3,000 sockeye salmon.

<sup>c</sup> Passage of salmon other than sockeye salmon was not recorded.

<sup>d</sup> The Eshamy River weir was not in operation.

**APPENDIX D: PRINCE WILLIAM SOUND PURSE SEINE DISTRICTS**

Appendix D.1. Prince William Sound commercial common property purse seine harvest by day, 2002.

Date	Chinook			Sookeye			Coho			Pink			Chum		
	Permits	Landings	Numbers	Pounds	Numbers	Pounds	Numbers	Pounds	Numbers	Pounds	Numbers	Pounds	Numbers	Pounds	Numbers
06/01	6	6	4	93	1	6	0	0	0	0	0	0	0	1,353	11,336
06/04	4	4	0	0	0	0	0	0	0	0	0	0	0	2,605	23,654
06/05	2	2	0	0	0	0	0	0	0	0	0	0	0	4,262	34,329
06/06	11	17	76	1,159	0	0	0	0	0	0	0	0	0	42,817	360,915
06/07	8	9	7	120	0	0	0	0	0	0	0	0	0	15,644	133,422
06/08	1	1	0	0	0	0	0	0	0	0	0	0	0	155	1,240
06/09	6	6	9	228	0	0	0	0	0	0	0	0	0	8,942	80,160
06/10	26	59	8	154	26	102	0	0	0	0	0	0	0	116,319	1,038,595
06/11	16	17	1	28	3	10	0	0	0	0	0	0	0	47,624	413,336
06/12	4	4	4	129	0	0	0	0	0	0	0	0	0	8,258	70,204
06/13	24	34	2	34	3	17	1	6	7	33	0	0	0	67,323	511,663
06/14	14	16	0	0	0	0	0	0	0	0	0	0	0	26,262	218,181
06/15	18	20	7	125	0	0	0	0	0	0	0	0	0	38,423	317,293
06/16	15	15	1	4	2	13	1	4	25	82	0	0	0	31,054	258,039
06/17	40	55	30	264	4	27	0	0	0	0	0	0	0	98,298	827,033
06/18	37	55	2	34	840	5,271	33	302	35,262	117,075	0	0	0	49,974	418,847
06/19	13	13	4	50	57	381	0	0	0	0	0	0	0	17,522	142,769
06/20	19	19	23	305	162	1,045	0	0	0	103	0	0	0	14,743	120,433
06/21	25	26	5	88	211	962	0	0	318	2,551	0	0	0	15,546	134,919
06/22	14	17	2	8	841	4,411	0	0	0	0	0	0	0	17,964	153,670
06/23	16	16	7	122	1	3	0	0	0	0	0	0	0	21,637	185,146
06/24	29	44	1	14	20	126	1	8	16	41	0	0	0	61,595	520,585
06/25	15	20	3	67	460	2,808	0	0	20	44	0	0	0	23,819	198,254
06/26	25	27	0	0	122	772	0	0	0	0	0	0	0	52,964	430,537
06/27	36	45	2	40	984	5,514	2	29	1,411	4,409	0	0	0	87,639	719,839
06/28	24	36	10	122	31	180	0	0	0	0	0	0	0	63,542	529,024
06/29	26	27	1	9	110	698	0	0	0	0	0	0	0	35,744	294,331
06/30	7	7	0	0	0	0	0	0	0	0	0	0	0	5,462	47,273
07/01	19	20	1	17	32	131	0	0	1,278	3,886	0	0	0	15,261	123,720
07/02	12	15	12	236	2,476	11,001	13	39	5,630	17,179	0	0	0	15,588	126,919
07/03	7	7	6	116	15	92	6	51	1,582	4,748	0	0	0	7,106	60,416
07/04	15	15	5	94	1,666	7,743	43	304	8,869	30,088	0	0	0	13,108	102,859
07/05	12	14	4	61	2,920	17,430	39	330	9,984	30,803	0	0	0	8,544	72,222
07/06	1	1	0	0	0	0	0	0	0	0	0	0	0	1,670	13,523
07/07	10	11	0	0	1,926	9,376	16	108	1,629	5,272	0	0	0	14,710	112,775
07/08	63	100	0	0	0	0	0	0	0	0	0	0	0	360,617	2,906,745
07/09	4	5	0	0	29	201	0	0	195	660	0	0	0	20,355	163,424
07/10	26	28	1	11	1	7	1	10	0	0	0	0	0	80,763	634,125

-continued-

Appendix D.1. (page 2 of 2)

Date	Permits	Chinook			Sockeye			Coho			Pink			Chum		
		Landings	Numbers	Pounds	Numbers	Pounds	Numbers	Pounds	Numbers	Pounds	Numbers	Pounds	Numbers	Pounds	Numbers	Pounds
07/11	33	34	3	36	13	65	0	0	0	31	133	91,359	737,621			
07/12	14	14	0	0	2	13	0	0	0	0	0	22,333	175,018			
07/13	35	65	0	0	99	698	30	256	417	1,252	136,611	1,067,884				
07/14	16	25	0	0	68	429	0	0	48	155	41,784	334,319				
07/15	20	30	0	0	13	67	0	0	0	0	69,085	546,225				
07/16	8	8	0	0	8	54	0	0	29	100	8,840	70,713				
07/18	73	77	6	76	1,380	8,407	121	1,027	247,287	884,690	50,140	416,445				
07/19	19	22	0	0	1,448	8,036	4	36	2,777	8,888	21,220	166,752				
07/22	2	2	3	26	1,141	4,850	16	118	133	379	123	1,096				
07/23	4	6	0	0	0	0	0	0	1,859	5,576	6,904	58,185				
07/24	1	1	0	0	0	0	0	0	326	1,074	659	5,179				
07/26	52	52	0	0	15	113	57	425	59,569	198,722	952	7,660				
07/27	1	1	0	0	153	917	0	0	83	290	6	48				
07/29	44	47	0	0	49	298	98	751	58,848	193,045	2,627	21,084				
08/14	102	119	3	52	147	966	139	1,197	884,790	3,045,126	112	966				
08/16	102	169	1	15	54	348	41	332	1,627,414	5,744,563	71	579				
08/18	94	121	1	13	247	1,594	508	4,034	977,482	3,448,341	222	1,831				
08/20	99	116	4	38	584	3,701	1,551	13,327	920,385	3,253,149	140	1,127				
08/22	98	104	0	0	290	1,819	1,686	12,931	529,851	1,895,631	31	269				
08/24	90	98	0	0	112	732	508	4,125	578,221	2,020,819	65	498				
08/26	72	103	0	0	19	141	376	3,320	765,948	2,684,587	7	59				
08/27	59	67	0	0	9	55	737	6,637	309,919	1,073,347	4	31				
08/28	41	44	0	0	14	81	196	1,719	203,503	710,571	0	0				
08/29	24	28	0	0	0	0	0	0	193,737	657,875	0	0				
08/30	23	25	0	0	17	105	439	3,596	112,144	366,939	3	22				
08/31	8	8	0	0	0	0	0	0	71,396	214,059	0	0				
09/02	5	14	0	0	8	47	600	5,139	94,822	310,381	0	0				
09/03	26	29	0	0	0	0	4,055	34,282	76,141	230,770	651	5,268				
09/04	4	5	0	0	0	0	174	1,331	63,404	194,779	0	0				
09/05	31	31	1	14	4	27	19,784	164,296	47,019	142,120	3,185	25,018				
09/06	1	1	0	0	0	0	0	0	24,693	74,080	0	0				
09/07	10	10	0	0	0	0	1,454	12,670	47,718	143,153	113	1,181				
Total	120	2,309	260	4,002	18,837	101,890	32,730	272,740	7,966,259	27,721,568	1,972,459	16,156,833				
Average Weight				15.39		5.41		8.33		3.48		8.19				

Appendix D.2. Total commercial salmon harvest by species, all gear and districts combined, 1971 - 2002.

Year <sup>a</sup>	Chinook	Sockeye	Coho	Pink	Chum	Total
1971	3,551	88,368	30,551	7,310,964	574,265	8,007,699
1972 <sup>b</sup>	547	197,526	1,634	54,783	45,370	299,860
1973	2,405	124,802	1,399	2,056,878	729,839	2,915,323
1974 <sup>b</sup>	1,590	129,366	801	448,773	88,544	669,074
1975	2,519	189,613	6,142	4,452,805	100,479	4,751,558
1976	1,044	112,809	6,171	3,018,991	370,478	3,509,493
1977	648	310,358	843	4,513,082	572,610	5,397,541
1978	1,042	222,083	1,495	2,913,721	485,147	3,623,488
1979	2,015	150,040	6,843	15,607,620	326,414	16,092,932
1980	189	189,816	2,952	14,157,057	482,016	14,832,030
1981	404	251,222	4,383	20,524,470	1,878,716	22,659,195
1982	255	1,055,099	24,362	20,396,222	1,335,368	22,811,306
1983	1,048	92,111	10,496	14,038,796	1,041,309	15,183,760
1984	489	311,955	12,420	22,086,806	1,201,842	23,613,512
1985	1,104	493,278	19,753	25,056,663	1,280,093	26,850,891
1986	1,330	488,715	12,277	11,407,271	1,683,049	13,592,642
1987	874	540,109	47,751	29,198,507	1,904,494	31,691,735
1988	1,037	183,572	75,709	11,817,323	1,832,114	13,909,755
1989	1,113	140,090	203,574	21,860,582	995,962	23,201,321
1990	447	58,497	234,525	44,163,479	959,838	45,416,786
1991	445	507,815	145,311	37,134,311	331,906	38,119,788
1992	1,475	780,932	202,311	8,635,448	328,568	9,948,734
1993	2,148	418,948	48,310	5,761,436	1,173,341	7,404,183
1994	1,376	334,183	121,518	36,874,188	1,039,095	38,370,360
1995	1,364	230,057	140,314	16,045,396	702,216	17,119,347
1996	700	606,525	172,448	26,036,570	2,077,996	28,894,239
1997	1,186	1,197,776	64,360	25,828,078	2,224,725	29,316,125
1998	2,013	365,591	74,105	28,664,281	1,266,887	30,372,877
1999	1,055	339,037	81,841	44,993,247	2,963,838	48,379,018
2000	1,133	548,790	353,013	38,875,724	5,158,397	44,937,057
2001	861	932,070	239,947	35,237,137	3,097,005	39,507,020
1992 - 2001 Average	1,331	575,391	149,817	26,695,151	2,003,207	29,424,896
2002	958	1,013,396	37,586	18,947,254	6,341,864	26,341,058

<sup>a</sup> Includes purse seine, drift gillnet and set gillnet harvests from all PWS fishing districts; Eastern, Northern, Unakwik, Coghill, Northwestern, Eshamy, Southwestern, Montague and Southeastern. Also includes hatchery sales harvests, confiscated fish, donated and discarded fish catch, the surimi study fish, and special use educational permit harvests.

<sup>b</sup> General purse seine season closed.

Appendix D.3. Commercial common property pink salmon harvest for all gear types, by district, 1975-2002.

Year	Eastern	Northern	Coghill	Northwestern	Eshamy	Southwestern	Montague	Southeastern	Total
1975	712,328	171,657	303,597	420,891		1,673,887	118,467	875,456	4,276,283
1976	1,380,943	384,267	217,696	207,190		589,458		82,366	2,861,920
1977	1,673,044	147,964	230,215	208,727		930,469	77,104	824,374	4,091,897
1978	1,516,076	933,013	13,059					216,696	2,678,844
1979	4,500,032	115,886	38,560	59,423		5,111,073	1,347,413	4,160,925	15,333,312
1980	3,140,134	1,271,177	134,876	306,109		7,507,776	950	1,271,389	13,632,411
1981	4,797,583	1,194,621	34,155	46,874		10,371,220	278,879	3,221,268	19,944,600
1982	2,959,601	2,331,903	1,000,524	520,972	3,997	10,801,771	6,444	747,116	18,372,328
1983	2,430,063	1,021,345	273,131	714,522		5,957,068	158,241	1,482,013	12,036,383
1984	4,525,029	2,194,904	996,483	1,412,822	544,082	10,197,349	11,587	1,245,042	21,127,298
1985	6,715,143	1,002,872	523,773	527,132	58,183	10,843,752	1,448,809	2,733,562	23,853,226
1986	2,488,540	944,871	214,593	285,184	43,061	6,374,535		147,268	10,498,052
1987	6,964,549	2,419,611	1,578,568	750,877	89,902	13,341,940	111,011	955,988	26,212,446
1988	481,324	286,743	2,932,072	7,738	529,329	5,411,424		1,776	9,650,406
1989	3,151,096	6,464,090	3,925,487	181,565	<sup>b</sup>	<sup>b</sup>	<sup>b</sup>	73,177	13,795,415
1990	7,970,364	5,482,585	2,692,788	891,444	534,951	17,811,479	10,658	12,325	35,406,594
1991	2,617,222	4,150,612	2,211,575		64,591	17,849,425			26,893,425
1992	489,228	1,142,061	363,887		543,115	3,039,775			5,578,066
1993		413,308	493,747		130,542	2,475,798			3,513,395
1994	11,554,320	7,171,038	3,597,094		565,669	3,408,093			26,296,214
1995	4,235,638	3,656,119	1,078,693		88,830	1,707,745	18,239	11,418	10,796,682
1996 <sup>b</sup>	6,059,063	5,039,988	1,543,869		35,691	5,046,919			17,725,530
1997 <sup>c</sup>	4,534,365	3,162,822	2,030,586		222,934	5,929,544	65,107	28,040	15,973,398
1998 <sup>c</sup>	2,231,061	5,035,736	3,228,761		134,984	8,425,853	430,525	350,081	19,837,001
1999	12,305,629	4,981,085	3,542,130		170,525	9,511,998	189,641	914,907	31,615,915
2000	9,819,466	4,093,620	3,359,542	17,223	514,258	9,308,399	87,634	549,763	27,749,905
2001	16,050,235	404,899	957,042		495,325	3,072,848	807,010	534,538	22,321,897
1992-2001 Average	7,475,445	3,510,068	2,019,535	17,223	290,187	5,192,697	266,359	398,125	18,140,800
2002	355,964	594,245	1,277,637		186,786	5,710,938	32,857	1,075	8,159,502

<sup>a</sup> Includes purse seine, drift gillnet, and set gillnet catches from all Prince William Sound districts; Unakwik catches are included in the Northern District. Does not include hatchery cost recovery, confiscated, and test fish harvests.

<sup>b</sup> These districts were closed due to the Exxon Valdez oil spill.

<sup>c</sup> Eastern and Northern District totals exclude discarded salmon.

<sup>d</sup> Montague District totals include discarded salmon.

Appendix D.4. Aerial escapement indices for pink and chum salmon by district, 2002.

PINK SALMON (EVEN CYCLE)							
District	Escapement Mid point	Even Cycle Escapement Range		1976-2000 Mean Index	Observed Escapement Index <sup>a</sup>	Deviation From Mid-point	
Eastern	474,000	427,000	-	521,000	441,384	226,068	-52.3%
Northern	213,000	192,000	-	235,000	173,788	138,204	-35.1%
Coghill	143,000	129,000	-	158,000	115,692	54,882	-61.6%
Northwestern <sup>b</sup>	135,000	122,000	-	149,000	107,319	50,981	-62.2%
Eshamy <sup>b</sup>	8,200	7,000	-	9,000	2,238	1,397	-83.0%
Southwestern	144,000	130,000	-	159,000	125,326	35,554	-75.3%
Montague	70,000	63,000	-	77,000	78,871	71,461	2.1%
Southeastern	239,000	215,000	-	263,000	227,924	364,630	52.6%
Total	1,426,200				1,272,542	943,177	-33.9%

CHUM SALMON							
District	Escapement Mid point	Even Cycle Escapement Range		1976-2001 Mean Index	Observed Escapement Index <sup>a</sup>	Deviation From Mid-point	
Eastern	98,100	87,200	-	109,000	111,197	94,046	-4.1%
Northern	33,075	29,400	-	36,750	44,256	30,531	-7.7%
Coghill	33,325	29,600	-	37,050	23,365	7,430	-77.7%
Northwestern <sup>b</sup>	21,350	19,000	-	23,700	15,805	16,194	-24.1%
Eshamy <sup>b</sup>	0	0	-	0	64	60	
Southwestern	3,825	3,400	-	4,250	2,673	3,985	4.2%
Montague	12,825	11,400	-	14,250	4,869	565	-95.6%
Southeastern	22,500	20,000	-	25,000	24,111	104,906	366.2%
Total	225,000				226,340	257,717	14.5%

<sup>a</sup> Based on weekly aerial survey counts of 209 index spawning streams in Prince William Sound. This does not represent the total spawning escapement but rather a comparable annual index.

<sup>b</sup> Aerial Surveys were not flown in these districts for twenty-six days from mid-August through early September due to inclement weather. As a result, observed escapement indexes for these districts may be low.

Appendix D.5. Pink salmon escapement indices by district, 1971 - 2002<sup>a</sup>

PINK SALMON ESCAPEMENTS <sup>b</sup>									
Year	Eastern	Northern/ Unakwik	Coghill	Northwestern	Eshamy	Southwestern	Montague	Southeastern	Total
1971	352,800	126,210	62,160	14,320	1,710	79,140	296,730	179,480	1,112,550
1972	344,470	83,900	30,960	39,020	1,100	29,530	33,140	79,060	641,180
1973	309,040	69,660	493,780	2,910	0	52,320	119,520	177,780	1,225,010
1974	256,880	206,750	56,940	163,930	6,240	160,980	11,750	94,650	958,120
1975	412,560	38,260	452,430	4,990	0	77,270	85,380	194,670	1,265,560
1976	472,080	139,600	57,090	68,150	5,840	52,120	13,790	117,590	926,260
1977	390,930	69,980	130,510	80,890	16,450	178,670	152,960	277,780	1,298,170
1978	279,120	163,010	85,450	132,300	5,430	258,980	56,690	164,030	1,145,010
1979	642,220	200,730	70,980	124,020	0	231,300	219,400	728,630	2,217,280
1980	535,960	189,140	214,930	159,260	13,100	133,470	118,400	307,680	1,671,940
1981	599,340	243,170	106,450	51,210	3,990	93,630	255,420	359,870	1,713,080
1982	573,070	332,560	368,380	174,290	15,080	195,950	132,380	482,860	2,274,570
1983	481,950	168,410	310,330	196,630	12,610	161,290	230,200	601,680	2,163,100
1984	1,209,740	593,310	429,450	452,370	16,860	345,760	191,810	792,560	4,031,860
1985	750,530	214,210	296,970	199,190	1,410	181,270	332,240	645,510	2,621,330
1986	356,380	141,420	101,600	81,490	3,840	74,980	44,680	155,830	960,220
1987	514,570	132,960	147,060	75,390	3,450	112,920	149,260	330,630	1,466,240
1988	362,370	143,850	37,070	73,780	490	126,440	67,990	152,540	964,530
1989	359,730	106,530	45,510	68,540	19,470	176,230	181,760	315,000	1,272,770
1990	443,660	131,580	49,110	115,870	17,870	150,100	113,572	304,090	1,325,852
1991	474,380	165,930	98,580	101,320	18,800	197,095	247,890	533,170	1,837,165
1992	204,383	72,915	23,611	42,308	2,709	66,953	47,156	95,070	555,105
1993	315,209	95,614	41,837	46,011	9,348	98,573	144,784	315,093	1,066,469
1994	615,240	178,151	65,648	141,290	11,799	144,594	60,084	196,378	1,413,184
1995	396,696	84,447	46,029	50,582	10,182	82,490	183,448	336,310	1,190,184
1996	584,236	218,022	104,781	86,709	3,000	63,337	92,966	330,285	1,483,336
1997	345,725	65,260	52,961	53,740	914	112,010	206,943	585,135	1,422,688
1998	377,700	213,288	85,968	97,485	4,644	280,335	161,275	199,410	1,420,105
1999	622,502	214,723	168,816	52,340	6,900	163,347	381,054	853,180	2,462,862
2000	554,984	168,247	223,646	66,078	4,286	131,648	227,881	282,258	1,659,028
2001	436,585	163,573	148,665	102,294	2,963	176,503	314,323	655,480	2,000,386
2002	226,068	138,204	54,882	50,981	1,397	35,554	71,461	364,630	943,177
<b>EVEN CYCLE AVG. (1972-2000)</b>									
Avg.	470,404	196,719	126,292	120,799	7,910	142,795	85,667	237,702	1,388,289
<b>ODD CYCLE AVG. (1971-2001)</b>									
Avg.	425,182	129,393	150,995	78,431	6,450	123,173	188,943	400,465	1,503,034

<sup>a</sup>Historical data revised in 1989.

