



PRINCE WILLIAM SOUND SALMON TAGGING RESEARCH, 1982

By:
Michael L. McCurdy

August 1983

ADF&G TECHNICAL DATA REPORTS

This series of reports is designed to facilitate prompt reporting of data from studies conducted by the Alaska Department of Fish and Game, especially studies which may be of direct and immediate interest to scientists of other agencies.

The primary purpose of these reports is presentation of data. Description of programs and data collection methods is included only to the extent required for interpretation of the data. Analysis is generally limited to that necessary for clarification of data collection methods and interpretation of the basic data. No attempt is made in these reports to present analysis of the data relative to its ultimate or intended use.

Data presented in these reports is intended to be final, however, some revisions may occasionally be necessary. Minor revisions will be made via errata sheets. Major revisions will be made in the form of revised reports.

PRINCE WILLIAM SOUND SALMON TAGGING RESEARCH, 1982

By

Michael L. McCurdy
Research Project Leader

Alaska Department of Fish and Game
Division of Commercial Fisheries
Cordova, Alaska 99574

August 1983

TABLE OF CONTENTS

	<u>Page</u>
LIST OF TABLES	i
LIST OF FIGURES	iii
ABSTRACT	iv
INTRODUCTION	1
MATERIALS AND METHODS	1
RESULTS	3
DISCUSSION	11
ACKNOWLEDGMENTS	54
LITERATURE CITED	55

LIST OF TABLES

<u>Table</u>	<u>Page</u>
1. Tagging summary by species for the Valdez Fisheries Development Association Solomon Gulch hatchery, Port Valdez, Prince William Sound, 1982	4
2. Tagging summary by species for the Alaska Department of Fish and Game FRED Division Cannery Creek hatchery, Unakwik Inlet, Prince William Sound, 1982	5
3. Tagging summary by species for Prince William Sound Aquaculture Corporation proposed Esther Island hatchery, Prince William Sound, 1982	6
4. Tagging summary by species for the Alaska Department of Fish and Game FRED Division Main Bay hatchery, Prince William Sound, 1982	7
5. Tagging summary by species for Prince William Sound Aquaculture Corporation Port San Juan hatchery, Prince William Sound, 1982	
6. Tagging summary by species for all hatcheries, sites, and dates, Prince William Sound, 1982	10
7. Number of salmon tagged and recovered, by species, tagging site and date, and percent of the total recovered by recovery area, for the Valdez Fisheries Development Association Solomon Gulch hatchery, Prince William Sound, 1982	13
8. Number of salmon tagged and recovered, by species, tagging site and date, and percent of the total recovered by recovery area, for the Alaska Department of Fish and Game FRED Division, Cannery Creek hatchery, Prince William Sound, 1982	16
9. Number of salmon tagged and recovered, by species, tagging site and date, and percent of the total recovered by recovery area, for the Prince William Sound Aquaculture Corporation proposed Esther Island hatchery, Prince William Sound, 1982	23
10. Number of salmon tagged and recovered, by species, tagging site and date, and percent of the total recovered by recovery area, for the Alaska Department of Fish and Game FRED Division, Main Bay hatchery, Prince William Sound, 1982	30
11. Number of salmon tagged and recovered, by species, tagging site and date, and percent of the total recovered by recovery area, for the Prince William Sound Aquaculture Corporation San Juan hatchery, Prince William Sound, 1982	36

LIST OF TABLES (Continued)

<u>Table</u>	<u>Page</u>
12. Summary of pink salmon tagging within the Prince William Sound Aquaculture Corporation Port San Juan hatchery special harvest area, 1982	48
13. Summary of first recapture data of tagged pink salmon, by experiment date, for the Prince William Sound Aquaculture Corporation Port San Juan hatchery, special harvest area, 1982	49
14. Summary of second recapture data of tagged pink salmon, by experiment date, for the Prince William Sound Aquaculture Corporation Port San Juan hatchery special harvest area, 1982	50
15. Summary of third recapture data of tagged pink salmon, by experiment date, for the Prince William Sound Aquaculture Corporation Port San Juan hatchery special harvest area, 1982	51
16. Summary of tagged pink salmon recoveries at the Prince William Sound Aquaculture Corporation Port San Juan hatchery, based on hatchery sales fish catches and brood-stock recoveries, by tag site and date, Prince William Sound, 1982	52
17. Summary of Cannery Creek pink salmon hatchery stock interceptions, based on stream recoveries of tagged fish in Cannery Creek, by tag site and date, Prince William Sound, 1982	53