<sup>b</sup>Coghill and Northwestern escapement figures correspond to current district boundaries.

Appendix D.6. Weekly aerial survey indices of pink salmon escapement by statistical area, 2002.

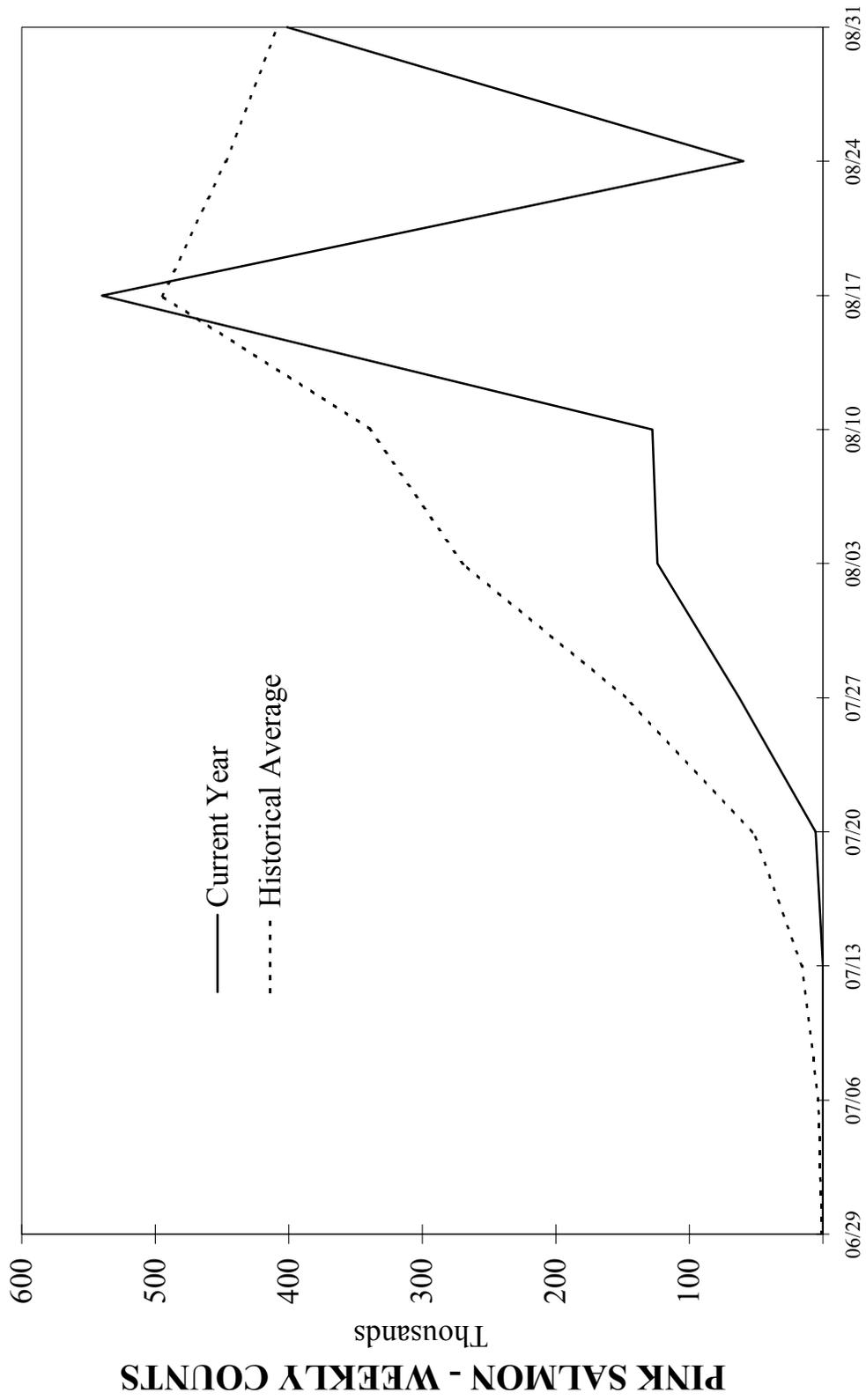
Survey Location	Statistical Area	Week Ending Dates <sup>a</sup>											Adjusted Total <sup>b</sup>
		06/29	07/06	07/13	07/20	07/27	08/03	08/10	08/17	08/24	08/31		
Orca Inlet	221-10	NS	0	20	740	5,000	3,200	3,000	22,700	NS	19,600	41,695	
Simpson & Sheep Bay	221-20	0	0	0	0	1,450	1,350	5,550	9,850	NS	16,400	25,465	
Port Gravina	221-30	0	0	0	0	3,350	8,000	33,400	46,800	NS	29,800	77,819	
Port Fidalgo	221-40	0	0	40	600	11,950	5,100	11,200	9,600	NS	14,450	33,029	
Valdez Arm	221-50	0	20	30	710	5,950	7,850	8,350	15,960	NS	30,550	48,060	
Port Valdez	221-61	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0	
Eastern District Total		0	20	90	2,050	27,700	25,500	61,500	104,910	NS	110,800	226,068	
Columbia & Long Bay	222-10	NS	NS	0	230	NS	3,300	4,800	14,100	NS	27,770	39,153	
Wells Bay & Unakwik Inlet	222-20	NS	NS	0	1,025	NS	9,370	27,650	38,725	NS	38,850	73,954	
Eaglek Bay	222-30	NS	NS	NS	0	NS	2,000	7,600	13,950	NS	12,100	23,997	
Northern District Total		NS	NS	0	1,255	NS	14,670	40,050	66,775	NS	78,720	137,104	
Upper Unakwik Inlet	229-10	NS	NS	NS	0	NS	0	50	1,100	NS	300	1,100	
Unakwik District (229) Total		NS	NS	NS	0	NS	0	50	1,100	NS	300	1,100	
West Side Port Wells	223-10	NS	NS	NS	75	NS	3,000	5,400	14,700	NS	7,900	18,327	
Esther Passage	223-20	NS	NS	NS	0	NS	100	510	1,250	NS	1,250	1,555	
College Fiord	223-30	NS	NS	NS	0	NS	2,000	10,000	35,000	NS	7,500	35,000	
Coghill District Total		NS	NS	NS	75	NS	5,100	15,910	50,950	NS	16,650	54,882	
Passage Canal & Cochrane	224-10	NS	NS	NS	160	NS	5,950	5,650	11,200	NS	4,600	15,146	
Culross Passage	224-30	NS	NS	NS	60	NS	500	1,750	23,200	NS	6,800	24,001	
Port Nellie Juan	224-40	NS	NS	NS	255	NS	6,810	2,550	6,900	NS	3,750	11,834	
Northwestern District Total		NS	NS	NS	475	NS	13,260	9,950	41,300	NS	15,150	50,981	
Crafton/Eshamy	225-30	NS	NS	NS	0	NS	110	250	650	NS	1,150	1,397	
Eshamy District Total		NS	NS	NS	0	NS	110	250	650	NS	1,150	1,397	
Chenega Is. & Dangerous Passage	226-20	NS	NS	NS	NS	8,650	9,660	NS	12,700	10,400	NS	23,871	
East Knight Is.	226-30	NS	NS	NS	NS	1,000	4,000	NS	2,000	2,000	NS	4,594	
Bainbridge & Latouche Passage	226-40	NS	NS	NS	NS	50	300	NS	2,250	2,950	NS	3,960	
Port Bainbridge	226-50	NS	NS	NS	NS	3,000	600	NS	1,100	1,600	NS	3,129	
Southwestern District Total		NS	NS	NS	NS	12,700	14,560	NS	18,050	16,950	NS	35,554	
Montague Strait	227-10	NS	NS	NS	NS	775	3,435	NS	32,700	29,575	NS	49,602	
Green Island	227-20	NS	NS	NS	NS	0	410	NS	17,500	13,250	NS	21,859	
Montague District Total		NS	NS	NS	NS	775	3,845	NS	50,200	42,825	NS	71,461	
Orca Is. & East Hawkins	228-10	NS	NS	0	0	1,200	NS	NS	1,200	NS	400	2,400	
Hawkins Cutoff	228-20	NS	NS	0	0	5,400	19,000	NS	34,900	NS	16,200	51,881	
North Hawkins & Canoe Passage	228-30	NS	NS	0	100	2,770	5,950	NS	26,700	NS	19,700	40,910	
Double Bay	228-40	NS	NS	0	0	1,050	1,300	NS	NS	NS	14,500	20,686	
Johnstone Point	228-50	NS	NS	0	0	1,200	5,200	NS	NS	NS	12,700	21,600	
Port Etches	228-60	NS	NS	50	1,700	9,600	15,600	NS	143,200	NS	115,200	227,153	
Southeastern District Total		NS	NS	50	1,800	21,220	47,050	NS	206,000	NS	178,700	364,630	
TOTAL OF 9 DISTRICTS		0	20	140	5,655	62,395	124,095	127,710	539,935	59,775	401,470	943,177	

-continued-

## D.6. continued (page 2 of 2).

<sup>a</sup>There are a total of 209 streams included in the systematic aerial survey program. The survey program commences in the Eastern District where the earliest escapements in the Sound occur. Weather and conditions: Failure to fly a survey due to run timing or bad survey conditions is denoted by NS (no survey). A notation of NC (no count) occurs when a stream is flown but no count is possible because of survey conditions (ie. of the pink salmon run many streams are flown twice weekly to provide fisheries managers with more timely escapement data. In cases where more than one survey per week was flown the weekly observation shows of the two counts if observing conditions during both were good or, the maximum of the two counts if conditions during the minimum count were poor.

<sup>b</sup>The adjusted total is an escapement estimate based a geometric method used since the inception of the systematic survey program in the early 1960's. In this method, aerial observers are assumed to count without error between observations are used to estimate numbers of fish in the stream on days when no surveys are flown. All daily observations and interpolations are summed across the season. Because fish seen on day  $i+1$  are the sum of all daily observations and interpolations must be divided by some residence time for fish in the streams to account for duplicate observations. The residence time of 17.5 days which has historically been tagging data completed by National Marine Fisheries Service on Olsén Creek in the early 1960's. Since observer bias does occur and since both observer bias and stream life are stream specific, adjusted totals in the interannual comparisons but should not be interpreted as the true escapement.



Appendix D.7. Current year and historical weekly pink salmon escapement performance of index spawning streams, 2002.

Appendix D.8. Total chum salmon harvests and escapement indices, including hatchery sales harvests and broodstock, 1965 - 2002.

Year	CHUM SALMON ESCAPEMENTS <sup>a</sup>													Hatchery			Common Property Harvest <sup>b</sup>	Total Run <sup>c</sup>
														Sales	Brood			
	Eastern	Northern	Coghill	Northwestern	Eshamy	Southwestern	Montague	Southeastern	Total									
1965	69,180	20,980	20,768	18,907	0	1,829	17,500	46,480	195,644					201,043	396,687			
1966	75,690	24,870	10,540	5,770	0	2,180	14,100	9,410	142,560					426,628	569,188			
1967	74,570	23,270	7,450	1,670	0	6,200	4,980	9,070	127,210					274,234	401,444			
1968	48,960	10,620	8,780	800	0	580	220	4,610	74,570					342,939	417,509			
1969	58,690	17,340	8,410	780	0	0	0	6,320	91,540					320,977	412,517			
1970	34,430	4,020	11,880	2,720	0	550	0	7,950	61,550					230,661	292,211			
1971	49,730	11,870	6,600	5,600	100	1,430	27,990	6,450	109,770					574,265	684,035			
1972	112,950	70,760	28,160	22,980	0	4,010	3,340	26,990	269,190					45,370	314,560			
1973	213,170	140,030	72,610	13,250	0	1,020	3,110	48,080	491,270					729,839	1,221,109			
1974	72,010	55,510	29,280	6,580	0	240	80	3,200	166,900					88,544	255,444			
1975	30,040	8,910	3,640	430	0	1,280	140	2,850	47,290					100,479	147,769			
1976	16,260	29,430	25,670	8,300	0	90	0	770	80,520					370,478	450,998			
1977	47,880	48,600	43,940	10,090	0	700	0	8,280	159,490					575,839	735,329			
1978	90,250	27,480	18,160	12,940	0	790	0	6,550	156,170					485,147	641,317			
1979	42,630	17,320	6,330	8,770	0	90	0	5,140	80,280					324,040	404,320			
1980	26,720	27,880	23,340	3,060	0	2,040	70	6,710	89,820	6				412,948	502,774			
1981	71,560	28,670	2,050	15,130	0	710	0	16,010	134,130	118				1,745,869	1,880,117			
1982	146,120	68,580	22,130	21,880	0	1,530	0	25,260	285,500	0				1,335,368	1,707,068			
1983	143,800	85,720	61,410	31,660	340	3,170	0	21,410	347,510	0				1,030,546	1,422,056			
1984	129,190	59,080	19,690	7,920	0	20	0	8,650	224,550	4,886				1,196,785	1,429,221			
1985	111,310	33,410	22,140	13,290	0	620	0	4,470	185,240	3,840				1,302,090	1,491,170			
1986	126,690	50,740	13,140	17,420	0	1,890	0	8,830	218,710	20,683				1,662,366	1,914,282			
1987	183,620	38,700	24,510	26,460	0	1,690	0	44,020	319,000	2,549				1,902,063	2,239,186			
1988	258,560	75,420	39,240	40,780	0	2,350	500	66,930	483,780	42,694				1,792,616	2,427,361			
1989	112,080	46,470	22,680	27,430	320	11,690	0	22,640	243,310	129,551				862,551	1,309,925			
1990	115,100	112,480	26,020	37,020	0	80	1,050	7,275	299,025	24,554				935,284	1,366,147			
1991	86,360	19,080	6,070	8,960	0	2,800	925	9,203	133,398	13,471				318,435	580,118			
1992	48,804	12,903	10,003	11,072	300	2,940	783	3,881	90,686	57,392				271,176	603,194			
1993	54,102	24,975	8,430	18,966	0	1,300	30	19,172	126,975	475,148				706,196	1,448,649			
1994	40,476	23,942	14,176	12,992	100	2,225	0	4,057	97,968	380,365				677,848	1,270,835			
1995	75,655	28,899	11,596	4,883	0	2,250	1,000	23,200	147,483	231,539				486,510	1,038,074			
1996	137,908	55,568	19,669	24,405	0	2,231	5,216	47,334	292,331	1,066,705				1,011,291	2,624,078			
1997	93,146	19,429	3,101	8,387	0	800	4,000	43,274	172,137	811,179				1,413,546	2,575,795			
1998	86,227	28,867	22,764	7,553	0	1,602	10,690	52,103	209,806	519,215				747,672	1,656,568			
1999	242,713	36,691	5,057	4,544	0	2,393	8,725	36,181	336,304	777,180				2,186,658	3,507,215			
2000	196,253	23,655	20,488	10,150	16	11,440	66,202	34,969	363,173	1,729,876				3,428,521	5,607,011			
2001	198,683	75,473	13,388	6,373	700	5,187	10,408	37,526	347,738	936,028				2,153,920	3,608,732			
2002	94,046	30,531	7,430	16,194	60	3,985	565	104,906	257,717	2,580,936				3,760,934	6,809,420			
AVG	100,410	39,952	18,967	13,056	51	2,261	4,780	22,110	201,585	426,431				958,728	1,483,248			

<sup>a</sup>Coghill and Northwestern escapement figures correspond to current district boundaries.

<sup>b</sup>Includes the commercial common property harvest of both wild and hatchery stocks. Does not include hatchery sales harvests.

<sup>c</sup>Represents the sum of the common property catch, hatchery sales and brood(including roe recovery), plus the escapement index. Does not account for wild stock escapement into nonindex streams.

Appendix D.9. Weekly aerial survey indices of chum salmon escapement by statistical area, 2002.

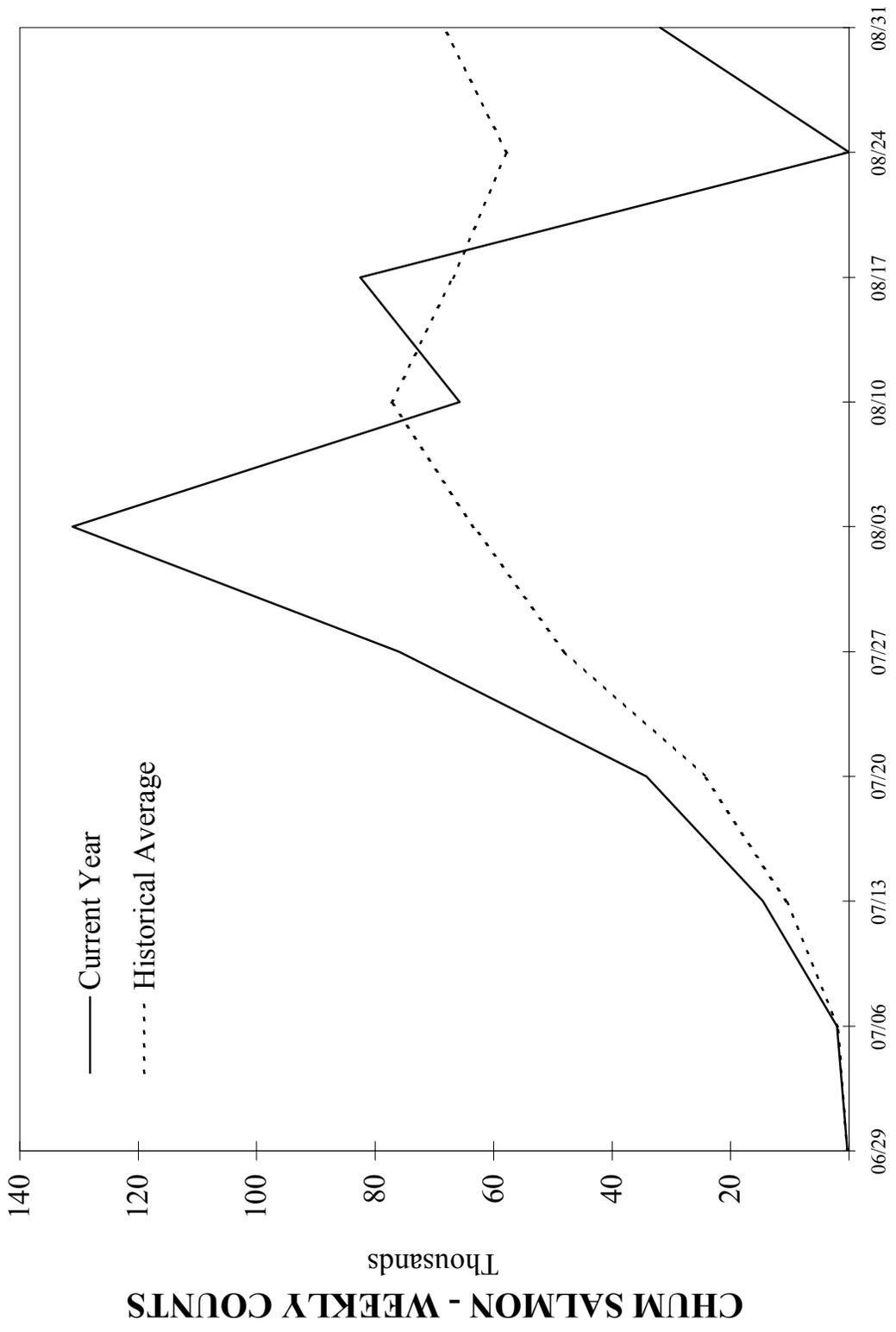
Survey Location	Statistical Area	Week Ending Dates <sup>a</sup>											Adjusted Total <sup>b</sup>	
		06/29	07/06	07/13	07/20	07/27	08/03	08/10	08/17	08/24	08/31	08/31	Total	
Orca Inlet	221-10	NS	0	50	1,200	2,300	7,550	0	4,600	NS	0	0	9,408	
Simpson & Sheep Bay	221-20	0	100	0	1,180	4,150	2,600	3,000	1,600	NS	300	0	6,140	
Port Gravina	221-30	200	1,425	4,900	9,800	20,500	10,960	30,200	13,000	NS	0	0	41,884	
Port Fidalgo	221-40	0	80	585	2,000	6,300	4,000	3,950	3,400	NS	4,100	0	13,587	
Valdez Arm	221-50	75	390	1,901	3,870	11,400	11,100	6,545	5,100	NS	4,600	0	23,027	
Port Valdez	221-61	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0	0	
Eastern District Total		275	1,995	7,436	18,050	44,650	36,210	43,695	27,700	NS	9,000	0	94,046	
Columbia & Long Bay	222-10	NS	NS	935	3,220	NS	4,750	1,500	500	NS	0	0	5,820	
Wells Bay & Unakwik Inlet	222-20	NS	NS	5,090	8,186	NS	6,001	11,150	1,360	NS	1,000	0	18,107	
Eaglek Bay	222-30	NS	NS	NS	150	NS	4,920	400	3,995	NS	0	0	6,604	
Northern District Total		NS	NS	6,025	11,556	NS	15,671	13,050	5,855	NS	1,000	0	30,531	
Upper Unakwik Inlet	229-10	NS	NS	NS	0	NS	0	0	0	NS	0	0	0	
Unakwik District (229) Total		NS	NS	NS	0	NS	0	0	0	NS	0	0	0	
West Side Port Wells	223-10	NS	NS	NS	145	NS	1,150	1,800	2,320	NS	200	0	3,344	
Esther Passage	223-20	NS	NS	NS	0	NS	0	0	0	NS	0	0	0	
College Fiord	223-30	NS	NS	NS	0	NS	3,000	2,000	2,000	NS	0	0	4,086	
Coghill District Total		NS	NS	NS	145	NS	4,150	3,800	4,320	NS	200	0	7,430	
Passage Canal & Cochrane	224-10	NS	NS	NS	275	NS	1,700	4,200	1,140	NS	500	0	4,928	
Cultross Passage	224-30	NS	NS	NS	0	NS	200	0	20	NS	0	0	200	
Port Nellie Juan	224-40	NS	NS	NS	1,005	NS	9,050	950	6,870	NS	200	0	11,066	
Northwestern District Total		NS	NS	NS	1,280	NS	10,950	5,150	8,030	NS	700	0	16,194	
Crafton/Eshamy	225-30	NS	NS	NS	50	NS	10	0	0	NS	0	0	60	
Eshamy District Total		NS	NS	NS	50	NS	10	0	0	NS	0	0	60	
Chenega Is. & Dangerous Passage	226-20	NS	NS	NS	NS	2,260	925	NS	0	10	NS	0	2,485	
East Knight Is.	226-30	NS	NS	NS	0	0	1,000	NS	0	0	NS	0	1,000	
Bainbridge & Latouche Passage	226-40	NS	NS	NS	NS	0	200	NS	0	0	NS	0	200	
Port Bainbridge	226-50	NS	NS	NS	NS	0	300	NS	0	0	NS	0	300	
Southwestern District Total		NS	NS	NS	NS	2,260	2,425	NS	0	10	NS	0	3,985	
Montague Strait	227-10	NS	NS	NS	NS	25	25	NS	0	10	NS	0	50	
Green Island	227-20	NS	NS	NS	NS	115	450	NS	0	0	NS	0	515	
Montague District Total		NS	NS	NS	NS	140	475	NS	0	10	NS	0	565	
Orca Is. & East Hawkins	228-10	NS	NS	0	0	0	NS	NS	0	NS	0	0	0	
Hawkins Cutoff	228-20	NS	NS	0	0	1,500	3,200	NS	5,850	NS	200	0	7,096	
North Hawkins & Canoe Passage	228-30	NS	NS	0	0	0	1,330	NS	450	NS	25	0	1,457	
Double Bay	228-40	NS	NS	50	700	2,800	15,550	NS	NS	NS	1,500	0	18,317	
Johnstone Point	228-50	NS	NS	500	1,500	900	4,900	NS	NS	NS	200	0	6,384	
Port Etches	228-60	NS	NS	520	940	23,700	36,200	NS	30,350	NS	19,100	0	71,652	
Southeastern District Total		NS	NS	1,070	3,140	28,900	61,180	NS	36,650	NS	21,025	0	104,906	
TOTAL OF 9 DISTRICTS		275	1,995	14,531	34,221	75,950	131,071	65,695	82,555	20	31,925	0	257,717	

-continued-

## Appendix D.9. (page 2 of 2)

<sup>a</sup>There are a total of 209 streams included in the systematic aerial survey program. The survey program commences in the Eastern District where the earliest escapements in the Sound occur. Weather and conditions permitting, each stream is flown weekly. Failure to fly a survey due to run timing or bad survey conditions is denoted by NS (no survey). A notation of NC (no count) occurs when a stream is flown but no count is possible because of survey conditions (ie. water clarity). During the peak of the pink salmon run many streams are flown twice weekly to provide fisheries managers with more timely escapement data. In cases where more than one survey per week was flown the weekly observation shown in this table is the average of the two counts if observing conditions during both were good or, the maximum of the two counts if conditions during the minimum count were poor.

<sup>b</sup>The adjusted total is an escapement estimate based a geometric method used since the inception of the systematic survey program in the early 1960's. In this method, aerial observers are assumed to count without error or bias. Linear interpolations between observations are used to estimate numbers of fish in the stream on days when no surveys are flown. All daily observations and interpolations are summed across the season. Because fish seen on day  $i+1$  may include fish seen on day  $i$ , the sum of all daily observations and interpolations must be divided by some residence time for fish in the streams to account for duplicate observations. The residence time of 17.5 days which has historically been used in this calculation is from tagging data completed by National Marine Fisheries Service on Olsen Creek in the early 1960's. Since observer bias does occur and since both observer bias and stream life are stream specific, adjusted totals in this table may be used for interannual comparisons but should not be interpreted as the true escapement.



Appendix D.10. Current year and historical weekly chum salmon escapement performance of index spawning streams, 2002.

Appendix D.11. Aerial survey escapement indices of sockeye salmon from selected systems, 2002.

System Name	Stream Number	Week Ending Date <sup>a</sup>							
		07/13	07/20	07/27	08/03	08/10	08/17	08/24	08/31
Sheep River	36	0	0	1	0	0	0	NS	0
Keta Creek	83	0	0	0	0	2	0	NS	0
Billy's Hole	218	600	200	NS	300	25	200	NS	0
Cowpen Creek	242	NS	0	NS	10	600	6	NS	0
Miner's River	244	NS	750	NS	NS	NS	350	NS	210
Red Creek	300	NS	0	NS	0	50	0	NS	0
Golden Lagoon	310	NS	0	NS	500	0	0	NS	0
Coghill River	322	NS	500	NS	0	0	1,200	NS	0
Halferty Creek	454	NS	0	0	NS	20	0	NS	0
Cochrane Creek	461	NS	0	0	NS	350	0	NS	0
Shrode Creek	476	NS	150	0	625	0	425	NS	200
Gumboot Creek	507	NS	0	0	NS	500	0	NS	0
Eshamy River	511	NS	0	0	1,100	0	4,500	NS	0
Jackpot River	608	NS	NS	0	2,000	NS	150	NS	NS
Brizgaloff Creek	623	NS	NS	0	0	NS	75	25	0
Bainbridge Creek	630	NS	NS	250	500	NS	300	0	0
Total		600	1,600	251	5,035	1,547	7,206	25	410

<sup>a</sup> Counts contained in this table are obtained in conjunction with the regular pink and chum salmon aerial survey program. Many of these sockeye salmon systems are difficult to survey by air and thus the counts do not necessarily represent total live abundance at a particular time.

Appendix D.12. Temporally stratified age and sex composition of chum salmon harvested in the Prince William Sound commercial common property purse seine fishery, 2002.

		Brood Year and Age Class				Total
		1999	1998	1997	1996	
		0.2	0.3	0.4	0.5	
<b>Coghill District</b>						
Strata Combined:	05/27 - 07/27					
Sampling dates:	05/31 - 07/12					
Sample size:	2,713					
Female	Percentage of sample	2.7	48.9	4.5	0.3	56.5
	Number in catch	44,920	812,624	75,269	5,147	937,959
Male	Percentage of sample	2.4	36.3	4.3	0.2	43.1
	Number in catch	39,248	602,765	71,488	2,971	716,473
Total	Percentage of sample	5.1	85.5	8.9	0.5	100.0
	Number in catch	84,167	1,420,429	147,729	8,118	1,660,443
	Standard error	7,953	13,250	10,475	2,847	
<b>Montague District</b>						
Strata Combined:	05/31 - 06/30					
Sampling dates:	06/11 - 06/26					
Sample size:	1,175					
Female	Percentage of sample	3.9	51.9	2.4	0.1	58.3
	Number in catch	41,396	555,983	26,103	988	624,470
Male	Percentage of sample	2.6	35.7	3.3	0.1	41.7
	Number in catch	28,274	382,663	34,913	1,157	447,008
Total	Percentage of sample	6.5	87.6	5.7	0.2	100.0
	Number in catch	69,670	938,647	61,016	2,146	1,071,478
	Standard error	8,108	10,791	7,338	1,522	
<b>Eshamy District</b>						
Strata Combined:	05/16 - 08/25					
Sampling dates:	07/16 - 07/24					
Sample size:	778					
Female	Percentage of sample	14.8	57.7	3.6	0.6	76.8
	Number in catch	18,863	73,394	4,637	805	97,699
Male	Percentage of sample	5.2	17.0	1.0	0.0	23.2
	Number in catch	6,638	21,573	1,306	55	29,572
Total	Percentage of sample	20.0	74.6	4.7	0.7	100.0
	Number in catch	25,501	94,967	5,943	860	127,271
	Standard error	2,164	2,345	1,092	467	
<b>All Districts Combined</b>						
Strata Combined:	05/16 - 08/25					
Sampling dates:	05/31 - 07/24					
Sample size:	4,666					
Female	Percentage of sample	3.7	50.4	3.7	0.2	58.1
	Number in catch	105,179	1,442,001	106,009	6,940	1,660,129
Male	Percentage of sample	2.6	35.2	3.8	0.1	41.7
	Number in catch	74,160	1,007,001	107,707	4,184	1,193,052
Total	Percentage of sample	6.3	85.8	7.5	0.4	100.0
	Number in catch	179,339	2,454,042	214,687	11,124	2,859,192
	Standard error	11,562	17,248	12,836	3,262	

Appendix D.13. Summary of periods, dates, duration, and emergency orders issued by district, for the commercial purse seine salmon fishery, 2002.

Eastern (221)		Northern (222)		Coghill (223)		Southwestern (226)		Montague (227)		Southeastern (228)		Emergency Orders
Dates	Hours	Dates	Hours	Dates	Hours	Dates	Hours	Dates	Hours	Dates	Hours	
						05/31-06/02	60 <sup>a</sup>	05/31-06/02	60 <sup>a</sup>			2-F-E-005-02
						06/03-06/09	156 <sup>a</sup>	06/03-06/09	156 <sup>a</sup>			2-F-E-005-02
						06/10-06/16	156 <sup>a</sup>	06/10-06/16	156 <sup>a</sup>			2-F-E-005-02
						06/17-06/23	156 <sup>a</sup>	06/17-06/23	156 <sup>a</sup>			2-F-E-005-02
						06/24-06/30	156 <sup>a</sup>	06/24-06/30	156 <sup>a</sup>			2-F-E-005-02
						07/01-07/07	156 <sup>a</sup>	07/01-07/07	156 <sup>a</sup>			2-F-E-005-02
		07/08-07/09	24									2-F-E-037-02
		07/10-07/11	24					07/08-07/14	156 <sup>a</sup>			2-F-E-005-02
		07/12-07/13	24									2-F-E-040-02
		07/14-07/15	24									2-F-E-040-02
07/18	12 <sup>a</sup>	07/18	12 <sup>a</sup>					07/15-07/16	36 <sup>a</sup>	07/18	12 <sup>a</sup>	2-F-E-042-02
								07/18-07/19	36 <sup>a</sup>			2-F-E-048-02
				07/18-07/20	36 <sup>b</sup>							2-F-E-047-02
		07/21-07/27	156 <sup>c</sup>					07/23-07/24	36 <sup>a</sup>			2-F-E-062-02
07/26	12 <sup>b</sup>											2-F-E-051-02
07/29	12 <sup>b</sup>											2-F-E-063-02
				07/29-07/31	48 <sup>c</sup>							2-F-E-067-02
		08/14	12 <sup>b</sup>			08/14	12 <sup>b</sup>					2-F-E-066-02
		08/16	12 <sup>c</sup>	08/16	12 <sup>d</sup>	08/16	12 <sup>c</sup>					2-F-E-074-02
		08/18	12 <sup>c</sup>	08/18	12 <sup>d</sup>	08/18	12 <sup>d</sup>					2-F-E-075-02
		08/20	12 <sup>d</sup>	08/20	12 <sup>d</sup>	08/20	12 <sup>d</sup>					2-F-E-076-02
		08/22	12 <sup>e</sup>	08/22	12 <sup>d</sup>	08/22	12 <sup>d</sup>					2-F-E-077-02
												2-F-E-080-02

-continued-

Appendix D.13. (page 2 of 4)

Eastern (221)		Northern (222)		Coghill (223)		Southwestern (226)		Montague (227)		Southeastern (228)		Emergency Orders
Dates	Hours	Dates	Hours	Dates	Hours	Dates	Hours	Dates	Hours	Dates	Hours	
09/03	12 <sup>c</sup>	08/24	12 <sup>d</sup>	08/24	12 <sup>d</sup>	08/24	12 <sup>b</sup>					2-F-E-081-02
09/05	12 <sup>d</sup>	08/26-09/01	156 <sup>f</sup>	08/26-09/01	156 <sup>e</sup>	08/26-09/01	156 <sup>e</sup>					2-F-E-082-02
09/07-09/08	36 <sup>e</sup>	09/02-09/08	156 <sup>f</sup>	09/02-09/08	156 <sup>e</sup>	09/02-09/08	156 <sup>e</sup>					2-F-E-082-02
09/10-09/13	84 <sup>f</sup>											2-F-E-085-02
												2-F-E-086-02
		09/09-09/15	156 <sup>f</sup>	09/09-09/15	156 <sup>f</sup>	09/09-09/15	156 <sup>e</sup>					2-F-E-091-02
		09/16-09/22	156 <sup>g</sup>	09/16-09/22	156 <sup>f</sup>	09/16-09/22	156 <sup>b</sup>					2-F-E-093-02
		09/23-09/25	48 <sup>g</sup>	09/23-09/25	48 <sup>g</sup>	09/23-09/25	48 <sup>e</sup>					2-F-E-082-02, 2-F-E-086-02
												2-F-E-092-02, 2-F-E-095-02
												2-F-E-097-02

**Eastern District**

<sup>a</sup> Waters of the Eastern District, north of the latitude of Black Point and south of a line from Entrance Point to Potato Point, were open.

<sup>b</sup> In the Eastern District, waters north of a line from Entrance Point to Potato Point and west of 146° 30' 37" W. longitude, were open.

<sup>c</sup> In the Eastern District, waters north of a line from Entrance Point to Potato Point and west of 146° 27' W. longitude, were open.

<sup>d</sup> Waters of the Eastern District, north of a line from Entrance Point to Potato Point and west of a line from the Alyeska Pipeline Security Zone "B buoy" to the east end of the container dock in front of the grain elevators on the north shore of Port Valdez, were open.

<sup>e</sup> In the Eastern District, waters north of a line from Entrance Point to Potato Point and west of a line from the brown oil boom container located between Solomon Gulch Hatchery and Allison Point to the east end of the container dock in front of the grain elevators on the north shore of Port Valdez, were open.

<sup>f</sup> Waters of the Eastern District north of a line from Entrance Point to Potato Point east a line from the brown oil boom container located between Solomon Gulch Hatchery and Allison Point, along the yellow SERVUS buoys around VDFA Hatchery to the brown oil boom container east of the hatchery between VFDA and PetroStar were open. In addition, all waters of the Valdez small boat harbor and all waters within 50 yards of the entrance to the harbor were closed. Regulatory closed waters at the head of Port Valdez were not in effect.

-continued-

## Appendix D.13. (Page 3 of 4)

### Northern District

<sup>a</sup> Waters of the Northern District, excluding the Perry Island Subdistrict, were open.

<sup>b</sup> Only Northern District waters north of Payday Point were open. The Cannery Creek Hatchery (CCH) Terminal Harvest Area (THA) and Special Harvest Area (SHA) and waters of Jonah and Siwash Bays, yellow Salmon Harvest Task Force (SHTF) markers, were closed.

<sup>c</sup> Within the Northern District, waters north of Payday Point and south of 60° 59.30' N latitude, were open. Waters of Siwash Bay, inside the yellow SHTF markers, were closed.

<sup>d</sup> Northern District waters north of Payday Point and south of the latitude of the yellow SHTF marker on the north shore of Siwash Bay, were open. Waters of Hidden Bay, inside the yellow markers, were also open. Anadromous stream closures in Hidden Bay were not in effect.

<sup>e</sup> Northern District waters north of Payday Point and south of the latitude of the yellow SHTF marker on the north shore of Siwash Bay, were open.

<sup>f</sup> Northern District waters north of Payday Point were open. The CCH THA and SHA and Jonah and Siwash Bays, inside the yellow SHTF markers, remained closed. Waters of Hidden Bay, inside the yellow markers, were also open. Anadromous stream closures in Hidden Bay were not in effect.

<sup>g</sup> Waters of the Northern District, north of the latitude of Payday Point and the CCH THA and SHA, were open.

### Coghill District

<sup>a</sup> Only waters of the Wally Norenberg Hatchery (WNH) Terminal Harvest Area (THA) and Special Harvest Area (SHA) were open.

<sup>b</sup> Only waters of the WNH THA were open.

<sup>c</sup> Only waters of the Coghill District, north of the latitude of Golden Lagoon, were open. Anadromous stream closures in Coghill Lagoon were not in effect.

<sup>d</sup> In the Coghill District, only the waters of the Esther Subdistrict were open. The WNH THA and SHA remained closed.

<sup>e</sup> Within the Coghill District, only the Esther Subdistrict and WNH THA and SHA were open.

---

-continued-

## Appendix D.13. (Page 4 of 4)

<sup>f</sup> In the Coghill District, only the waters of the Esther Subdistrict and WNH THA were open. The WNH SHA remained closed.