LIST OF FIGURES

<u>Figure</u>		<u>Page</u>
1.	Prince William Sound management area	2
2.	Location of the Valdez Fisheries Development Association Solomon Gulch hatchery and associated tagging sites, Prince William Sound, 1982	12
3.	Location of the Alaska Department of Fish and Game FRED Division Cannery Creek hatchery and associated tagging sites, Prince William Sound, 1982	15
4.	Location of the Prince William Sound Aquaculture Corporation Esther Island hatchery and associated tagging sites, Prince William Sound, 1982	22
5.	Location of the Alaska Department of Fish and Game FRED Division Main Bay hatchery and associated tagging sites, Prince William Sound, 1982	29
6.	Location of the Prince William Sound Aquaculture Corporation Port San Juan hatchery and associated tagging sites, Prince William Sound, 1982	35

ABSTRACT

In 1982 a tag and tag recovery program was conducted by the Alaska Department of Fish and Game on adult Pacific salmon (*Oncorhynchus* sp) in Prince William Sound. The program's short-term objective was to determine temporal and spatial relationships of wild and hatchery stocks in the general areas of existing and proposed hatcheries. The long-term objective is to provide the Department with a basis for developing management techniques preventing both under and overharvesting of either group of fish.

Nearly 9,200 salmon were tagged with labeled and sequentially numbered red Peterson disc tags. Salmon were captured with a purse seine operated from a chartered fishing vessel. Tag recovery was from the commercial fishery and spawning ground surveys; about 1,350 tags were recovered. A second phase of this program consisted of tagging pink salmon in the Prince William Sound Aquaculture Corporation Port San Juan hatchery special harvest area; the purpose of the tagging was to determine if any wild stocks were being intercepted as hatchery sales or brood fish. A total of 1,000 fish were tagged with labeled and sequentially numbered yellow Peterson disc tags. Tag recovery was from the commercial fishery, the hatchery operations, and stream surveys. A total of 434 tags were recovered.

Five hatcheries were involved in this study; twenty-one tagging sites were used.

KEY WORDS: tag and tag recovery, adult salmon, wild and hatchery stocks, temporal and spatial occurrences, existing and proposed hatcheries.

INTRODUCTION

At present, most wild Pacific salmon (*Oncorhynchus* sp) stocks in Prince William Sound (Figure 1) are highly productive; stocks that suffered the depletive effects of the 1964 earthquake are increasing through favorable environmental factors and protective management practices. In conjunction with this upward trend in wild stock production, there is also a successful salmon hatchery program in Prince William Sound. The advent of this hatchery program presents a complex problem to the area fishery manager. It is very difficult to successfully manage for both wild and hatchery returns having similar timing and migration routes, but supporting different exploitation rates. At present, Alaska Department of Fish and Game (ADF&G) policy dictates that "if complexities arise in managing mixed stocks, including both hatchery and wild fish, it will be State policy to manage the collective resources in a manner that favors protection of the wild stocks." (ADF&G 1978). However, in reality, the resource manager must allow the private nonprofit hatchery owners and the common property fishery participants to harvest wild and hatchery returns in a timely manner to: (1) ensure a quality catch, and (2) allow sufficient and timely escapements to wild stock streams and hatcheries.

In order to provide a data base to solve this problem, it was considered necessary to conduct a tag and tag recovery program in the general areas of existing and proposed hatchery sites. The 1982 program involved five different hatcheries, two public and three private nonprofit facilities. The public hatcheries were Cannery Creek and Main Bay; these facilities are operated by the ADF&G Fisheries Rehabilitation, Enhancement, and Development Division (FREDD). The private nonprofit existing or proposed hatcheries are operated or proposed by the following corporations: (1) Solomon Gulch, proposed by the Valdez Fisheries Development Association (VFDA); (2) Esther Island facility, proposed by the Prince William Sound Aquaculture Corporation (PWSAC); and (3) Port San Juan, Evans Island site, operated by PWSAC.

In addition, a separate tagging program was carried out at the PWSAC Port San Juan facility. This program was conducted by PWSAC personnel with Peterson disc tags supplied by ADF&G. The project leader was Richard Mattson. The purpose of this program was to determine if any wild stocks were being intercepted by the seining of hatchery sales fish or the capture in pens of hatchery brood-stock. The project was conducted in the hatchery's special harvest area.

MATERIALS AND METHODS

Salmon for tagging were captured using a purse seine operated from a chartered purse seine vessel. Each fish was tagged with a sequentially numbered 19 mm (3/4 inch) diameter Peterson disc tag. Species was recorded along with tagging site and date. Fish for tagging were captured at established commercial fishery sites only. Tagging was conducted five days a week, Wednesday through Sunday. With the exception of special openings or closures, the Prince William Sound fishery is conducted Monday through Friday. Tagging on weekends was conducted to increase recoveries from stream surveys and hatchery operations. A total of 9,191 tags were applied.