### **Southwestern District**

<sup>a</sup> In the Southwestern District, only the Armin F. Koenig (AFK) Hatchery SHA was open. Anadromous stream closures in the AFK SHA were not in effect.

<sup>b</sup> Within the Southwestern District, only the Port San Juan Subdistrict and AFK Hatchery THA was open.

<sup>c</sup> Only the waters of the AFK Hatchery THA and SHA, up to a line of buoys in front of the barrier seine were open.

<sup>d</sup> In the Southwestern District, only the Port San Juan Subdistrict was open.

<sup>e</sup> In the Southwestern District, only the waters of the Port San Juan Subdistrict and AFK Hatchery THA and SHA were open.

### **Montague District**

<sup>a</sup> In the Montague District, only the Port Chalmers Subdistrict was open. Anadromous stream closures and regulatory closed waters in the Port Chambers Subdistrict were not in effect.

### **Southeastern District**

<sup>a</sup> Waters of the Southeastern District, west of the longitude of Middle Ground buoy, were open.

## **APPENDIX E: HATCHERY RETURNS**

Appendix E.1. Daily salmon sales harvests and sex ratios at the Wally Noerenberg Hatchery, 2002.

Date	Pink Salmon % Female	Pink	Chum
06/08		0	11,466
06/10		0	45,624
06/11		0	52,206
06/12		0	51,384
06/13		0	52,280
06/14		0	67,189
06/15		0	53,138
06/16		0	56,925
06/17		0	52,181
06/18		0	65,506
06/19		0	57,249
06/20		0	87,655
06/21		0	96,065
06/22		0	49,539
06/23		0	101,176
06/24		0	100,577
06/25		0	95,570
06/26		0	141,362
06/27		0	153,355
06/28		0	135,931
06/29		0	84,330
06/30		0	132,248
07/01		0	132,597
07/02		0	175,282
07/03		0	146,568
07/04		0	92,984
07/05		0	153,120
07/06		0	41,613
07/30	4.0%	74,375	21,832
07/31	3.5%	17,919	2,470
08/01	6.4%	90,608	5,615
08/02	11.8%	54,021	53,819
08/03	15.9%	86,099	5,660
08/04	14.7%	127,737	1,209
08/05	22.1%	48,065	1,229
08/06	19.0%	83,765	344
08/07	16.9%	156,749	0
08/08	24.4%	139,046	1,451
08/09	29.9%	175,906	0
08/10	32.7%	209,961	0
08/11	36.5%	193,563	0

-continued-

Appendix E.1. (page 2 of 2)

Date	% Female	Pink	Chum
08/12	38.8%	241,177	0
08/13	40.1%	182,370	0
08/14	46.1%	49,935	0
08/15	46.1%	180,571	0
08/16	47.3%	140,989	0
08/17	54.9%	152,975	0
08/18	51.8%	196,879	0
08/19	56.1%	177,781	0
08/20	57.1%	111,681	0
08/21	59.2%	212,451	0
08/22	68.6%	128,202	0
08/23	73.7%	141,255	0
08/24		97,258	0
<b>Totals</b>		<b>3,471,338</b>	<b>2,578,749</b>

**SALES SUMMARY:**

	Pink	Chum
Pounds Sold	12,935,493	21,434,315
Average Weights:	3.73	8.31
Roe Sales/Lbs:	4,679	19,599

**BROODSTOCK SUMMARY:**

	Pink	Chum
Fish spawned at hatchery	129,209	90,870
Green/bad/excess	72,581	47,541
Eggtake mortality	148,210	89,663
<b>Total available broodstock</b>	<b>350,000</b>	<b>228,074</b>
Estimated unharvested return	0	0
Estimated return to hatchery	350,000	228,074

Appendix E.2. Daily salmon sales harvests and sex ratios at the Armin  
F. Koernig Hatchery, 2002.

Date	% Female	Pink
07/30	3.6%	98,119
07/31	3.1%	91,690
08/02	7.3%	100,149
08/03	7.8%	59,632
08/04	9.4%	92,788
08/05	12.1%	116,820
08/06	10.6%	56,140
08/07	13.5%	152,182
08/08	22.1%	120,296
08/09	22.7%	239,467
08/10	23.8%	203,289
08/11	32.0%	125,097
08/12	24.8%	142,354
08/13	30.2%	153,240
08/15	37.4%	218,890
08/18	54.7%	28,817
08/19	51.0%	49,255
08/20	56.6%	60,560
08/21	57.0%	60,915
08/22	50.7%	52,217
08/23	59.7%	63,133
<b>Totals</b>		<b>2,285,050</b>

<b>SALES SUMMARY:</b>	Pink
Pounds Sold	7,576,217
Average Weight:	3.32
Roe Sales (lbs)	13562

<b>PINK BROODSTOCK SUMMARY:</b>	
Spawned at hatchery	195,231
Excessed/green/bad	139,871
Fishway/system mortality	33,592
<b>Total available broodstock</b>	<b>368,694</b>
Estimated unharvested return	0
Estimated return to hatchery	368,694

Appendix E.3. Daily pink salmon sales harvests and sex ratios at the Solomon Gulch Hatchery, 2002.

Date	% Female	Pink	Chum
06/23		9,635	174
06/24		6,522	203
06/25		29,591	234
06/26	5.0%	17,300	118
06/27	8.0%	47,958	400
06/28	8.0%	47,342	114
06/29	12.0%	61,420	540
06/30	14.0%	87,613	0
07/01	13.0%	143,318	51
07/02	17.0%	175,945	0
07/03	22.0%	200,984	51
07/04	16.0%	229,051	0
07/05		148,120	0
07/06	23.0%	204,520	0
07/07		348,794	0
07/08	39.0%	359,412	0
07/09	35.0%	455,988	0
07/10	43.0%	211,378	0
07/11		342,255	0
07/12	54.0%	312,759	0
07/13	52.0%	184,448	0
07/14	66.0%	247,260	0
07/15		188,849	0
07/16	57.0%	181,957	0
07/17		134,340	0
07/20		53,414	0
<b>Totals</b>		<b>4,430,173</b>	<b>1,885</b>

<b>SALES SUMMARY:</b>	pink	coho
Total Pounds Sold:	15,038,601	7
Average Weights:	3.39	7.00
Roe Sales (lbs.)	40,153	16,164

<b>PINK BROODSTOCK SUMMARY:</b>	
Spawned at hatchery	196,249
Green/bad/excess	106,284
System mortalities	8,796
<b>Total available broodstock</b>	<b>311,329</b>
Estimated creek spawners	10,049
Fish estimated remaining above weir	0
Estimated return to hatchery	321,378

<b>COHO BROODSTOCK SUMMARY:</b>	
Spawned at hatchery	653
Green/bad/excess	605
System mortalities	203
<b>Total available broodstock</b>	<b>1,461</b>
Estimated creek/bay spawners	0
Roe Sales	29,120
Fish estimated remaining above weir	0
Estimated return to hatchery	30,581

Appendix E.4. Daily pink salmon sales harvests and sex ratios at the Cannery  
Creek Hatchery, 2002.

Date	% Female	Pink
08/05	9.8%	82,752
08/06	9.5%	82,142
08/07	16.6%	58,291
08/08	18.2%	56,888
08/09	22.0%	75,194
08/10	23.5%	123,197
08/11	31.1%	31,143
08/12	40.3%	41,107
08/13	39.7%	8,595
08/17	46.8%	31,003
08/19	66.1%	10,879
<b>Totals</b>		<b>601,191</b>

**SALES SUMMARY:**

	Pink
Pounds Sold:	1,851,898
Average Weight:	3.08
Roe Sales (lbs)	8,182

**PINK BROODSTOCK SUMMARY:**

Spawned at hatchery	157,795
Green/bad/excess	75,867
Mortality	157,795
<b>Total available broodstock</b>	<b>391,457</b>
Estimated unharvested return	0
Estimated return to hatchery	391,457

Appendix E.5. Daily salmon sales harvests at the Main Bay Hatchery, 2002.

Date	Sockeye	Chum
06/28	27,344	0
06/30	36,531	292
07/02	11,427	0
07/03	10,217	0
07/04	8,197	0
<b>Totals</b>	<b>93,716</b>	<b>292</b>

<b>SALES SUMMARY:</b>	Sockeye	Chum
Pounds Sold	572,501	2,719
Average Weights:	6.11	9

**MAIN BAY SOCKEYE BROODSTOCK SUMMARY:**

<b>Main Bay Late Stock/Eshamy Lake</b>	
Good	5,281
Green/bad/excess	315
System mortalities	1,755
<b>Estimated return to Hatchery</b>	<b>7,351</b>

Appendix E.6. Sales harvests of salmon by species from private nonprofit hatcheries as reported on fish tickets, 1977 - 2002.

Year	Hatchery <sup>b</sup>	Catch by Species <sup>a</sup>				Total
		Sockeye	Coho	Pink	Chum	
1977	AFK			15,545		15,545
1978	AFK			114,188		114,188
1979	AFK			223,748		223,748
1980	AFK, N			346,728	6	346,734
1981	AFK			707,037	118	707,155
1982	AFK			1,354,732		1,354,732
1983	AFK			616,963		616,963
1984	AFK, SG			415,393	4,886	420,279
1985	AFK, SG			1,209,960	3,840	1,213,800
1986	AFK, SG		2,156	905,464	20,683	928,303
1987 <sup>c</sup>	AFK, SG, E, CC		7,015	2,691,190	2,549	2,700,754
1988	AFK, SG, E		6,110	1,632,701	42,694	1,681,505
1989 <sup>d</sup>	AFK, SG, WNH, CC, MB		52,307	7,812,373	131,362	7,996,042
1990	AFK, SG, WNH, CC		14,199	8,732,658	24,554	8,771,411
1991	AFK, SG, WNH, CC		52,625	5,955,561	13,471	6,021,657
1992	AFK, SG, WNH, CC, MB	163,086	73,530	3,049,394	57,392	3,343,402
1993	AFK, SG, WNH, CC, MB	113,738	3,259	2,212,403	475,148	2,804,548
1994	AFK, SG, WNH, CC, MB	79,541	22,454	10,521,439	380,365	11,003,799
1995	AFK, SG, WNH, CC, MB	63,326	13,248	5,100,819	231,539	5,408,932
1996 <sup>e</sup>	AFK, SG, WNH, CC, MB	86,911	38,945	8,291,205	1,066,683	9,483,744
1997	AFK, SG, WNH, CC, MB, GH	266,335	2,933	9,854,675	811,179	10,935,122
1998	AFK, SG, WNH, CC, MB, GH	148,288	20,199	8,825,226	519,215	9,512,928
1999	AFK, SG, WNH, CC, GH	28,777	0	13,130,211	777,180	13,936,168
2000	AFK, SG, WNH, CC, MB	218	1	11,125,819	1,729,876	12,855,914
2001	AFK, SG, WNH, CC, MB	43,073	21,781	12,914,314	936,028	13,915,196
2002	AFK, SG, WNH, CC, MB	93,722	1	10,787,752	2,580,926	13,462,402
TOTAL		1,087,015	330,763	128,547,498	9,809,694	139,774,971

<sup>a</sup> Includes salmon harvested by private nonprofit hatcheries in Prince William Sound to generate revenues to offset operating costs. Does not include carcass sales or fish processed only for roe extraction after egg takes.

<sup>b</sup> Hatcheries:  
 AFK = Armin F. Koernig (PWSAC) (formerly Port San Juan Hatchery)  
 E = Esther Hatchery (PWSAC), renamed WNH in 1989  
 SG = Solomon Gulch Hatchery (VFDA)  
 N = NERKA Inc.  
 CC = Cannery Creek (PWSAC) (formerly operated by ADF&G)  
 WNH = Wally Noerenberg Hatchery (PWSAC) (formerly Esther Hatchery)  
 MB = Main Bay (PWSAC) (formerly operated by ADF&G)  
 GH = Gulkana Hatchery (Crosswind Lake Weir)(formerly operated by ADF&G)

<sup>c</sup> PWSAC administered a sales harvest at the state owned Cannery Creek hatchery. A majority of the coho salmon sold were carcasses and surplus brood fish from the Solomon Gulch hatchery.

<sup>d</sup> PWSAC administered a sales harvest at the state owned Main Bay Hatchery to harvest a surplus of chum salmon due to closure of the common property fishery.

<sup>e</sup> Includes 269,848 pink salmon Peter Pan Seafoods bought from VFDA and then discarded after roe salvage. Also includes approximately 250,000 chum processed by PWSAC for meal production and roe salvage.

Appendix E.7. Summary of pink and chum salmon runs to Prince William Sound hatcheries, 2002.

**Pink salmon runs to Prince William Sound hatcheries<sup>a</sup>**

Hatchery	2001 Fry Release	2002 Forecast Return	Estimated Total Return	Marine Survival	Estimated CPF Contribution	Estimated Sales Contribution <sup>b</sup>	Escmt. and Brood <sup>c</sup>	Eggs Taken (millions)
Solomon Gulch	203,897,201	8,400,000	5,055,509	2.5%	360,850	4,368,519	321,378	231.0
A. F. Koernig	150,287,930	7,100,000	7,758,567	5.2%	5,098,103	2,291,770	368,694	178.5
Wally Noerenberg	127,651,881	6,400,000	5,616,802	6.1%	1,840,319	3,426,483	350,000	115.1
Cannery Creek	139,226,716	4,400,000	1,588,501	1.1%	627,065	616,354	391,457	152.8
<b>Total Pink Salmon</b>	<b>621,063,728</b>	<b>26,300,000</b>	<b>20,019,379</b>	<b>3.2%</b>	<b>7,926,337</b>	<b>10,703,126</b>	<b>1,431,529</b>	<b>677.4</b>

**Chum salmon runs to Prince William Sound hatcheries**

Hatchery	2001 Fry Release	2002 Forecast Return	Estimated Total Return	Estimated Comm Catch	Sales Harvest <sup>b</sup>	Escmt. and Brood <sup>c</sup>	Eggs Taken (millions)
A.F. Koernig	0	30,000	53,310	53,310	0		0.0
Wally Noerenberg <sup>d</sup>	57,712,566	1,290,000	5,237,624	2,430,801	2,578,749	228,074	111.9
Port Chalmers	18,882,739	260,000	1,071,478	1,071,478	0		0.0
<b>Total Chum Salmon</b>	<b>76,595,305</b>	<b>1,580,000</b>	<b>5,290,934</b>	<b>2,484,111</b>	<b>2,578,749</b>	<b>228,074</b>	<b>111.9</b>

<sup>a</sup> Contribution estimates of pink and chum salmon from PWS hatcheries are based on analysis of otolith recoveries and location of catch as reported on fish tickets.

<sup>b</sup> Does not include carcass sales which are part of the broodstock.

<sup>c</sup> Includes broodstock, overmature/green fish, holding mortalities, excess fish and fish processed for roe extraction. Does not include watershed spawners, unseen mortalities or fish remaining in the bay.

<sup>d</sup> Total return sum of CPF harvest from Eshamy and Coghill District less estimated mean (1970 - 86) wild stock chum salmon harvest from Eshamy and Coghill Districts and WHN Hatchery cost recovery and broodstock.

Appendix E.8. Historical catch contributions, thermally marked otolith releases, and total returns of pink salmon to Prince William Sound hatcheries, 1995 - 2002.

**Solomon Gulch**

Brood Year	Return Year	Fry Release	Broodstock	Total Cost Recovery Harvest	Hatchery Contribution to CR Harvest	Hatchery Contribution to the CPF <sup>a</sup>	Total Hatchery Return	Estimated Marine Survival
1995	1997	233,088,327	356,271	2,431,007	2,428,010	4,005,264	6,789,545	2.9%
1996	1998	188,862,094	334,551	3,428,348	3,076,945	1,226,679	4,638,175	2.5%
1997	1999	195,162,163	581,397	4,379,659	4,354,601	9,465,378	14,401,376	2.5%
1998	2000	213,906,642	315,404	4,033,635	3,983,473	7,635,581	11,934,458	5.6%
1999	2001	195,763,690	335,596	3,970,310	3,932,080	11,458,958	15,726,771	8.0%
2000	2002	203,897,201	321,378	4,430,173	4,368,519	360,850	5,055,509	2.5%
2001	2003	202,573,328						

**Armin F. Koernig**

Brood Year	Return Year	Fry Release	Broodstock	Total Cost Recovery Harvest	Hatchery Contribution to CR Harvest	Hatchery Contribution to the CPF <sup>a</sup>	Total Hatchery Return	Estimated Marine Survival
1995	1997	108,636,976	0	3,206,683	3,139,053	3,815,265	6,954,318	6.4%
1996	1998	52,384,532	343,978	1,634,956	1,582,038	5,037,454	6,963,470	13.3%
1997	1999	148,323,538	294,446	2,814,760	2,994,037	5,108,346	8,389,898	7.9%
1998	2000	133,156,995	235,813	2,017,913	1,998,334	4,646,469	6,880,616	5.2%
1999	2001	142,537,692	338,706	2,929,441	2,803,175	1,668,025	4,810,346	3.4%
2000	2002	150,287,930	368,694	2,285,050	2,291,770	5,098,103	7,758,567	5.2%
2001	2003	155,982,828						

-continued-

Appendix E.8. (page 2 of 2)

**Wally Noerenberg**

Brood Year	Return Year	Fry Release	Broodstock	Total Cost Recovery Harvest	Hatchery Contribution to CR Harvest	Hatchery Contribution to the CPF <sup>a</sup>	Total Hatchery Return	Estimated Marine Survival
1995	1997	176,431,919	409,455	2,280,868	2,321,255	3,464,254	6,194,964	3.5%
1996	1998	106,440,456	264,143	2,437,615	2,427,120	4,817,354	7,508,617	7.0%
1997	1999	103,675,208	274,664	3,860,431	3,861,891	4,828,682	8,966,850	8.6%
1998	2000	123,869,678	252,512	3,536,232	3,520,212	4,980,503	8,753,227	7.1%
1999	2001	116,069,339	325,003	4,937,169	4,949,180	1,906,503	7,181,110	6.2%
2000	2002	127,651,881	350,000	3,471,338	3,426,483	1,840,319	5,616,802	6.1%
2001	2003	106,229,524						

**Cannery Creek**

Brood Year	Return Year	Fry Release	Broodstock	Total Cost Recovery Harvest	Hatchery Contribution to CR Harvest	Hatchery Contribution to the CPF <sup>a</sup>	Total Hatchery Return	Estimated Marine Survival
1995	1997	140,441,131	319,329	1,897,259	1,852,317	3,608,272	5,779,918	4.1%
1996	1998	136,838,852	304,945	1,324,307	1,305,144	4,869,014	6,479,103	4.7%
1997	1999	137,571,564	294,446	2,076,361	2,014,448	5,414,942	7,722,850	5.6%
1998	2000	131,195,588	280,811	1,538,039	1,575,341	4,688,206	6,544,358	5.0%
1999	2001	132,236,317	428,859	1,089,998	1,103,072	589,171	2,121,305	1.6%
2000	2002	139,226,716	391,457	601,191	616,354	627,065	1,588,501	1.1%
2001	2003	138,626,713						

<sup>a</sup> Commercial common property fisheries.

Appendix E.9. Historical hatchery fry releases, harvest contributions, and total returns of pink salmon to all hatcheries combined, Prince William Sound, 1997-2002.

Brood Year	Return Year	Fry Release <sup>a</sup>	CWT/Otolith Applied to Fry Release <sup>a</sup>	Total		Total Recovery Harvest <sup>c</sup>	Brood escapements		Hatchery contributions <sup>d</sup>		CPF	Total	Estimated Marine Survival
				Broodstock Escapement <sup>a, b</sup>	Cost Recovery Harvest <sup>c</sup>		CR Harvests	Other Harvests					
1995	1997	641,675,469 <sup>f</sup>	1,079,354	1,977,463	9,854,675	1,974,521	9,780,451	226	14,893,055	26,648,253	4.15%		
1996	1998	483,704,011 <sup>f</sup>	All	3,011,186	8,825,226	3,008,251	8,666,960	6,931	16,145,999	27,828,141	5.75%		
1997	1999	542,383,070 <sup>f</sup>	All	4,531,560	13,130,211	4,529,055	12,988,616	237,318	24,838,848	42,593,837	7.85%		
1998	2000	602,128,903 <sup>f</sup>	All	1,293,409	11,125,819	1,293,409	11,055,419	728	22,099,196	34,448,752	5.72%		
1999	2001	586,607,038 <sup>f</sup>	All	1,647,425	12,914,314	1,647,425	12,765,960	1,204	15,625,341	30,039,930	5.12%		
2000	2002	621,062,096 <sup>f</sup>	All	1,497,115	10,787,752	1,399,966	10,703,126	992	7,926,335	20,030,419	3.23%		
2001	2003	603,412,393 <sup>f</sup>	All										

<sup>a</sup> Data from Prince William Sound Aquaculture and Valdez Fisheries Development Association annual reports and tagging reports.

<sup>b</sup> Brood escapement includes all fish not sold in the commercial common property or cost recovery fisheries, i.e., fish used for brood, excess to brood, and remaining in the bays after all fisheries and brood collections.

<sup>c</sup> Data from ADF&G fish ticket database.

<sup>d</sup> Data from ADF&G contribution estimates. No otolith collections were made from brood escapements after 1999 because the 1997-1999 data indicated the brood escapements were < 0.05 % wild stocks. Hatchery cost recovery samples from 1997-1999 indicated few wild fish (< 2%), so little otolith sampling has been done in the hatchery cost recovery harvests since 1999.

The other harvests and commercial common property (CPF) contributions are from all fishing districts in Prince William Sound (221-229) and exclude the Bering and Copper River harvests.

<sup>e</sup> Includes donated, discarded, test fisheries, and all other miscellaneous harvests. Data from ADF&G fish ticket and special project data summaries.

<sup>f</sup> All brood year 1995 - 2001 fry released had thermal otolith marks.

Appendix E.10. Hatchery contributions to the commercial common property pink salmon purse seine fishery in the Eastern District, 2002.

Period	Harvest Date	SGH	%	CCH	%	WNIH	%	AFK	%	Wild	%	Total
01	07/18	234,827	98.9%	0	0.0%	0	0.0%	0	0.0%	2,525	1.1%	237,352
02	07/26	56,861	95.5%	0	0.0%	0	0.0%	0	0.0%	2,708	4.5%	59,569
03	07/29	53,498	90.9%	0	0.0%	0	0.0%	0	0.0%	5,350	9.1%	58,848
04	09/03	177	90.9%	0	0.0%	0	0.0%	0	0.0%	18	9.1%	195
05	09/05	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0
06	09/07-09/08	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0
		345,364	97.0%	0	0.0%	0	0.0%	0	0.0%	10,600	3.0%	355,964

Appendix E.11. Hatchery contributions to the commercial common property pink salmon purse seine fishery in the Northern District, 2002.

Period	Harvest Date	SGH	%	CCH	%	WNH	%	AFK	%	Wild	%	Total
01	07/18	224	2.8%	224	2.8%	0	0.0%	0	0.0%	7,600	94.4%	8,047
02	08/14	0	0.0%	119,427	91.7%	4,071	3.1%	0	0.0%	6,786	5.2%	130,284
03	08/16	0	0.0%	28,332	92.4%	929	3.0%	0	0.0%	1,393	4.5%	30,654
04	08/18	0	0.0%	195,731	99.0%	0	0.0%	0	0.0%	2,060	1.0%	197,791
05	08/20	0	0.0%	73,869	64.6%	38,693	33.8%	0	0.0%	1,759	1.5%	114,321
06	08/22	0	0.0%	14,388	86.5%	1,798	10.8%	0	0.0%	450	2.7%	16,636
07	08/24	0	0.0%	12,730	23.1%	40,313	73.1%	2,122	3.8%	0	0.0%	55,165
08	08/26-09/01	0	0.0%	1,249	3.0%	38,716	93.9%	1,249	3.0%	0	0.0%	41,214
		224	0.04%	445,949	75.1%	124,521	21.0%	3,371	0.6%	20,048	3.4%	594,112

Appendix E.12. Hatchery contributions to the commercial common property pink salmon drift gillnet and purse seine fisheries in the Coghill District, 2002.

Period	Harvest Date	SGH	%	CCH	%	WNH	%	AFK	%	Wild	%	Total
01	05/27-05/28	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0
02	05/30-05/31	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0
03	06/03-06/04	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0
04	06/06-06/08	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0
05	06/10-06/12	0	0.0%	0	5.2%	1	90.6%	0	1.0%	0	3.1%	1
06	06/13-06/14	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0
07	06/15-06/16	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0
08	06/17-06/18	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0
09	06/18-06/19	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0
10	06/20-06/21	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0
11	06/22-06/23	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0
12	06/27-06/28	0	0.0%	0	5.4%	7	90.3%	0	1.1%	0	3.2%	8
13	07/01-07/02	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0
14	07/02-07/04	0	0.0%	70	5.2%	1,213	90.6%	14	1.0%	42	3.1%	1,339
15	07/04-07/05	0	0.0%	29	5.2%	507	90.6%	6	1.0%	17	3.1%	559
16	07/06-07/07	0	0.0%	71	5.2%	1,233	90.6%	14	1.0%	43	3.1%	1,361
17	07/07-07/09	0	0.0%	15	5.2%	265	90.6%	3	1.0%	9	3.1%	292
18	07/09-07/11	0	0.0%	21	5.2%	370	90.6%	4	1.0%	13	3.1%	408
19	07/11-07/13	0	0.0%	20	5.2%	356	90.6%	4	1.0%	12	3.1%	393
20	07/14-07/16	0	0.0%	42	5.2%	729	90.6%	8	1.0%	25	3.1%	804
21	07/18/07/20	0	0.0%	212	5.2%	3,694	90.6%	42	1.0%	127	3.1%	4,076
22	07/21-07/27	0	0.0%	5	5.2%	81	90.6%	1	1.0%	3	3.1%	89
23	07/29-07/31	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0
24	08/16	0	0.0%	17,261	5.2%	300,346	90.6%	3,452	1.0%	10,357	3.1%	331,416
25	08/18	0	0.0%	44,329	19.8%	174,983	78.1%	0	0.0%	4,666	2.1%	223,978
26	08/20	0	0.0%	8,359	5.2%	147,118	91.7%	0	0.0%	5,015	3.1%	160,492
27	08/22	0	0.0%	676	1.5%	42,574	92.6%	2,027	4.4%	676	1.5%	45,953
28	08/24	0	0.0%	2,180	6.8%	29,068	90.9%	0	0.0%	727	2.3%	31,975
29	08/26-09/01	0	0.0%	7,943	2.1%	369,331	96.9%	0	0.0%	3,971	1.0%	381,245
30	09/02-09/08	0	0.0%	1,943	2.1%	90,334	96.9%	0	0.0%	971	1.0%	93,248
		0	0.0%	83,176	6.5%	1,162,209	91.0%	5,577	0.4%	26,675	2.1%	1,277,637

Appendix E.13. Hatchery contributions to the commercial common property pink salmon drift and set gillnet fisheries in the Eshamy District, 2002.

Period	Harvest Date	SGH	%	CCH	%	WNH	%	AFK	%	Wild	%	Total
01	05/16-05/19	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0
02	05/20-05/22	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0
03	05/23-05/25	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0
04	05/27-05/29	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0
05	05/30-06/01	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0
06	06/03-06/05	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0
07	06/06-06/08	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0
08	06/10-06/12	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0
09	06/13-06/14	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0
10	06/17-06/19	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0
11	06/20-06/21	0	2.0%	0	0.0%	0	0.0%	0	0.0%	3	92.0%	3
12	06/24-06/25	0	2.0%	0	0.0%	0	0.0%	0	0.0%	3	92.0%	3
13	07/01-07/02	10	2.0%	0	0.0%	29	6.0%	0	0.0%	448	92.0%	487
14	07/04-07/05	62	2.0%	0	0.0%	185	6.0%	0	0.0%	2,829	92.0%	3,075
15	07/06-07/07	99	2.0%	0	0.0%	296	6.0%	0	0.0%	4,534	92.0%	4,928
16	07/08-07/09	47	2.0%	0	0.0%	140	6.0%	0	0.0%	2,151	92.0%	2,338
17	07/10-07/11	53	2.0%	0	0.0%	160	6.0%	0	0.0%	2,458	92.0%	2,672
18	07/12-07/14	41	2.0%	0	0.0%	123	6.0%	0	0.0%	1,881	92.0%	2,045
19	07/14-07/16	143	2.0%	0	0.0%	429	6.0%	0	0.0%	6,572	92.0%	7,143
20	07/18-07/20	303	2.0%	0	0.0%	908	6.0%	0	0.0%	13,924	92.0%	15,135
21	07/22-07/23	305	2.0%	0	0.0%	916	6.0%	0	0.0%	14,040	92.0%	15,261
22	07/25-07/27	254	2.0%	0	0.0%	761	6.0%	0	0.0%	11,664	92.0%	12,678
23	07/29-07/30	975	3.4%	1,300	4.6%	14,947	52.9%	1,300	4.6%	9,748	34.5%	28,269
24	08/01-08/03	562	3.4%	749	4.6%	8,617	52.9%	749	4.6%	5,620	34.5%	16,297
25	08/05-08/06	0	0.0%	0	0.0%	10,358	80.0%	863	6.7%	1,726	13.3%	12,947
26	08/08-08/09	0	0.0%	0	0.0%	10,428	80.0%	869	6.7%	1,738	13.3%	13,035
27	08/12-08/13	0	0.0%	0	0.0%	9,324	80.0%	777	6.7%	1,554	13.3%	11,655
28	08/15-08/16	0	0.0%	0	0.0%	10,222	80.0%	852	6.7%	1,704	13.3%	12,777
29	08/19-08/22	0	0.0%	0	0.0%	12,827	80.0%	1,069	6.7%	2,138	13.3%	16,034
30	08/23-08/25	0	0.0%	0	0.0%	2,812	80.0%	234	6.7%	469	13.3%	3,515
31	08/26-09/01	0	0.0%	0	0.0%	5,191	80.0%	433	6.7%	865	13.3%	6,489
		2,852	1.5%	2,049	1.1%	88,671	47.5%	7,146	3.8%	86,068	46.1%	186,786

Appendix E.14. Hatchery contributions to the commercial common property pink salmon purse seine fishery in the Southwestern District, 2002.

Period	Harvest Date	SGH	%	CCH	%	WNH	%	AFK	%	Wild	%	Total
01	05/31-06/03	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0
02	06/03-06/09	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0
03	06/10-06/16	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0
04	06/17-06/23	0	0.0%	0	0.0%	5,510	15.6%	29,752	84.4%	0	0.0%	35,262
05	06/24-06/30	0	0.0%	0	0.0%	161	15.6%	870	84.4%	0	0.0%	1,031
06	07/01-07/07	0	0.0%	0	0.0%	98	15.6%	527	84.4%	0	0.0%	625
07	07/08-07/14	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0
08	08/14	0	0.0%	0	0.0%	117,892	15.6%	636,614	84.4%	0	0.0%	754,506
09	08/16	0	0.0%	0	0.0%	92,265	7.3%	1,173,079	92.7%	0	0.0%	1,265,344
10	08/18	0	0.0%	19,847	3.6%	39,694	7.1%	496,172	89.3%	0	0.0%	555,713
11	08/20	0	0.0%	44,522	6.9%	44,522	6.9%	534,266	82.8%	22,261	3.4%	645,572
12	08/22	0	0.0%	4,867	1.0%	63,275	13.5%	374,783	80.2%	24,337	5.2%	467,262
13	08/24	0	0.0%	10,231	2.1%	35,808	7.3%	439,927	89.6%	5,115	1.0%	491,081
14	08/26-09/01	0	0.0%	13,563	1.1%	54,250	4.4%	1,152,813	93.4%	13,563	1.1%	1,234,188
15	09/02	0	0.0%	2,861	1.1%	11,444	4.4%	243,188	93.4%	2,861	1.1%	260,354
		0	0.0%	95,891	1.7%	464,918	8.1%	5,081,993	89.0%	68,137	1.2%	5,710,938

Appendix E.15. Hatchery contributions to the commercial common property pink salmon purse seine fishery in the Montague District, 2002.

Period	Harvest Date	SGH	%	CCH	%	WNH	%	AFK	%	Wild	%	Total
01	05/31-06/02	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0
02	06/03-06/09	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0
03	06/10-06/16	12	36.0%	0	0.0%	0	0.0%	0	0.0%	20	64.0%	32
04	06/17-06/23	100	28.0%	0	0.0%	0	0.0%	0	0.0%	257	72.0%	357
05	06/24-06/30	150	36.0%	0	0.0%	0	0.0%	0	0.0%	266	64.0%	416
06	07/01-07/07	11,339	40.0%	0	0.0%	0	0.0%	0	0.0%	17,008	60.0%	28,347
07	07/08-07/14	144	37.0%	0	0.0%	0	0.0%	0	0.0%	244	63.0%	388
08	07/15-07/16	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0
09	07/18-07/19	317	28.0%	0	0.0%	0	0.0%	0	0.0%	815	72.0%	1,132
10	07/23-07/24	350	16.0%	0	0.0%	0	0.0%	0	0.0%	1,835	84.0%	2,185
		12,410	37.8%	0	0.0%	0	0.0%	0	0.0%	20,447	62.2%	32,857

Appendix E.16. Hatchery contributions to the commercial common property pink salmon purse seine fishery in the Southeastern District, 2002.

---

Period	Harvest Date	SGH	%	CCH	%	WNIH	%	AFK	%	Wild	%	Total
01	07/18	0	0.0%	0	0.0%	0	0.0%	17	1.6%	1,058	98.4%	1,075
		0	0.0%	0	0.0%	0	0.0%	17	1.6%	1,058	98.4%	1,075

Appendix E.17. Hatchery contributions to the commercial common property pink salmon drift gillnet and purse seine fisheries in the Unakwik District, 2002.

Period	Harvest Date	SGH	%	CCH	%	WNH	%	AFK	%	Wild	%	Total
01	06/17	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0
02	06/20-06/21	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0
03	06/24-06/25	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0
04	06/27-06/28	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0
05	07/01-07/02	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0
06	07/04-07/05	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0
07	07/06-07/07	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0
08	07/08-07/09	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0
09	07/10-07/11	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0
10	07/12-07/13	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0
11	07/14-07/16	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0
12	07/18-07/20	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0
13	07/22-07/23	0	0.0%	0	0.0%	0	0.0%	0	0.0%	133	100.0%	133
		0	0.0%	0	0.0%	0	0.0%	0	0.0%	133	100.0%	133

## **APPENDIX F: SUBSISTENCE AND PERSONAL USE FISHERIES**

Appendix F.1. Subsistence salmon harvest by species and gear type, Prince William Sound and Upper Copper River, 2002.

Area	Permits		Permits Fished	Gear Type	Chinook <sup>a</sup>	Sockeye <sup>a</sup>	Coho <sup>a</sup>	Pink <sup>a</sup>	Chum <sup>a</sup>	Other <sup>b</sup>	Total
	Issued										
Prince William Sound	11	2	2	Drift Gillnet	0	31	0	9	7	0	47
PWS TOTAL	11	2	2		0	31	0	9	7	0	47
Copper River District	355	199	199	Drift Gillnet	549	3,067	28	0	2	49	3,695
Upper Copper River											
Eastern/Northern Districts	19	5	5	Drift gillnet, purse seine, and dip net	0	375	136	28	36	0	575
Southwestern District	10	4	4	Drift gillnet, purse seine, and dip net	10	142	123	83	60	0	418
Batzulnetas											
Total											

<sup>a</sup> Reported harvest only.

<sup>b</sup> Includes whitefish, flounder and Dolly Varden.

Appendix F.2. Salmon harvest and effort in the Prince William Sound subsistence fishery, 1965-2002.

Year	Permits		Harvest <sup>a</sup>						
	Issued	Returned	Chinook	Sockeye	Coho	Pink	Chum	Unknown	Total
1965	22	16				179	25		204
1966	3	3		3	19	20	50		92
1967	4	3			4	4			8
1968	4	3			20	156		22	198
1969	7	3			16				16
1970	1	1							0
1971	3	2				46			46
1972	0								0
1973	19	16			289				289
1974	3	1							0
1975	2	0							0
1976	0								0
1977	4	4							0
1978	3	2							0
1979	15	2							0
1980	26	15		7	6				13
1981	12	8		3	29		2		34
1982	35	27		84	4	31	24		143
1983	26	21		22	36	9	79		146
1984	8	8		10		11	2		23
1985	22	16	1	27	16	14	26		84
1986	25	14		5	15				20
1987	18	17	5	31	6		16		58
1988	7	7	2	51	7	10	9		79
1989	11	7	0	0	0	0	3	0	3
1990	8	7	0	0	7	4	0	0	11
1991	9	5	0	2	0	0	0	0	2
1992	10	6	0	20	0	0	0	0	20
1993	6	6	1	104	10	0	0	0	115
1994	5	4	0	0	0	0	0	0	0
1995	4	2	0	0	0	0	0	0	0
1996	10	7	0	0	0	0	0	0	0
1997	4	3	0	3	0	0	0	0	3
1998	4	3	0	0	0	0	0	0	0
1999	3	3	0	0	0	0	0	0	0
2000	3	3	0	0	0	0	0	0	0
2001	3	3	0	0	0	0	0	0	0
2002	11	9	0	31	0	9	7	0	47

<sup>a</sup> Includes harvest from Prince William Sound Area, exclusive of the Copper River District and customary and traditional subsistence locations within PWS. Reported harvest only.

Appendix F.3. Salmon harvest and effort in the Copper River District subsistence gillnet fishery, 1965-2002.

Year	Total	Permits Issued			Catch			Total
	Issued	Fished <sup>a</sup>	Not Fished	Not returned	Chinook <sup>c</sup>	Sockeye <sup>c</sup>	Coho <sup>c</sup>	
1965	31	15	5	11	12	459	85	556
1966	45	21	10	14	47	175		222
1967	61	37	19	5	83	153		236
1968	17	7	8	2	11	36		47
1969	49	20	13	16	16	63	85	164
1970	32	24	3	5	66	179		245
1971	29	17	9	3	10	32	4	46
1972	104	75	5	24	149	569	53	771
1973	94	89	N/A	5	153	326	180	659
1974	9	3	2	4	5	4	2	11
1975	2	2	N/A	0	0	5	0	5
1976	27	14	N/A	13	1	10	0	11
1977	23	22	N/A	1	10	71	0	81
1978	34	9	19	6	37	18	12	67
1979	49	21	20	8	45	26	17	88
1980	39	18	17	4	19	27	17	63
1981	72	30	21	21	48	145	104	297
1982	108	48	42	18	60	634	106	802 <sup>b</sup>
1983	87	31	42	14	79	107	57	254 <sup>b</sup>
1984	118	57	47	14	68	324	135	549 <sup>b</sup>
1985	94	67	27	0	88	261	83	433 <sup>b</sup>
1986	88	57	28	3	86	348	47	481 <sup>b</sup>
1987	95	39	50	6	49	359	14	510 <sup>b</sup>
1988	114	57	40	17	59	226	42	440 <sup>b</sup>
1989	75	32	32	11	56	339	51	454 <sup>b</sup>
1990	88	40	39	12	60	469	82	680 <sup>c,d</sup>
1991	129	71	44	14	136	830	38	1,009 <sup>c,d</sup>
1992	126	67	47	12	142	785	42	999 <sup>c,d</sup>
1993	111	50	43	18	120	428	29	579 <sup>c,d</sup>
1994	101	60	37	4	164	474	67	708 <sup>d</sup>
1995	126	72	41	13	154	692	31	880 <sup>c,d</sup>
1996	176	101	57	18	276	969	47	1,294 <sup>c,d</sup>
1997	269	165	78	26	200	1,001	1,777	2,989 <sup>c,d</sup>
1998	245	144	87	14	295	850	680	1,832 <sup>c,d</sup>
1999	294	175	100	19	353	1,330	682	2,379 <sup>c,d</sup>
2000	416	293	107	16	689	4,360	44	5,118 <sup>b</sup>
2001	468	288	151	29	826	3,072	70	3,971 <sup>b</sup>
2002	355	199	132	24	549	3,067	28	3,695 <sup>d</sup>

<sup>a</sup> Includes all permit holders, successful or unsuccessful.