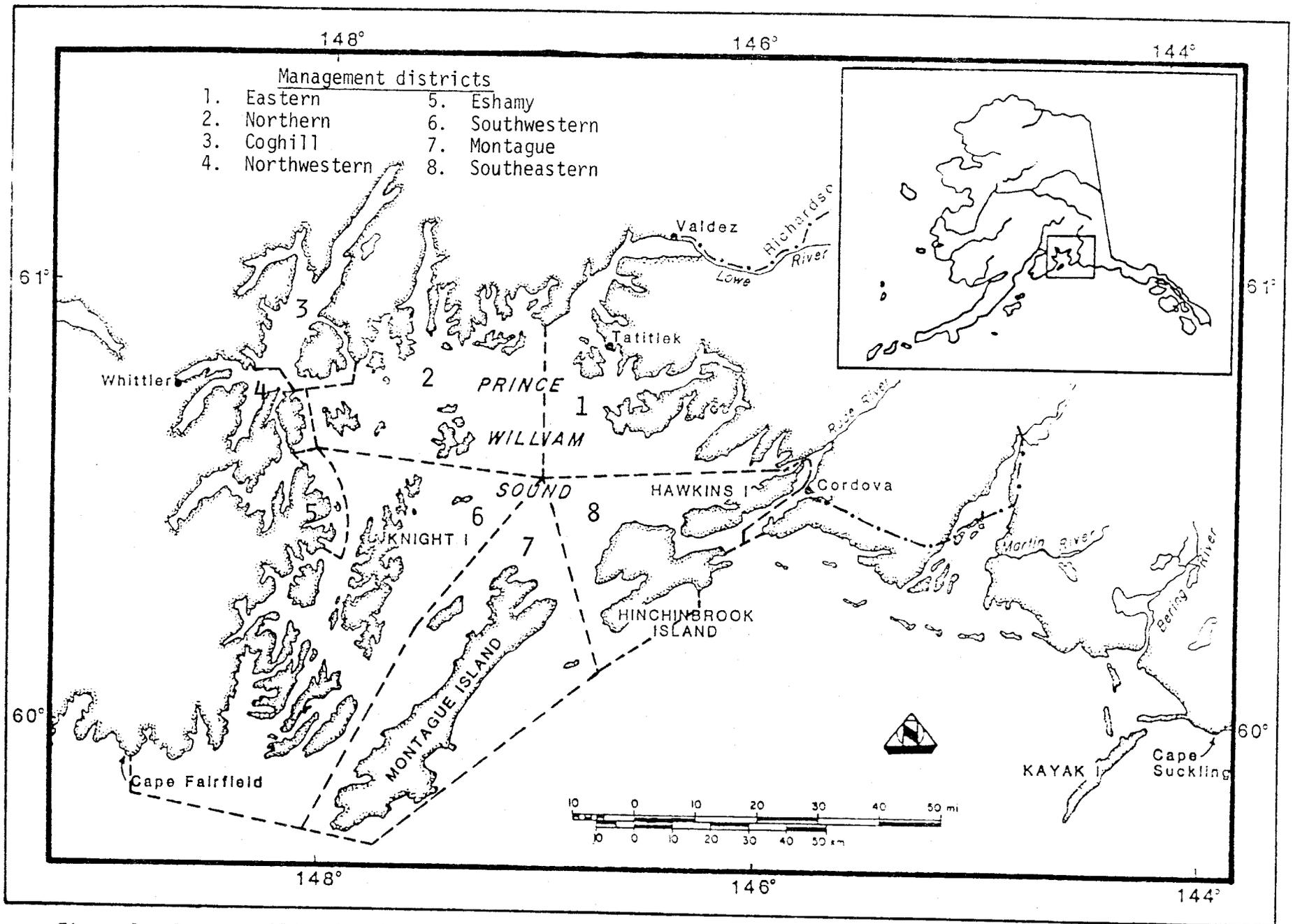


Figure 1. Prince William Sound management area.

Tag recoveries were from the commercial fishery, hatcheries, and spawning ground escapement surveys. Fishermen were provided with data recording forms and were alerted to the program through news releases by the local newspaper and radio station. They were requested to return their recovery data at their earliest convenience. The stream tag recovery segment was conducted by two, two-man Commercial Fisheries Division crews who used the State vessel MONTAGUE as a base of operations. In addition, FRED Division, PWSAC, VFDA, Nerka, Inc., U.S. Forest Service, and Commercial Fisheries Division weir personnel also conducted ground stream surveys. Additional assistance was also given by members of the sport fishing public. This effort resulted in somewhat more than 200 streams being surveyed at least twice for the presence of tagged salmon. A listing of Prince William Sound salmon streams by district and statistical area is given in ADF&G Technical Data Report No. 81.

All data resulting from this program were recorded in the Prince William Sound salmon computer file for future use in fishery management and modeling studies.

Fish for tagging in the PWSAC special harvest area (SHA) were captured via a purse seine operated off of a commercial fishing vessel contracted by PWSAC.

Captured fish were tagged with bright yellow, sequentially numbered, 19 mm (3/4 inch) diameter Peterson disc tags. After the fish were tagged, they were to be allowed to remain in the SHA for a minimum of 48 hours (four full tide cycles); it was the general consensus that if an individual tagged fish did not leave the SHA after that time period, then it should be considered a hatchery fish. If a tagged fish was caught, it was released; this catch and release procedure was followed for the entire 48-hour period. In addition, each time a tagged fish was caught, its tag number and date of recapture was recorded on forms provided by ADF&G.

Tagging was conducted on every third day with 100 tags being applied during that day to one group of fish. Tagging commenced 28 July and ended 24 August. A total of 1,000 tags were applied.

RESULTS

Over the duration of the program, 8 July to 15 August, 21 different sites near the hatcheries involved were used to determine presence of wild and hatchery stocks. By species, 8,170 pink salmon (*O. gorbuscha*), 763 chum salmon (*O. keta*), 236 sockeye salmon (*O. nerka*), and 22 coho salmon (*O. kisutch*) were tagged. No chinook salmon (*O. tshawytscha*) were tagged. Tables 1 through 5 show tagging summaries, by species, tagging site, and date for each of the hatchery sites. Table 6 shows the totals tagged by species.

Tag recovery results for each site and species are presented for each tagging experiment. These results are expressed as percentages of return by district. The percentages are further broken down into catch and individual stream recoveries which represent their respective portions of the total number of recoveries from the experiment involved. The total district figures represent 100% of the recoveries; individual catch and/or stream recoveries do not always add to 100%

Table 1. Tagging summary by species for the Valdez Fisheries Development Association Solomon Gulch hatchery, Port Valdez, Prince William Sound, 1982.

<u>Tagging site</u>	<u>Date</u>	<u>Species</u>					<u>Total</u>
		<u>Chinook</u>	<u>Sockeye</u>	<u>Coho</u>	<u>Pink</u>	<u>Chum</u>	
Jack Bay	8/12	0	0	0	100	5	105
	8/13	0	0	0	96	29	125
	Total	0	0	0	196	34	230
Point Lowe	8/13	0	0	1	70	46	117
	8/15	0	0	1	185	22	208
	Total	0	0	2	255	68	325
20 Mile Beach	8/12	0	0	0	21	9	30
Total		0	0	2	472	111	585

Table 2. Tagging summary by species for the Alaska Department of Fish and Game FRED Division Cannery Creek hatchery, Unakwik Inlet, Prince William Sound, 1982.

Tagging site	Date	Species					Total
		Chinook	Sockeye	Coho	Pink	Chum	
Unakwik Point	7/14	0	14	0	55	5	74
	7/15	0	2	0	162	29	193
	Total	0	16	0	217	34	267
Kiniklik	7/15	0	6	0	150	27	183
	7/28	0	0	0	231	3	234
	Total	0	6	0	381	30	417
Mueller Cove	7/08	0	0	0	1	1	2
	7/29	0	0	0	403	3	406
	Total	0	0	0	404	4	408
Eastside Unakwik Inlet	7/29	0	1	1	45	2	49
	7/30	0	1	0	173	236	410
	Total	0	2	1	218	238	459
Siwash Bay Entrance	7/16	0	0	0	5	12	17
	7/30	0	0	0	15	5	20
	Total	0	0	0	20	17	37
Total		0	24	1	1240	323	1588

Table 3. Tagging summary by species for Prince William Sound Aquaculture Corporation proposed Esther Island hatchery, Prince William Sound, 1982.

Tagging site	Date	Species					Total
		Chinook	Sockeye	Coho	Pink	Chum	
Hodgkins Point	7/10	0	5	0	86	1	92
	7/11	0	12	1	106	49	168
	Total	0	17	1	192	50	260
Eastside Culross Island	7/08	0	37	0	149	39	225
	7/09	0	87	0	227	15	329
	7/10	0	41	1	184	20	246
	7/11	0	4	0	177	69	250
	Total	0	169	1	737	143	1050
Total		0	186	2	929	193	1310

Table 4. Tagging summary by species for the Alaska Department of Fish and Game FRED Division Main Bay hatchery, Prince William Sound, 1982.

<u>Tagging site</u>	<u>Date</u>	<u>Species</u>					<u>Total</u>
		<u>Chinook</u>	<u>Sockeye</u>	<u>Coho</u>	<u>Pink</u>	<u>Chum</u>	
Main Bay	7/31	0	1	2	456	5	464
Crafton Island	7/18	0	2	0	440	19	461
	8/01	0	4	0	423	2	429
	Total	0	6	0	863	21	890
Nellie Juan Light	7/17	0	1	0	48	17	66
Total		0	8	2	1367	43	1420

Table 5. Tagging summary by species for Prince William Sound Aquaculture Corporation Port San Juan hatchery, Prince William Sound, 1982.