<sup>b</sup> Total also includes pink, chum and/or Dolly Varden.

<sup>c</sup> Data updated in 2000.

<sup>d</sup> Total includes whitefish, Dolly Varden, and/or other species.

<sup>e</sup> Reported harvest only.

Appendix F.4. Salmon harvest and effort in the Eastern District (Tatitlek) and Southwestern District (Chenega) subsistence fisheries, 1988 - 2002.

Year	Permits		Harvest <sup>a</sup>							Total
	Issued	Fished	Chinook	Sockeye	Coho	Pink	Chum	Unknown		
EASTERN										
1988 <sup>c</sup>	17	9	2	210	211	143	245	0	811	
1989 <sup>c</sup>	14	7	1	107	653	33	43	0	837	
1990 <sup>c</sup>	13	3	0	5	241	10	4	0	260	
1991 <sup>c</sup>	17	7	0	107	984	320	28	0	1,439	
1992 <sup>c</sup>	16	5	2	441	369	30	49	0	891	
1993	18	7	2	512	305	144	74	180	1,217	
1994	14	4	0	50	143	50	70	0	313	
1995 <sup>b</sup>	15									
1996	6	1	0	0	38	0	0	0	38	
1997	6	3	0	107	45	0	54	0	206	
1998 <sup>c</sup>	11	3	0	2	321	4	28	0	355	
1999	17	8	0	344	541	31	31	0	947	
2000	12	3	0	140	468	40	40	0	688	
2001	14	8	0	114	230	60	12	0	416	
2002 <sup>d</sup>	19	5	0	375	136	28	36	0	575	
SOUTHWESTERN										
1988	10	5	1	50	8	251	294	0	604	
1989	8	7	0	322	0	554	180	0	1,056	
1990	7	2	1	36	5	20	2	0	64	
1991	12	4	3	345	42	195	53	0	638	
1992	14	8	1	526	23	313	99	0	962	
1993 <sup>c</sup>	22	17	2	875	60	232	124	0	1,293	
1994	16	8	5	192	77	402	161	0	837	
1995	10	5	2	152	67	67	41	0	329	
1996 <sup>c</sup>	7	4	0	135	9	125	46	0	315	
1997	5	4	44	193	30	110	272	0	649	
1998	4	3	13	114	20	65	119	0	331	
1999	14	7	57	499	62	168	101	0	887	
2000	12	6	24	39	229	211	143	0	646	
2001	16	8	2	119	92	95	146	0	454	
2002	10	4	10	142	123	83	60	0	418	

<sup>a</sup> Reported harvest only.

<sup>b</sup> No permits were returned.

<sup>c</sup> Data updated 2001.

<sup>d</sup> Of the 19 permits issued, only 6 permits were returned.

Appendix F.5. Salmon harvest by species and numbers of permits by gear type for the Upper Copper River subsistence and personal use fisheries, 1981-2002.

Year	Permits Issued			Reported Catch <sup>a</sup>			Reported Catch by Species			Total Salmon Catch	
	Dip Net	Wheel	Total	% Dip Net	Wheel	Total	Chinook	Sockeye	Coho	Reported	Estimated
1981	3,555	523	4,078	52%	48%	55,796	1,913	53,008	849	55,770	68,654
1982	5,475	615	6,090	62%	38%	100,734	2,532	96,799	1,246	100,577	109,557
1983	6,911	630	7,541	67%	33%	108,228	5,421	100,995	1,690	108,106	118,599
1984 s	104	458	562	6%	94%	20,597	366	20,101	120	20,587	28,617
p	5,311	17	5,328	100%		46,241	1,592	44,079	552	46,223	50,714
s&p	5,415	475	5,890	70%	30%	67,903	2,007	65,078	789	67,874	79,331
1985	4,153	533	5,686	57%	43%	52,733	1,673	50,488	544	52,705	64,164
1986 s <sup>b</sup>	39	366	405	3%	97%	25,781	622	24,890	264	25,776	28,417
p	3,966	65	4,031	98%	2%	42,695	2,294	39,794	521	42,609	44,047
s&p	4,005	431	4,436	62%	38%	68,476	2,916	64,684	785	68,385	72,464
1987 s <sup>b</sup>	59	372	431	4%	96%	25,271	531	21,615	105	22,251	34,080
p	4,186	73	4,259	99%	1%	43,409	2,749	40,285	393	43,427	46,908
s&p	4,245	445	4,690	64%	36%	68,680	3,280	61,900	498	65,678	80,988
1988 s	70	339	409	9%	91%	21,481	693	20,391	260	21,344	30,558
p	4,205	46	4,251	97%	3%	41,730	2,723	38,533	450	41,706	45,855
s&p	4,275	385	4,660	68%	32%	62,545	3,416	58,924	710	63,050	76,413
1989 s	78	308	386	8%	92%	27,732	745	26,835	65	27,645	29,216
p	4,447	137	4,584	94%	6%	56,544	2,160	53,505	825	56,490	58,941
s&p	4,525	445	4,970	66%	34%	84,156	2,905	80,340	890	84,135	88,157
1990 s	95	311	406	9%	91%	30,663	610	29,947	87	30,644	32,504
p	5,631	58	5,689	99%	1%	67,988	2,594	63,793	1,446	67,833	70,812
s&p	5,726	369	6,095	71%	29%	98,633	3,204	93,740	1,533	98,477	103,316
1991 s	293	418	711	16%	84%	37,761	1,217	36,289	213	37,719	41,159
p	6,222	NA	6,222	100%		82,767	3,947	75,499	3,264	82,710	85,059
s&p	6,515	418	6,933	74%	26%	120,528	5,164	111,788	3,477	120,429	126,218
1992 s	151	504	655	10%	90%	44,448	1,368	42,689	330	44,387	47,031
p	6,387	NA	6,387	100%		89,840	3,337	84,981	1,487	89,805	91,683
s&p	6,538	504	7,042	70%	30%	134,288	4,705	127,670	1,817	134,192	138,714
1993 s	14	759	773	1%	99%	50,044	1,308	48,582	70	49,960	54,762
p	7,914	NA	7,914	100%		93,747	2,729	89,629	1,358	93,716	97,767
s&p	7,928	759	8,687	65%	35%	143,791	4,037	138,211	1,428	143,676	152,529
1994 s	267	703	970	10%	90%	64,658	1,827	62,717	55	64,599	70,326
p	7,061	NA	7,061	100%		95,903	3,596	90,332	1,903	95,831	99,822
s&p	7,328	703	8,031	64%	36%	160,561	5,423	153,049	1,958	160,430	170,148
1995 s	191	665	856	7%	93%	51,517	1,762	48,903	821	51,486	55,290
p	6,760	NA	6,760	100%		85,997	4,568	76,670	4,726	85,964	88,617
s&p	6,951	667	7,616	65%	35%	137,104	6,330	125,573	5,547	137,450	143,907
1996 s	219	631	850	11%	89%	50,843	1,388	48,747	522	50,657	54,092
p	7,198	NA	7,198	100%		99,511	3,493	92,590	3,295	99,378	101,972
s&p	7,417	631	8,048	70%	30%	150,354	4,881	141,337	3,817	150,035	156,064
1997 s	286	847	1,133	10%	90%	80,961	2,439	78,188	177	80,804	85,578
p	9,086	NA	9,086	100%		151,387	5,336	145,881	155	151,372	154,467
s&p	9,372	847	10,219	69%	31%	231,517	7,775	224,069	332	232,176	240,045
1998 s	272	738	1,010	13%	87%	63,633	1,751	61,268	507	63,526	66,838
p	10,006	NA	10,006	100%		143,027	6,583	134,299	2,100	142,982	143,027
s&p	10,278	738	11,016	73%	27%	206,769	8,334	195,567	2,607	206,508	209,865

-continued-

Appendix F.5. (page 2 of 2)

Year	Permits Issued			Reported Catch <sup>a</sup>			Reported Catch by Species			Total Salmon Catch	
	Dip Net	Wheel	Total	% Dip Net	Wheel	Total	Chinook	Sockeye	Coho	Reported	Estimated
1999 <sup>s</sup>	336	766	1,104	12%	88%	76,633	3,058	72,901	292	76,251	80,947
<sup>p</sup>	9,943	NA	9,943	100%		145,612	5,755	137,729	2,095	145,579	149,877
<sup>s&amp;p</sup>	10,279	766	11,047	70%	30%	222,245	8,813	210,630	2,387	221,830	230,824
2000 <sup>c</sup> <sup>g</sup>	464	787	1,251	14%	86%	63,739	4,782	58,241	511	63,534	64,885
<sup>c</sup>	8,151	NA	8,151	100%		110,095	3,037	103,329	3,540	109,906	114,681
<sup>g&amp;c</sup>	8,615	787	9,402	69%	31%	173,834	7,819	161,570	4,051	109,906	179,566
2001 <sup>g</sup>	408	832	1,240	10%	90%	80,618	3,254	76,337	1,027	80,618	87,268
<sup>c</sup>	9,462	NA	9,462	100%		122,445	2,731	117,440	2,274	122,445	139,152
<sup>g&amp;c</sup>	9,870	832	10,702	64%	36%	203,063	5,985	193,777	3,301	203,063	226,420
2002 <sup>d</sup> <sup>g</sup>	460	662	1,122	14%	86%	51,747	3,406	47,722	524	51,747	56,605
<sup>c<sup>d</sup></sup>	6,805	NA	6,805	100%		79,710	1,763	75,881	1,761	79,710	86,314
<sup>g&amp;c<sup>d</sup></sup>	7,265	662	7,927	66%	34%	131,457	5,169	123,603	2,285 #	131,457	142,919

<sup>a</sup> Includes all reported species

<sup>b</sup> Subsistence dip net catch estimated

<sup>c</sup> Personal use changed to subsistence in 2000

<sup>d</sup> Preliminary.

1984 - 1999

s = subsistence

p = personal use

s&p = total catch

2000 - 2002

g = Glennalen Subdistrict

c = Chitina Subdistrict

g&c = total catch

Appendix F.6. "Home Pack" salmon harvest by district, species and gear type, Prince William Sound Management Area, 2002.

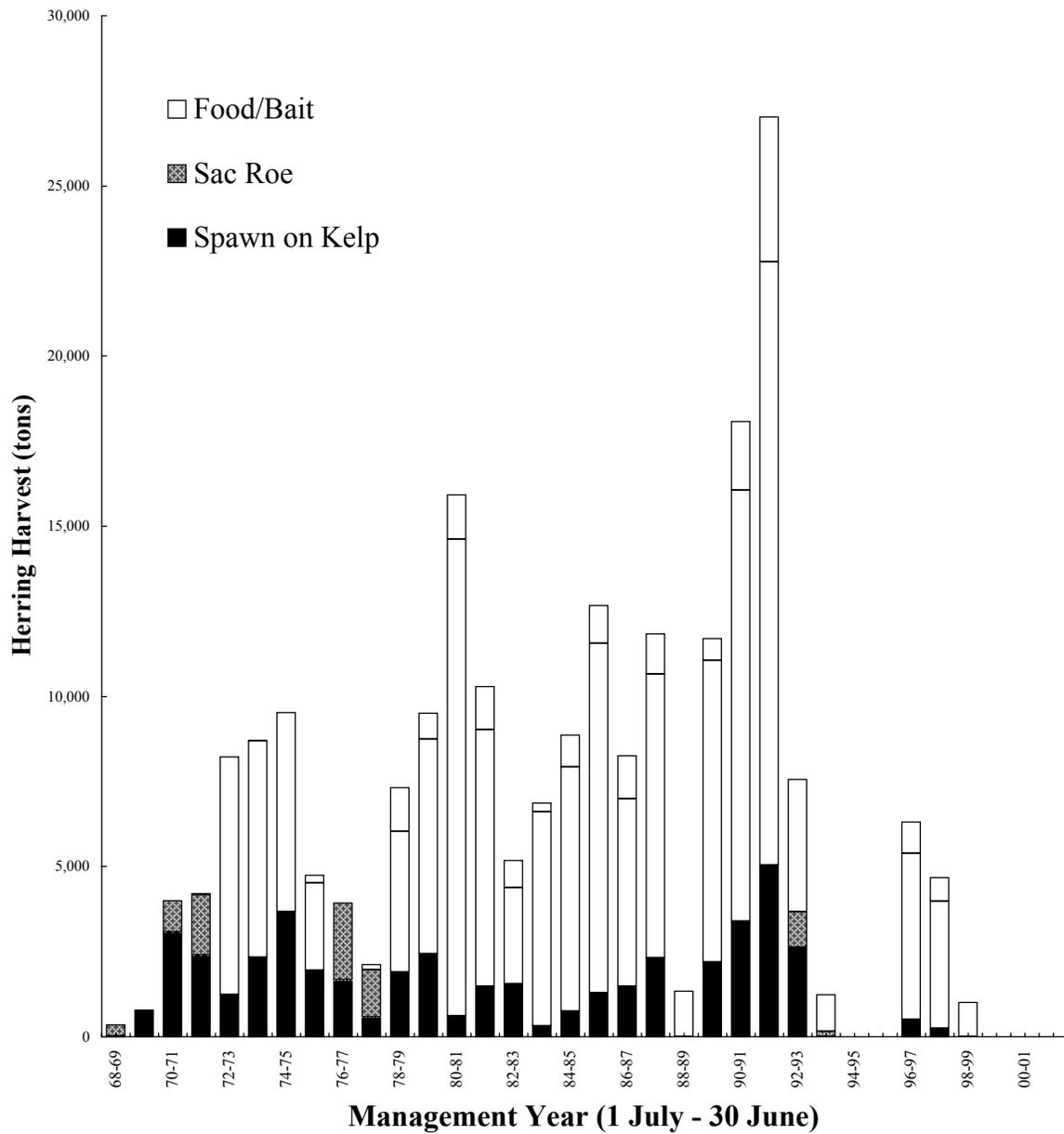
District	Permits	Landings	Gear					
			Type	Chinook <sup>a</sup>	Sockeye	Coho	Pink	Chum
Copper River	247	427	Drift gillnet	773	1,138	187	0	26
Bering River	0	0	Drift gillnet	0	0	0	0	0
PWS <sup>b</sup>	13	14	Drift and set gillnet, purse seine	11	56	0	0	0
<b>Total</b>	<b>260</b>	<b>441</b>		<b>784</b>	<b>1,194</b>	<b>187</b>	<b>0</b>	<b>26</b>

<sup>a</sup> In 1994 the BOF passed regulation 5 AAC 24.356 requiring all chinook salmon taken in the Copper River and Bering River Districts, but not sold, be reported on fish tickets.

<sup>b</sup> Coghill, Eshamy, and Southwestern Districts.

## **APPENDIX G: HERRING FISHERIES**



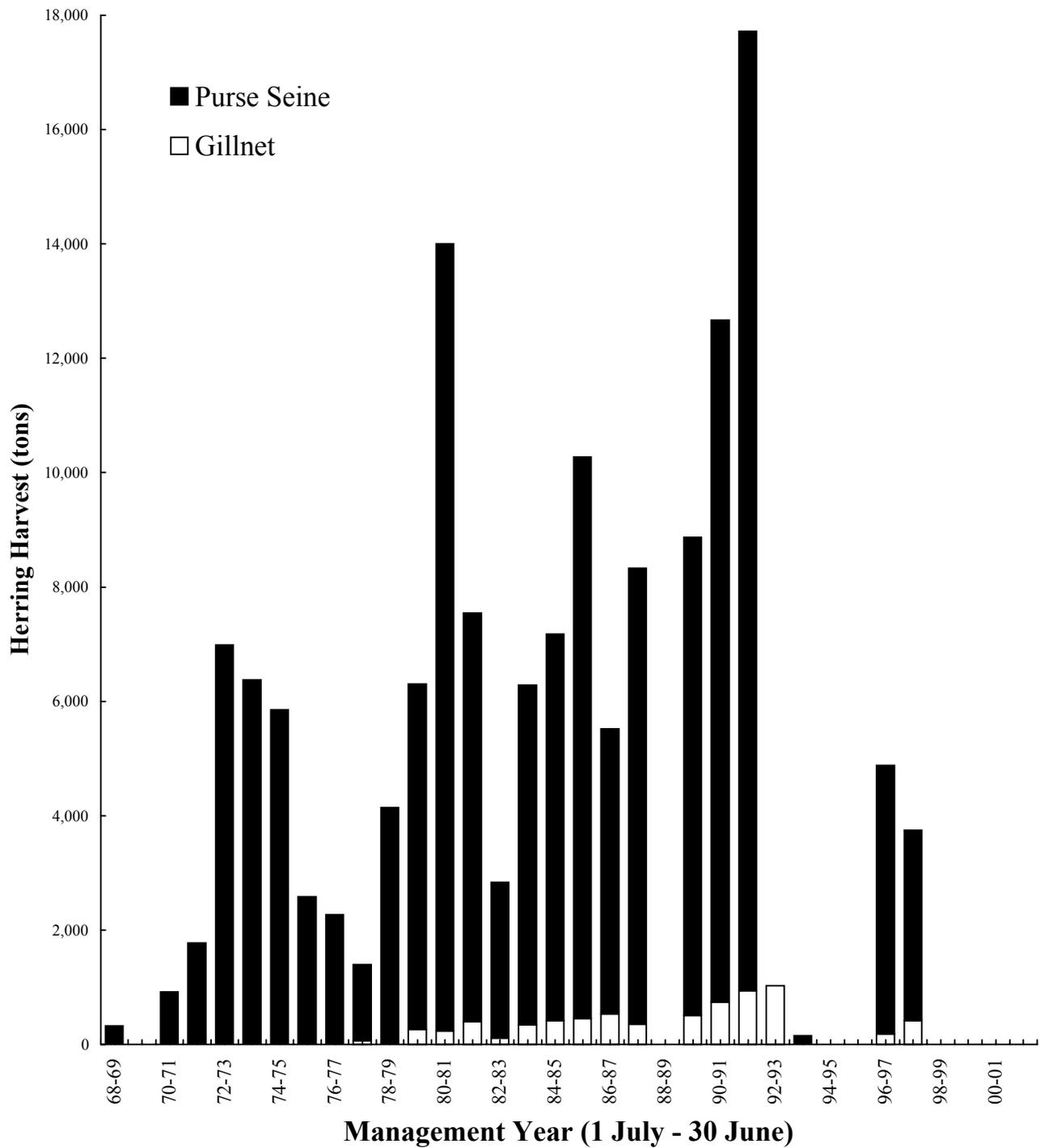


Appendix G.2. Prince William Sound commercial Pacific herring harvest by management year and fishery, 1968-2002.