Tagging site	Date	Species					Total
		Chinook	Sockeye	Coho	Pink	Chum	
Point Helen	7/24	0	2	3	353	4	362
Prince of Wales Passage	8/07	0	2	0	520	2	524
	8/19	0	0	0	25	0	25
	Total	0	2	0	545	2	549
Shelter Bay	7/23	0	3	0	510	4	517
	7/24	0	0	0	149	2	151
	7/25	0	0	0	185	5	190
	8/06	0	0	0	85	1	86
	8/17	0	1	0	710	0	711
	Total	0	4	0	1639	12	1655
South Knight Island Passage	8/18	0	0	0	93	0	93
Bishop Rock	7/25	0	0	0	150	6	156
	8/04	0	0	0	17	0	17
	Total	0	0	0	167	6	173
Fox Farm	7/21	0	4	0	453	25	482
	7/22	0	1	2	30	1	34
	8/05	0	0	0	62	0	62
	Total	0	5	2	545	26	578
Squirrel Bay	7/22	0	4	4	256	19	283
	8/06	0	0	0	62	3	65
	8/19	0	0	0	10	0	10
	Total	0	4	4	328	22	358

-Continued-

Table 5. Tagging summary by species for Prince William Sound Aquaculture Corporation Port San Juan hatchery, Prince William Sound, 1982 (continued).

<u>Tagging site</u>	<u>Date</u>	<u>Species</u>					<u>Total</u>
		<u>Chinook</u>	<u>Sockeye</u>	<u>Coho</u>	<u>Pink</u>	<u>Chum</u>	
Middle Cape	7/22	0	1	2	89	15	107
	8/05	0	0	3	398	6	407
	8/06	0	0	1	5	0	6
	Total	0	1	6	492	21	520
Total		0	18	15	4162	93	4288

Table 6. Tagging summary by species for all hatcheries, sites, and dates, Prince William Sound, 1982.

	Species					Total
	<u>Chinook</u>	<u>Sockeye</u>	<u>Coho</u>	<u>Pink</u>	<u>Chum</u>	
Total	0	236	22	8170	763	9191

as a result of rounding. Tables 7 through 11 show results of tag recoveries for all the hatchery sites, and Figures 2 through 6 show tagging sites by hatchery.

Summary data for tagging in the PWSAC, SHA are shown on Table 12. Results of first, second, and third recovery data are shown on Tables 13 through 15. This data indicates that few fish occurring in the SHA are bound for other areas; one of the weaknesses in this conclusion is the fact that a lower-than-average recovery rate from the commercial fishery occurred this year. One reason for this lower recovery rate is that many of the fish are now removed from fishing vessels to tenders by a vacuum system; this system eliminates the handling of the fish when transferred to a tender and thus lessens tag recovery effort by fishermen.

DISCUSSION

Tables 16 and 17 show where Cannery Creek and Port San Juan stocks were intercepted. These interceptions were based on stream tag recovery in the case of Cannery Creek; Port San Juan interceptions were based on sales fish catches and brood-stock selections. This type of data presentation will be expanded to all years of the program in the program completion report.

As previously mentioned, overall tag recovery was not as good as hoped for via the commercial fishery. Stream recoveries remained about the same as previous years. A bright spot was the large return of chum salmon; this large return allowed for the tagging of more individuals, thus increasing knowledge via tag recoveries of stocks occurring around the various hatcheries.

It is felt that the PWSAC program should be continued for another three years via a cooperative agreement between the hatchery owner and ADF&G involving manpower and supplies.

As the reader studies the data regarding pink salmon, it will soon become apparent that not only will the area management staff have to manage a particular hatchery for its stocks and wild stocks occurring in the area in question, but will also have to keep in mind that other hatchery stocks are occurring in that particular area at the same time. To what degree this phenomenon occurs in the future and what management problems may arise with pink salmon or other hatchery raised species remains to be seen as the various hatcheries come into full production.

Tables 16 and 17 do, however, give some indication of the distribution of Port San Juan and Cannery Creek stocks. This type of data will be very useful in years when wild stocks are in low abundance. This point is made in Table 16; according to this year's studies, Port San Juan stocks occurred as early as 18 July at Crafton Island and as late as 15 August at Point Lowe, Valdez Arm. The problem of stock identification and distribution is bound to increase as hatchery stock development policy is trending toward terms of season long returns. Currently, existing hatcheries in Prince William Sound have either early and late or late timing only releases.

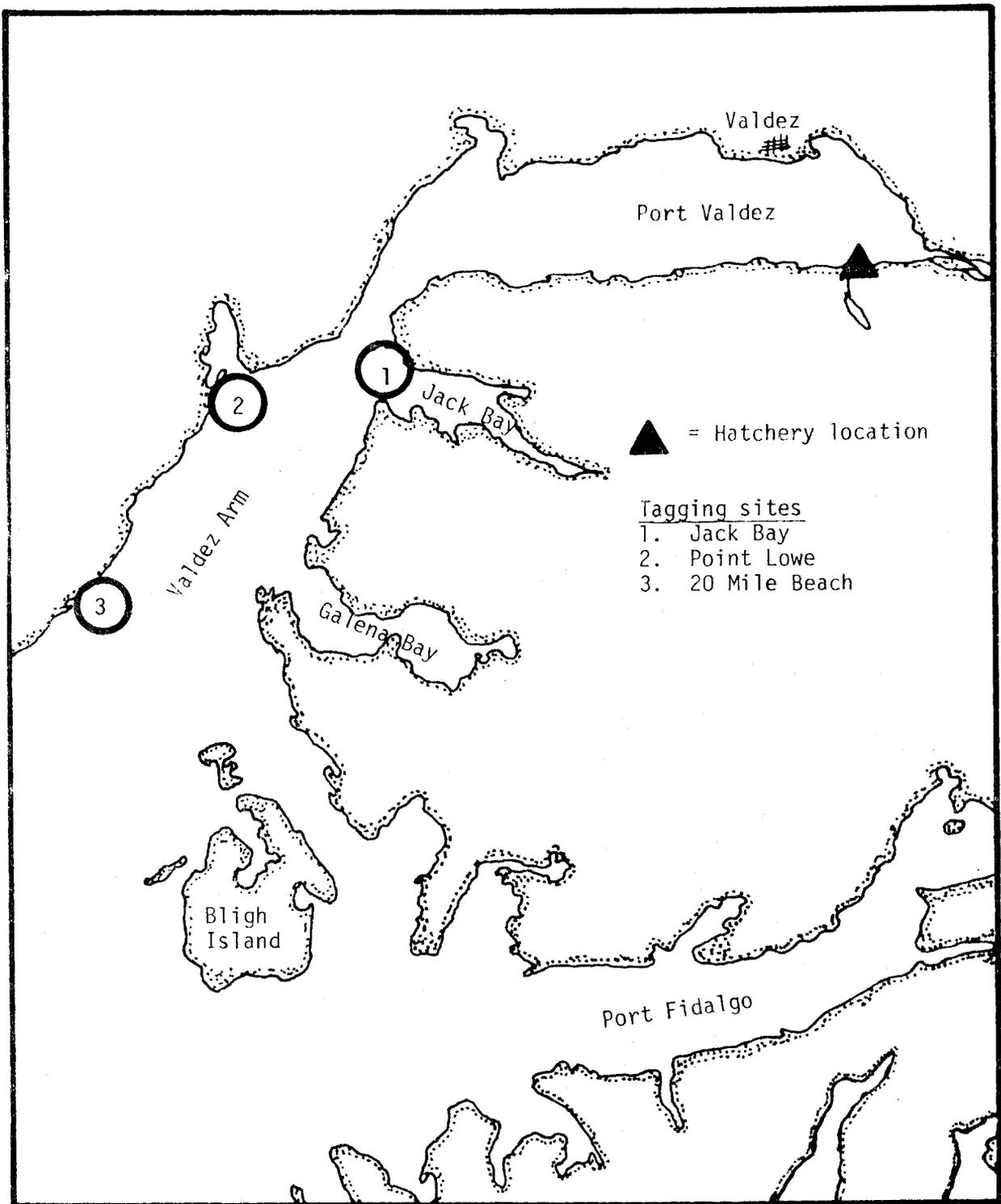


Figure 2. Location of the Valdez Fisheries Development Association Solomon Gulch hatchery and associated tagging sites, Prince William Sound, 1982.

Table 7. Number of salmon tagged and recovered, by species, tagging sites and date, and percent of the total recovered by recovery area, for the Valdez Fisheries Development Association Solomon Gulch hatchery, Prince William Sound, 1982.