Appendix G.3. Pacific herring sac roe purse seine and drift gillnet fishery effort, anticipated harvest, and actual harvest, Prince William Sound, 1969-2002.

Calendar Year	Purse Seine Fishery						Drift Gillnet Fishery						Total		
	Opening Dates	Hours	Effort (Boats)	Guideline Harvest <sup>a</sup>	Harvest (tons)	CPUe (tons/Boat Hr)	Estimated Roe %	Opening Dates	Hours	Effort (Boats)	Guideline Harvest <sup>a</sup>	Harvest (tons)	CPUe (tons/Boat Hr)	Estimated Roe %	Harvest (tons)
1969	3/01 - 6/30		5		325.4										325.4
1970	3/01 - 6/30														919.2
1971	3/01 - 6/30		12		919.2										1,777.2
1972	3/01 - 6/30		18		1,777.2										6,991.9
1973	4/23 - 5/09		31		6,991.9										6,374.8
1974	4/10 - 4/17		72		6,371.0			4/10 - 4/17	14.0	3		3.8			5,853.8
1975	4/15 - 4/22		76		5,853.8	5.50									2,584.2
1976	5/08 & 6/01		66		2,584.2	3.01		4/09 - 04/10	38.0	1		1.6	0.04		2,267.1
1977	4/09 - 4/10		58		2,265.6	1.03		4/17 - 04/21	106.0	38		61.7	0.02		1,391.2
1978	4/17 - 4/21 <sup>b</sup>		75		1,329.5	0.17		CLOSED <sup>c</sup>							4,138.0
1979	4/07 - 4/19		89		5,000	0.22		4/17 - 5/05		16	264.4				6,306.7
1980	4/01 - 4/09		76		5,000	0.49		4/16 - 4/18	53.0	18	234.5		0.25		14,002.8
1981	4/01 - 4/09		106		5,000	2.16		4/24 - 4/26	54.0	18	393.9		0.41	12-15%	7,542.2
1982	4/23		95		5,000	37.62	10-14%	4/21 - 4/22	24.0	22	105.4		0.20	11.0%	2,833.9
1983	4/13		1.0	103 <sup>d</sup>	5,000	26.49	11.0%	4/18 - 4/22	59.0	23	342.7		0.25	8-14%	6,288.8
1984	4/14		3.0	105 <sup>e</sup>	5,000	18.88	10-11%	4/29 - 5/01	34.0	21	250	413.3	0.58	10-12%	7,177.4
1985	4/28 - 4/29		4.0	103 <sup>f</sup>	5,000	16.42	10-12%	4/24 - 4/28	90.0	24	3-400	448.6	0.21	11.4%	10,276.7
1986	4/17		3.0	106	5-7,000	30.91	11.0%	4/10 - 4/11	24.0	24	2-300	533.3	0.93	9.5%	5,515.5
1987	4/08 - 4/09		1.5	96	3-5,000	34.60	10.0%	4/23	5.5	24	275	353.0	2.67	10.0%	8,330.3
1988	4/21 - 4/22		2.0	105	4-5,000	37.99	10.5%								0.0
1989	Season Closed <sup>g</sup>				6,400										8,867.5
1990	4/12		0.3	96	6,038	290.35	10.0%	4/13	4.0	24	353	505.4	5.26	10.6%	12,665.1
1991	4/09, 4/10, & 4/19		1.3	104	11,233	85.32	10.5%	4/18	10.5	24	657	742.0	2.94	11.06%	17,724.8
1992	4/13, 4/17, & 4/21		2.0	104	14,100	16,784.2 <sup>i</sup>	10.0%	4/23 - 4/24	11.0	24	825	940.6	3.56	10.8%	1,029.9
1993	No Harvest				15,586	80.69		4/15, 4/17-4/19	36.0	24	912	1,029.9	1.19	11.01%	151.0
1994	Season Closed <sup>j</sup>				0	151.0 <sup>k</sup>					0				0.0
1995	Season Closed <sup>j</sup>				0						0				0.0
1996	Season Closed <sup>j</sup>				0						0				0.0
1997	4/13, 4/15		1.8	71	2,965	36.80	9.75%	4/09	2.5	22	175	175.7	3.19	8.00%	4,879.2
1998	4/06		0.5	46	3,367	144.77	9.6%	4/11, 4/12	6.5	20	197	415.1	3.19	11.0%	3,744.8
1999	Season Closed <sup>j</sup>				3,447						202				0.0
2000	Season Closed <sup>j</sup>				0						0				0
2001	Season Closed <sup>j</sup>				0						0				0
2002	Season Closed <sup>j</sup>				0						0				0

<sup>a</sup> Guideline harvest based on preseason harvest projection beginning in 1986.  
<sup>b</sup> An additional opening on 6/14 for 6 hours resulted in no harvest.  
<sup>c</sup> Drift gillnet fishery closed by Board of Fisheries action.  
<sup>d</sup> Of 103 permit holders participating, 72 actually made deliveries.  
<sup>e</sup> Of 105 permit holders participating, 101 actually made deliveries.  
<sup>f</sup> Of 103 permit holders participating, 62 made deliveries at Montague Island and 90 made deliveries in the north-shore area.  
<sup>g</sup> All Pacific herring commercial sac roe and spawn-on-keep fisheries in PWS were closed during the spring of 1989 due to the potential for contamination from the TV Exxon Valdez oil spill.  
<sup>h</sup> Total for 1991 includes a 92.2 ton test fishing set made by ADF&G for aerial survey calibration.  
<sup>i</sup> Total for 1992 includes a 192.5 ton test fishing harvest made by ADF&G for aerial survey calibration.  
<sup>j</sup> Season closed due to low herring abundance.  
<sup>k</sup> Harvest for 1994 consisted of a single test fishing harvest made by ADF&G for aerial survey calibration.



Appendix G.4. Prince William Sound commercial Pacific herring sac roe purse seine and gillnet harvest by management year, 1968-2002.

Appendix G.5. Pacific herring spawn-on-kelp harvests from natural spawning, Prince William Sound, 1969 - 2002.

Calendar Year	Fishery Dates	Hours	Effort No. of Divers	Guideline Harvest tons	Harvest by Kelp Species and Grounds Price (\$/lb)				Spawn-on-Kelp Harvest		Herring Utilized <sup>a</sup> tons
					Percent	Price	Ribbon	Sieve	Fucus	Other	
1969	5/18-5/31		3								21.7
1970	4/19-6/06		34							5,424	2.7
1971	4/18-5/15		159							190,374	95.2
1972	4/30-5/20		397							769,481	384.7
1973	4/23-5/26		176							600,453	300.2
1974	4/22-5/04		143							306,358	153.2
1975	4/25-5/10		328							580,588	290.3
1976	4/21- ?		279							916,919	458.5
1977	4/27-12/31		104							485,043	242.5
1978	4/20-4/30		66							417,000	208.5
1979	4/25-5/03		97							141,268	70.6
1980	4/23-4/30	10	458							474,242	237.1
1981	4/25	12	196							603,880	301.9
1982	5/05-5/08	73	152							122,532	61.3
1983	4/27	12	185							291,430	145.7
1984	Season Closed <sup>d</sup>		225 <sup>e</sup>							298,362	149.2
1985	5/06 & 5/08	20	106							60,832	30.4
1986	4/30-5/03	86	29							95,205	47.6
1987	4/15-4/17	44	59							176,485	88.2
1988	4/29 & 4/30	12	159							194,762	97.4
1989	Season Closed <sup>f</sup>		110								
1990	4/21-4/22	16	134							237,575	118.8
1991	5/11-5/17	95	48							215,147	107.6
1992	4/24-4/30	101	217							504,663	252.3
1993	4/19-4/24	114	83							325,181	162.6
1994	Season Closed <sup>g</sup>		110								
1995	Season Closed <sup>g</sup>										
1996	Season Closed <sup>g</sup>										
1997	4/25 & 4/26	26.4	45							52,800	26.4
1998	4/22-4/27	62	35							34,695	17.3
1999	Season Closed <sup>g</sup>		475								
2000	Season Closed <sup>g</sup>										
2001	Season Closed <sup>g</sup>										
2002	Season Closed <sup>g</sup>										

<sup>a</sup> Indicates the annual removal of reproductive capacity from the population based on the assumption that average fish roe recovery is 10%, and 80% of spawn-on-kelp harvest weight consists of eggs.

<sup>b</sup> Hair kelp.

<sup>c</sup> Mostly *Macrocystis*. Some hair kelp.

<sup>d</sup> Season remained closed due to lack of suitable spawn.

<sup>e</sup> Permits issued.

<sup>f</sup> All Pacific herring commercial sac roe and spawn-on-kelp fisheries in Prince William Sound were closed during the spring of 1989 due to the potential for contamination of catches from the T/V Exxon Valdez oil spill.

<sup>g</sup> Season remained closed due to low herring abundance.

Appendix G.6. Pacific herring spawn-on-kelp harvest produced in pounds, Prince William Sound, 1979 - 2002.

Calendar Year	Fishery Dates <sup>c</sup>	Effort				Guideline Harvest (tons)		Blades per Permit Holder			Spawn-on-Kelp Harvest (tons)		Herring Utilized <sup>b</sup> (tons)
		CFEC Permits <sup>d</sup>	Permits Committed <sup>e</sup>	Producing Permits <sup>a</sup>	Open <sup>g</sup>	Harvest (tons)	Closed <sup>f</sup>	Open <sup>g</sup>	Closed <sup>f</sup>	Open <sup>g</sup>	Ribbon	Macrocyctis	
1979		2	0										
1980	4/14	14	4	2	2	8				0.9	0.4	1.3	16.6
1981	4/14	18	18	7	7	16				8.6	1.1	9.7	120.7
1982	4/29-5/10	25	20	18	18	26				25.1	0.5	25.5	319.2
1983	4/30-5/04	47	38	26	26	26				17.7	10.1	27.7	346.7
1984	4/24-5/08	65	45	37	37	26				6.4	18.8	25.2	315.1
1985	4/25-5/07	81	59	50	50	40				12.1	28.1	40.2	502.1
1986	4/21-4/28	104	82	81	81	60				0	72.2	72.2	903.0
1987	4/10-4/21	111	111	108	108	85				0	61.2	61.2	765.1
1988	4/12-4/23	122	122	119	119	85				0	123.2	123.2	1,540.5
1989	Season Closed <sup>h</sup>												
1990	4/11-4/26	128	128	122	122	118				0	98.8	98.8	1,235.3
1991	4/07-4/20	126	126	119	119	220	1200			0	202.4	202.4	2,530.5
1992	4/07-4/24	127	127	127	127	276	1770			0	242.2	242.2	3,027.7
1993	4/10-4/22	128	124	52	52	305	1950			0	106.4	106.4	1,330.5
1994	Season Closed <sup>i</sup>												
1995	Season Closed <sup>i</sup>												
1996	Season Closed <sup>i</sup>												
1997	4/10-5/6	128	116	7	84	725	410	640		0	34.3	34.3	290.5
1998	j	128	36	13	20	823	425	660		0	10.7	10.7	104.3
1999	k	128	27	7	2	843	435	680		0	6.2	6.2	48.8
2000	Season Closed <sup>i</sup>												
2001	Season Closed <sup>i</sup>												
2002	Season Closed <sup>i</sup>												

<sup>a</sup> Number of permits that were successful in producing spawn-on-kelp product. Due to the group cooperation in this fishery production is frequently reported for a few individuals whose pounds did not produce spawn-on-kelp product.

<sup>b</sup> The equivalent harvest of Pacific herring due to stress mortality and the removal of reproductive capacity from the population based on the assumption that 12.5 tons of Pacific herring are used to produce 1 ton of spawn-on-kelp product.

<sup>c</sup> Dates that the fishery was opened to purse seines for the capture and placement of Pacific herring into pounds.

<sup>d</sup> Prior to 1994, Commissioner's permits issued to applicants registering prior to the March 1 deadline. After 1994, the number of permits represents limited entry permits. Beginning in 1997, permit holders were allowed to operate pounds in open or closed configuration, and required to state intended configuration prior to season.

<sup>e</sup> The number of individuals receiving an equal allocation of the guideline harvest. Prior to 1994 this represents the number of individual pounds constructed by the April 1 deadline. Beginning in 1997, this number represents permit holders stating intended configuration prior to season.

<sup>f</sup> A pound fished in a closed configuration consists of a rectangular floating frame with webbing suspended below, that encloses herring and kelp for period of time during spawning. A pound fished in an open configuration consists of a rectangular floating frame with either no webbing suspended below, or with webbing that permits volitional entry and exit of herring on at least one side.

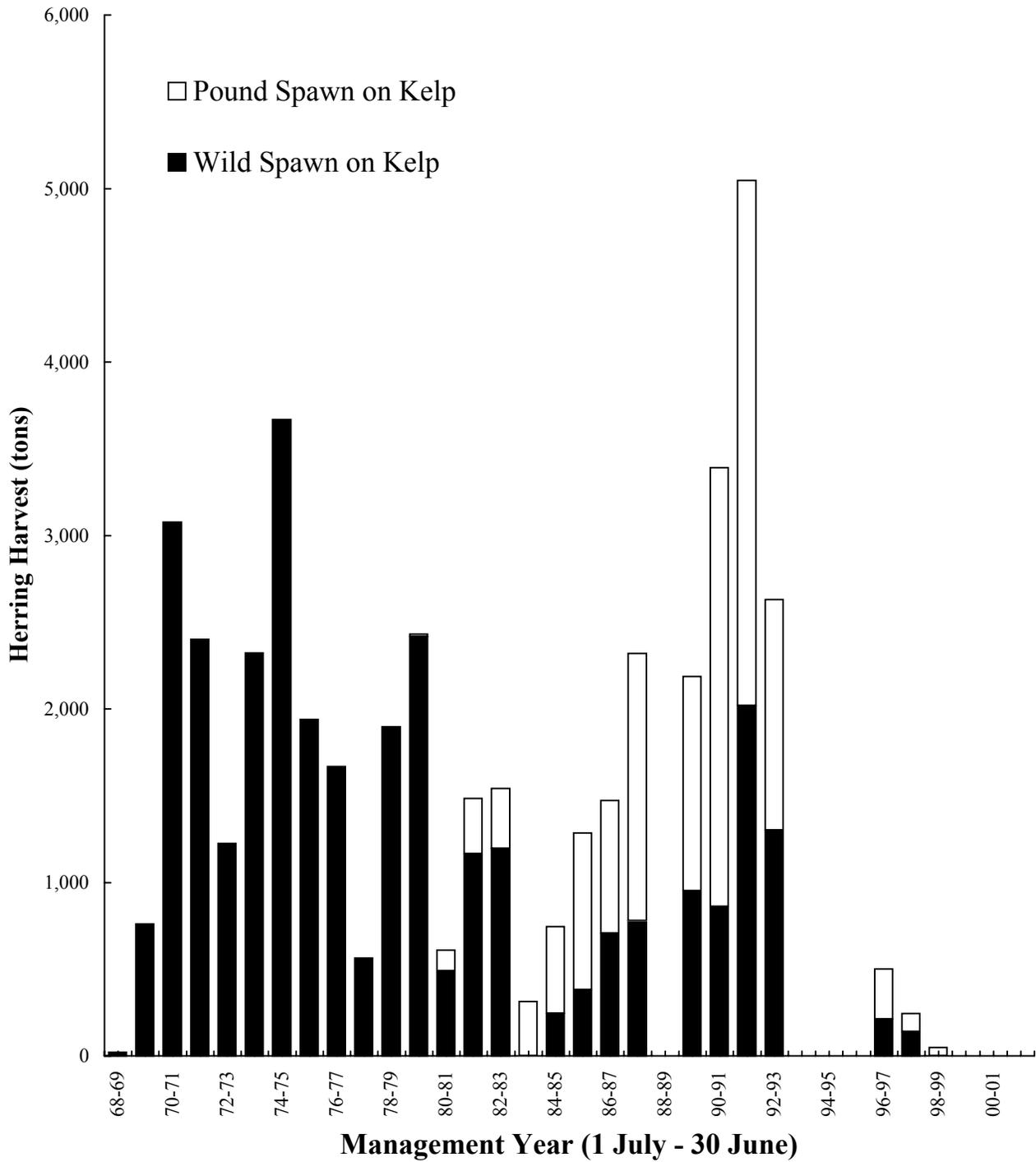
<sup>g</sup> All Pacific herring commercial set roe and spawn-on-kelp fisheries in Prince William Sound were closed during the spring of 1989 due to the potential for contamination from the *T/V Exxon Valdez* oil spill.

<sup>h</sup> Season closed due to low herring abundance.

<sup>i</sup> Opening dates for each area were: Montague Island 4/04, Eastern 4/05, Northern 4/09, and Southeastern 4/13. All areas closed by regulation on 12/31/98.

<sup>j</sup> Opening dates for each area were: Montague Island 04/01, St. Matthews Bay 04/20. All areas closed by emergency order on 04/25/99.

<sup>k</sup> Opening dates for each area were: Montague Island 04/01, St. Matthews Bay 04/20. All areas closed by emergency order on 04/25/99.



Appendix G.7. Prince William Sound commercial spawn-on-kelp Pacific herring usage by management year, 1968-2002.

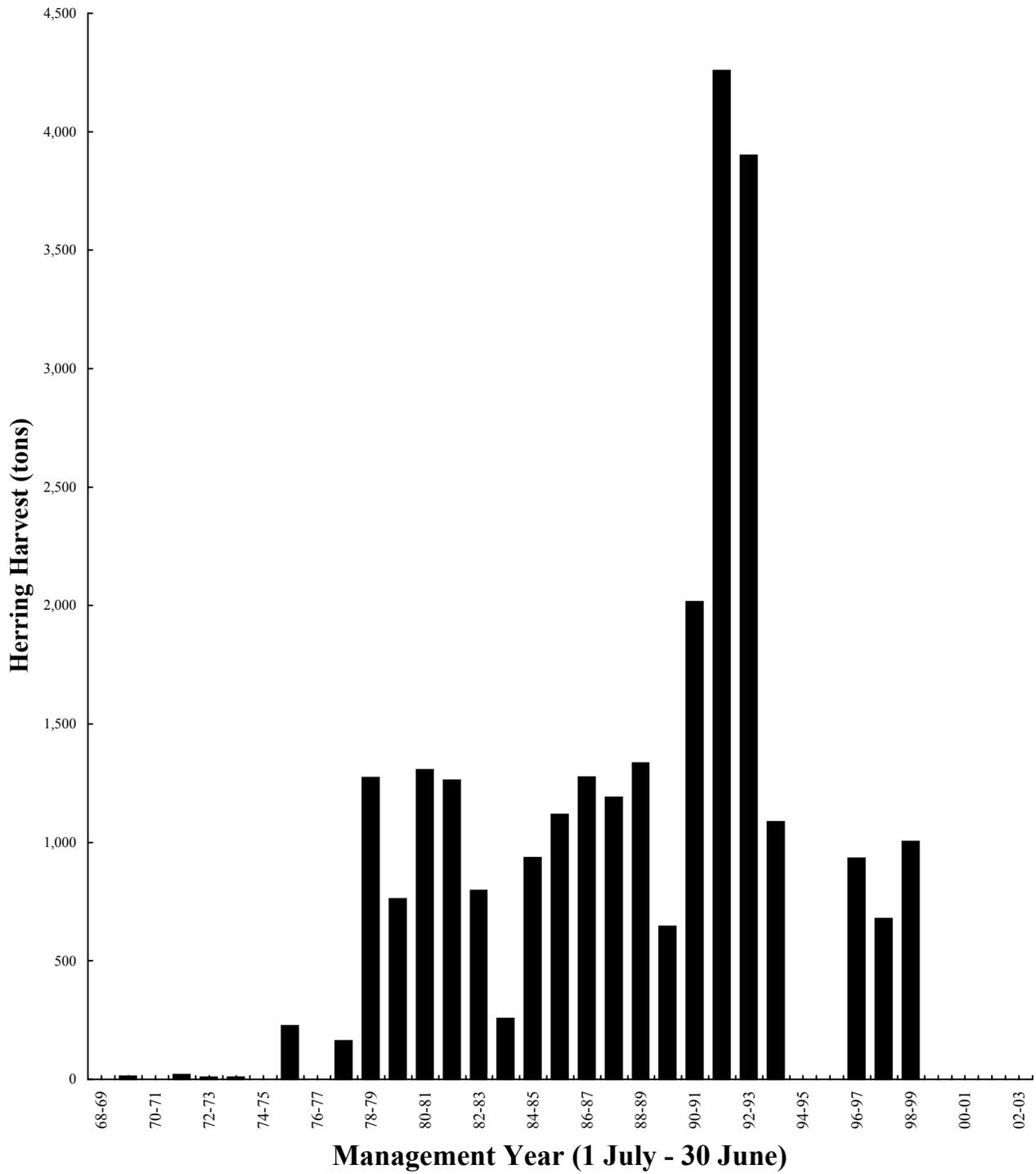
Appendix G.8. Prince William Sound commercial Pacific herring food/bait fishery effort and harvests, management years 1969-2002.