Tagging site	Tagging date	Pink Salmon			
		Catch		Escapement	
		Area	%	Stream	%
<u>Jack Bay</u>	8/12				
No. tagged	100				
No. recovered	13				
% recovered	13.0				
<u>District</u>					
Eastern	100.0%	Galena Bay	15.4	Duck River	30.8
		Jack Bay	23.1	Gorge Creek	7.7
		Sawmill/S.Valdez	23.1		
	8/13				
No. tagged	86				
No. recovered	10				
% recovered	11.6				
<u>District</u>					
Eastern	100.0%	Johnson Cove	30.0	Duck River	30.0
		Galena Bay	20.0		
		Sawmill/S.Valdez	20.0		
<u>Point Lowe</u>	8/13				
No. tagged	70				
No. recovered	7				
% recovered	10.0				
<u>District</u>					
Eastern	100.0%	Sawmill/S.Val.	100.0		
	8/15				
No. tagged	185				
No. recovered	14				
% recovered	7.6				
<u>District</u>					
Eastern	92.9%	Johnson Cove	71.4	Gorge Creek	7.1
		Sawmill/S.Valdez	14.3		
Southwestern	7.1%	Sawmill Bay	7.1		
<u>20 Mile Beach</u>	8/12				
No. tagged	21				
No. recovered	2				
% recovered	9.5				
<u>District</u>					
Eastern	100.0%	Johnson Cove	50.0	Stellar Creek	50.0

-Continued-

Table 7. Number of salmon tagged and recovered, by species, tagging sites and date, and percent of the total recovered by recovery area, for the Valdez Fisheries Development Association Solomon Gulch hatchery, Prince William Sound, 1982 (continued).

		<u>Chum Salmon</u>			
Tagging site	Tagging date	Catch		Escapement	
		Area	%	Stream	%
<u>Jack Bay</u>		8/12			
No. tagged	5				
No. recovered	0				
% recovered	0.0				
		8/13			
No. tagged	29				
No. recovered	1				
% recovered	3.4				
<u>District</u>					
Eastern	100.0%			Sunny River	100.0
<u>Point Lowe</u>		8/13			
No. tagged	46				
No. recovered	1				
% recovered	2.2				
<u>District</u>					
Eastern	100.0%			Mineral Creek	100.0
		8/15			
No. tagged	22				
No. recovered	1				
% recovered	4.5				
<u>District</u>					
Eastern	100.0%	Johnson Cove	100.0		
<u>20 Mile Beach</u>		8/12			
No. tagged	9				
No. recovered	0				
% recovered	0.0				
		<u>Coho Salmon</u>			
Tag sites	Tagging dates	Catch		Escapement	
		Area	%	Stream	%
<u>Point Lowe</u>		8/13			
No. tagged	1				
No. recovered	0				
% recovered	0.0				
		8/15			
No. tagged	1				
No. recovered	0				
% recovered	0.0				