Harvest Management Year	Fishing Dates		Guideline Harvest	Purse Seine		Pair Trawl		Mid-Water Trawl		Otter Trawl		Total Harvest (tons)
	Opened	Closed		Effort (Boats)	Harvest (tons)	Effort (Boats)	Harvest (tons)	Effort (Boats)	Harvest (tons)	Effort (Boats)	Harvest (tons)	
1969-1970	10/01/69	06/30/70 <sup>a</sup>		-	14.0							14.0
1970-1971	10/01/70	06/30/71 <sup>a</sup>										0.0
1971-1972	10/01/71	06/30/72 <sup>a</sup>		-	20.0							20.0
1972-1973	10/01/72	05/09/73 <sup>a</sup>		-	9.0							9.0
1973-1974	08/27/73	04/17/74 <sup>a</sup>	b	-	8.5							8.5
1974-1975	07/15/74	03/10/75	b									0.0
1975-1976	06/01/75	06/25/75 <sup>c</sup>	b	4	226.7							226.7
1976-1977	02/01/77	03/09/77	b									0.0
1977-1978	10/01/77	02/28/78	b	-	17.0		145.3					162.3
1978-1979	10/16/78	? <sup>d</sup>	b	-	195.4	7	988.7	-	9.4	-	81.0	1,274.4
1979-1980	09/16/79	02/28/80 <sup>e</sup>	1,400	-	510.8	4	145.1	-	103.2	-	2.6	761.7
1980-1981	09/15/80	11/07/80	1,400	-	1,030.4	6	275.7					1,306.1
1980-1982	09/15/81	09/30/81	1,400	7	1,189.4	-	73.1					1,262.5
1982-1983	09/15/82	01/31/83	1,400	6	797.3							797.3
1983-1984	09/15/83	01/31/84	1,400	-	257.6							257.6
1984-1985	09/15/84	01/31/85	1,400	-	936.2							936.2
1985-1986	09/01/85	02/15/86	1,400	6	1,118.1							1,118.1
1986-1987	09/01/86	10/24/86	1,400	6	1,276.2							1,276.2
1987-1988	09/02/87	11/12/87 <sup>f</sup>	1,400	7	1,189.4							1,189.4
1988-1989	11/01/88	11/05/88	1,400	8	1,335.3							1,335.3
1989-1990	11/01/89	01/31/90	1,694	-	646.1							646.1
1990-1991	09/21/90	11/24/90 <sup>g</sup>	3,151	5	1,955.0				60.8			2,015.9
1991-1992	10/01/91	10/14/91	3,956	14	4,258.5							4,258.5
1992-1993	10/01/92	10/22/92	3,416 <sup>h</sup>	17	3,900.3							3,900.3
1993-1994	10/07/93	10/10/93	978 <sup>i</sup>	8	1,087.0							1,087.0
1994-1995		Season Closed <sup>j</sup>										0.0
1995-1996		Season Closed <sup>j</sup>										0.0
1996-1997	11/01/96	11/03/96	825	6	933.9							933.9
1997-1998 <sup>k</sup>	11/1/97,2/19/98	02/28/98	945	12	679.7							679.7
1998-1999	11/02/98	11/06/98	967	11 <sup>l</sup>	1,003.3							1,003.3
1999-2000		Season Closed <sup>j</sup>										0.0
2000-2001		Season Closed <sup>j</sup>										0.0
2001-2002		Season Closed <sup>j</sup>										0.0
2002-2003		Season Closed <sup>j</sup>										0.0

-continued-

## Appendix G.8. (page 2 of 2)

- <sup>a</sup> Openings set by regulation. Ending date coincides with regulatory ending of sac roe season.
- <sup>b</sup> No official quota, but unofficial goal was 1,500 tons.
- <sup>c</sup> Harvest from special June food-and-bait fishery opening. Although this harvest actually occurred at the end of the 1975 management year, it is included in the 1976 harvest management year to be consistent with other food-and-bait harvests which occur after spring sac roe fisheries.
- <sup>d</sup> Fishery closed from 1 January to 6 January 1979.
- <sup>e</sup> Fishery closed from 1 January to 15 February 1980.
- <sup>f</sup> Fishing season opened by regulation on September 1, 1987 in the District. The north-shore and east-shore Pacific herring districts opened on September 23. The season was closed by emergency order on October 6 for a period of five weeks, reopened on November 9, and closed for the duration of the 1987-88 season on November 12, 1987.
- <sup>g</sup> Fishery open from September 21 until November 24. The Montague Island area was open from September 24 until November 24.
- <sup>h</sup> Preseason guideline harvest level based on spawn deposition biomass estimate. Final guideline harvest based on age-structured analysis was issued in January 1993 and was 4,373 tons.
- <sup>i</sup> Preseason guideline harvest level based on preliminary aerial survey biomass estimate of 40,000 tons.
- <sup>j</sup> Season closed due to low herring abundance.
- <sup>k</sup> Season reopened in spring 1998 based on final age structured assessment modelling. Of the total harvest, 578.1 tons were taken in November 1997 and 101.6 tons were taken in February 1998.
- <sup>l</sup> Includes sale from ADF&G test fishing near Knowles Head, 31 October 1998.



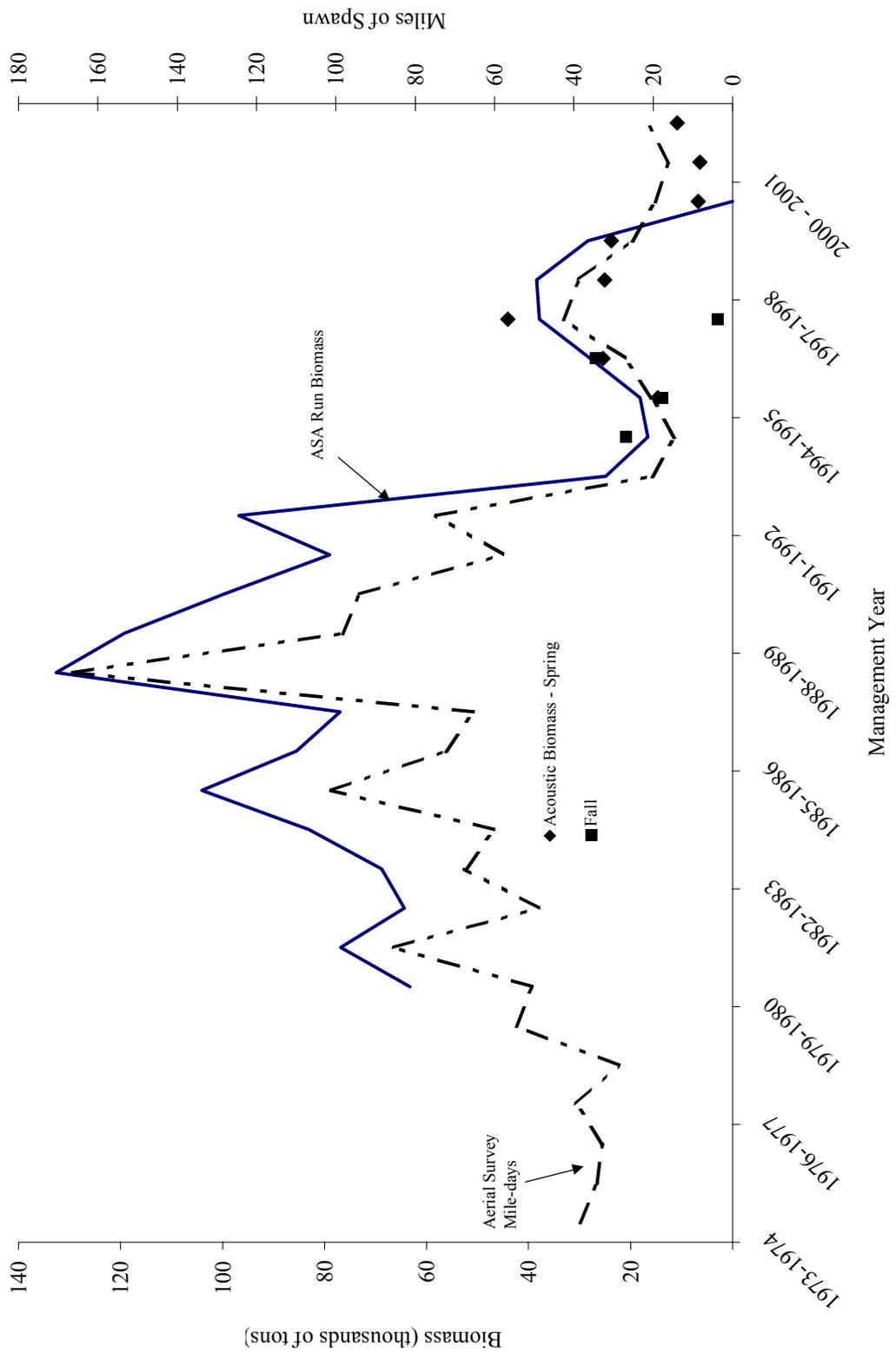
Appendix G.9. Prince William Sound commercial food/bait Pacific herring harvest, management years 1968-2002.



---

Appendix G.10. (page 2 of 2)

- <sup>e</sup> The sum of the daily observed linear miles of Pacific herring spawn.
- <sup>f</sup> Estimates are made from underwater surveys of spawn deposition.
- <sup>g</sup> Unexploited escapement and run biomass estimates from age structured analysis, February 1998.
- <sup>h</sup> Partial estimate of spawning biomass from feasibility study.
- <sup>i</sup> All Pacific herring commercial sac roe and spawn-on-kelp fisheries in Prince William Sound were closed during the spring of 1989 due to the potential for contamination of catches from the *7/1/ Exxon Valdez* oil spill.

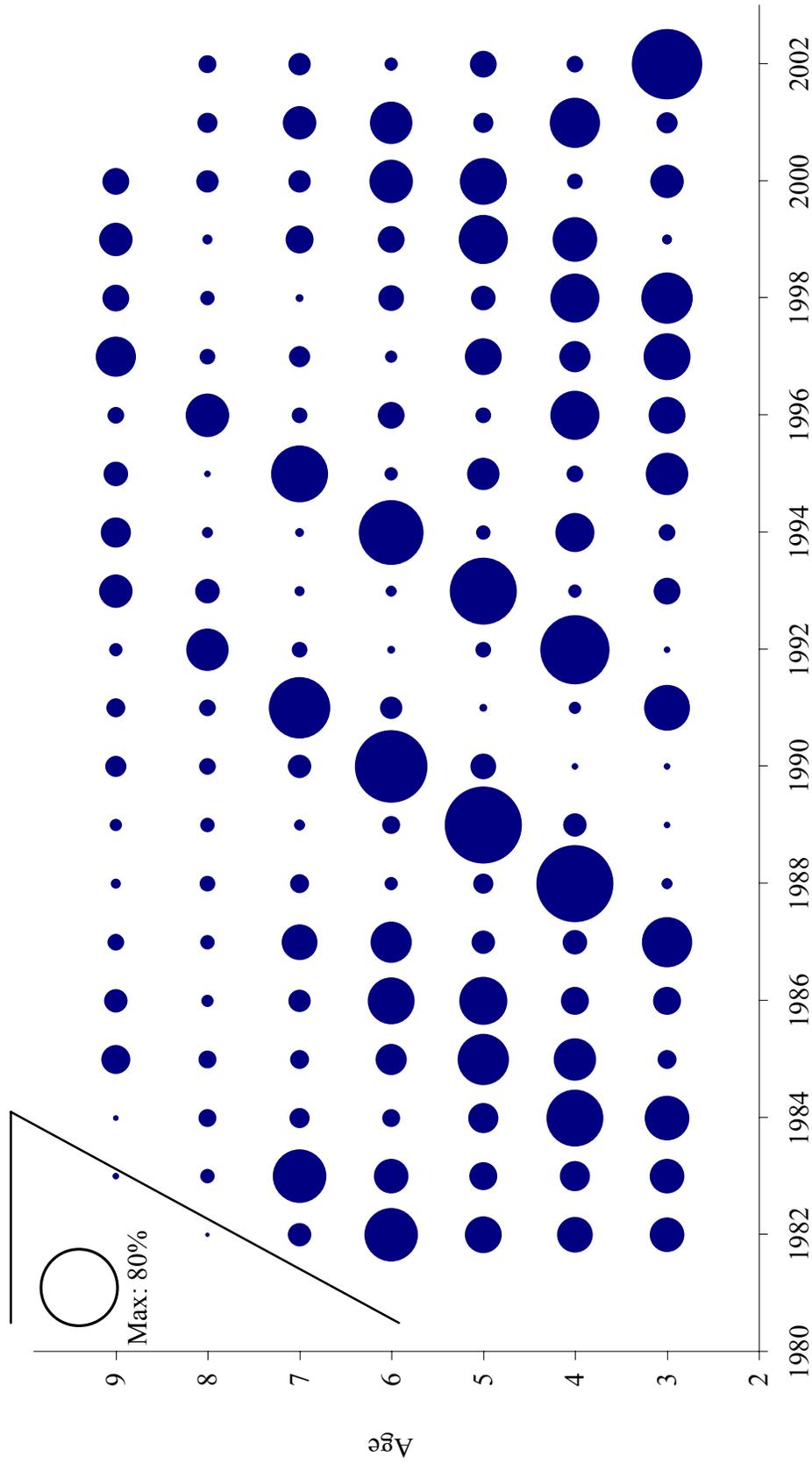


Appendix G.11. Prince William Sound annual Pacific herring biomass indices by management year, 1973-2002, and forecast run biomass for 2000 from ASA modeling.

Appendix G.12. Mean price and estimated exvessel value of the commercial Pacific herring harvest by gear type based on verbal post season estimates from processors and permit holders, 1978-2002.

Calendar Year	Sac Roe Fisheries				Spawn on Kelp Fisheries				Food-and-Bait Fishery			
	Purse Seine		Drift Gillnet		Wild Spawn on Kelp		Pounds		Mixed Gear		TOTAL	
	Price per ton	Total Value	Price per ton	Total Value	Price per lb	Total Value	Price per lb <sup>a</sup>	Total Value	Price per ton	Total Value	Price per ton	Total Value
1978	\$ 720	\$ 956,800			\$ 1.25	\$ 175,000			\$ 380	\$ 489,820		\$ 1,621,700
1979	\$ 1,260	\$ 5,213,880			\$ 1.74	\$ 821,280			\$ 300	\$ 196,800		\$ 6,231,960
1980	\$ 320	\$ 1,933,760			\$ 1.09	\$ 667,080			\$ 300	\$ 424,800		\$ 3,025,640
1981	\$ 400	\$ 5,508,000	\$ 580	\$ 135,720	\$ 1.00	\$ 122,000			\$ 260	\$ 328,120		\$ 6,093,840
1982	\$ 380	\$ 2,716,240	\$ 640	\$ 251,520	\$ 1.29	\$ 397,320			\$ 220	\$ 194,260		\$ 3,559,340
1983	\$ 600	\$ 1,634,400	\$ 1,040	\$ 109,200	\$ 2.10	\$ 634,200			\$ 260	\$ 70,980		\$ 2,448,780
1984	\$ 760	\$ 4,435,360	\$ 640	\$ 218,880	NO HARVEST		\$ 3.50	\$ 176,439	\$ 260	\$ 265,460		\$ 5,096,139
1985	\$ 760	\$ 5,380,800	\$ 900	\$ 371,700	\$ 0.48	\$ 19,200	\$ 7.09	\$ 569,058	\$ 250	\$ 279,500		\$ 6,620,258
1986	\$ 820	\$ 8,058,960	\$ 920	\$ 412,160	\$ 1.70	\$ 159,800	\$ 8.00	\$ 1,155,200	\$ 180	\$ 229,680		\$ 10,015,800
1987	\$ 1,100	\$ 5,480,200	\$ 960	\$ 511,680	\$ 1.70	\$ 299,200	\$ 15.00	\$ 1,836,000	\$ 300	\$ 356,700		\$ 8,483,780
1988	\$ 840	\$ 6,600,000	\$ 1,400	\$ 537,000	\$ 1.20	\$ 232,000	\$ 18.00	\$ 4,500,000	\$ 300	\$ 400,590		\$ 12,236,500
1989					SEASON CLOSED				\$ 300	\$ 193,830		\$ 193,830
1990	\$ 640	\$ 5,351,744	\$ 640	\$ 323,456	\$ 0.90	\$ 213,840	\$ 11.40	\$ 2,305,080	\$ 300	\$ 605,130		\$ 8,799,250
1991	\$ 600	\$ 7,153,800	\$ 600	\$ 445,200	\$ 0.80	\$ 172,160	\$ 9.00	\$ 2,880,000	\$ 250	\$ 1,064,625		\$ 11,715,785
1992	\$ 400	\$ 6,713,680	\$ 800	\$ 752,480	\$ 0.46	\$ 232,116	\$ 8.00	\$ 3,875,200	\$ 200	\$ 780,060		\$ 12,353,536
1993	NO HARVEST		\$ 400	\$ 411,960	\$ 0.55	\$ 178,860	\$ 10.00	\$ 2,000,000	\$ 200	\$ 217,400		\$ 2,808,220
1994					SEASON CLOSED							SEASON CLOSED
1995					SEASON CLOSED							SEASON CLOSED
1996					SEASON CLOSED				\$ 200	\$ 187,000		\$ 187,000
1997	\$ 200	\$ 940,600	\$ 80	\$ 14,080	\$ 0.61	\$ 32,000	\$ 8.00	\$ 426,816	\$ 250	\$ 170,000		\$ 1,583,496
1998	\$ 300	\$ 999,000	\$ 375	\$ 156,000	\$ 0.65	\$ 23,000	\$ 5.00	\$ 107,000	\$ 295	\$ 296,000		\$ 1,581,000
1999					SEASON CLOSED							SEASON CLOSED
2000					SEASON CLOSED							SEASON CLOSED
2001					SEASON CLOSED							SEASON CLOSED
2002					SEASON CLOSED							SEASON CLOSED

<sup>a</sup> The price per pound for spawn on kelp in pounds is based on the final product weight, not harvest weight.



Appendix G.13. Pacific herring percentage contribution by weight of each age group to the spring run biomass, 1982-2002.



---

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. Fairfield Drive, Suite 300, 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) 907-465-4120, (TDD) 907-465-3646, or (FAX) 907-465-2440.

---