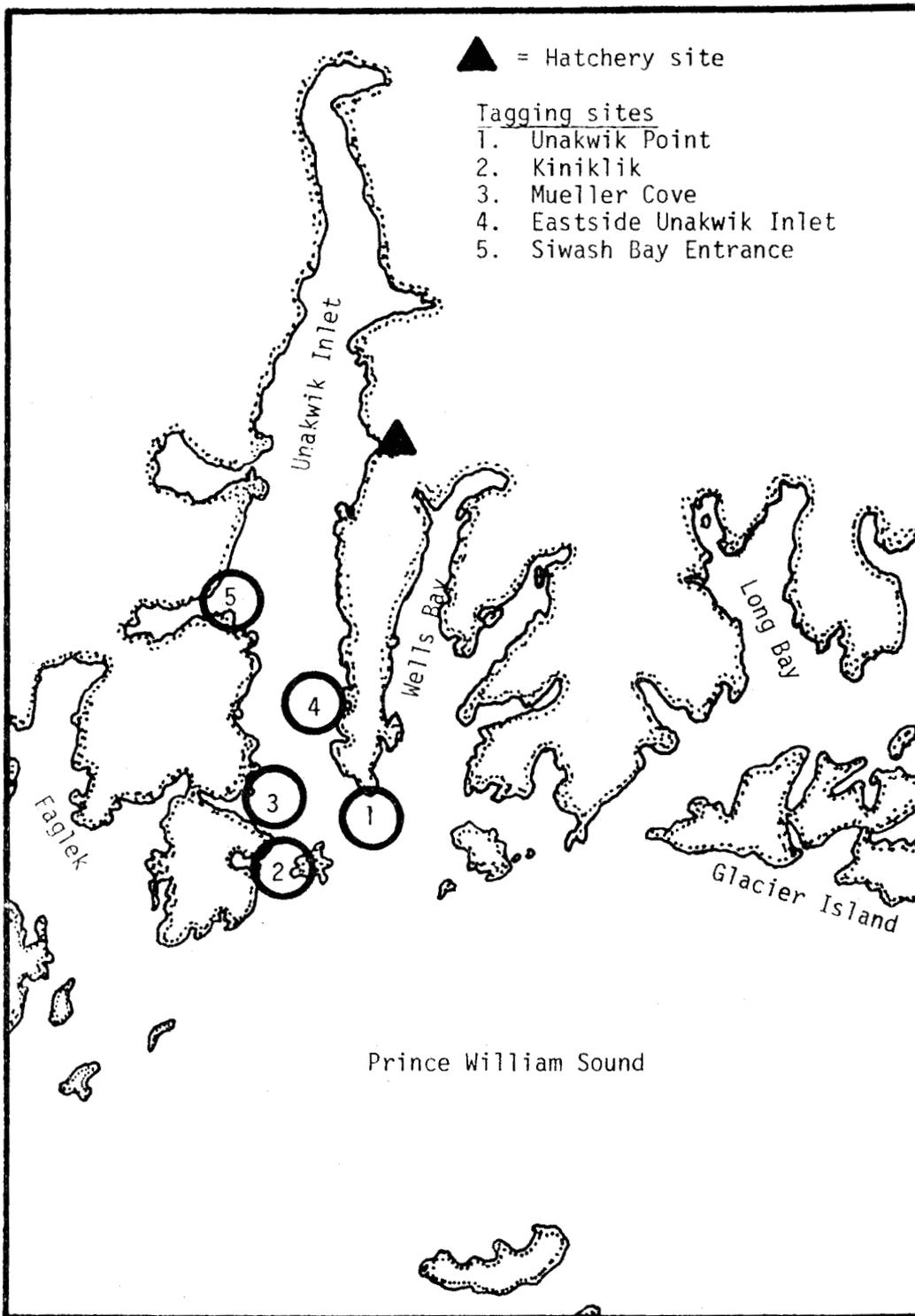


Figure 3. Location of the Alaska Department of Fish and Game FRED Division Cannery Creek hatchery and associated tagging sites, Prince William Sound, 1982.

Table 8. Number of salmon tagged and recovered, by species, tagging sites and date, and percent of the total recovered by recovery area, for the Alaska Department of Fish and Game FRED Division, Cannery Creek hatchery, Prince William Sound, 1982.

Tagging site	Tagging date	Pink Salmon			
		Catch		Escapement	
		Area	%	Stream	%
<u>Unakwik Point</u>	7/14				
No. tagged	55				
No. recovered	5				
% recovered	9.1				
<u>District</u>					
Northern	80.0%	Point Pellew	20.0		
		Jonah Bay	20.0		
		Mid Unakwik Inl.	40.0		
Northwestern	20.0%	Kings Bay	20.0		
No. tagged	162				
No. recovered	29				
% recovered	17.9				
<u>District</u>					
Eastern	6.9%	Sawmill/S.Valdez	3.4	Levshakoff Cr.	3.4
Northern	86.2%	Point Pellew	6.9	Vanishing Creek	6.9
		Jonah Bay	3.4	Cedar Creek	34.5
				Wells River	20.7
				Cannery Creek	3.4
				Jonah Creek	3.4
				Siwash River	6.9
Coghill	3.4%			Triple Creek	3.4
Northwestern	3.4%			Culross Creek	3.4
<u>Kiniklik</u>	7/15				
No. tagged	151				
No. recovered	11				
% recovered	7.3				
<u>District</u>					
Eastern	9.1%			Gorge Creek	9.1
Northern	63.6%	Jonah Bay	9.1	Vanishing Cr.	18.2
		Mid Unakwik Inl.	9.1	Cedar Creek	9.1
				Unakwik Creek	18.2
Coghill	9.1%			Hummer Creek	9.1
Northwestern	18.2%	Eastside Culross	9.1	Tebenkof Creek	9.1

-Continued-

Table 8. Number of salmon tagged and recovered, by species, tagging sites and date, and percent of the total recovered by recovery area, for the Alaska Department of Fish and Game FRED Division, Cannery Creek hatchery, Prince William Sound, 1982 (continued).

Tagging site	Tagging date	Pink Salmon			
		Catch		Escapement	
		Area	%	Stream	%
Kiniklik (Continued)	7/17				
No. tagged	11				
No. recovered	0				
% recovered	0.0				
	7/28				
No. tagged	231				
No. recovered	33				
% recovered	14.3				
District					
Eastern	9.1%	Galena Bay	3.0	Levshakoff Cr.	3.0
		Sawmill/S.Valdez	3.0		
Northern	72.7%	Fairmont Point	3.0	Eickelberg Cr.	3.0
		Kiniklik	9.1	Backyard Cr.	3.0
		Point Pellew	6.1	Wells River	9.1
		Axel Lind Is.	3.0	Cannery Creek	18.2
		Siwash Bay	3.0	Jonah Creek	3.0
		Long Bay	3.0	Cowpen Creek	6.1
		Mid Unakwik Inlet	3.0		
Coghill	9.1%			Mill Creek	3.0
				Chasm Creek	3.0
				Triple Creek	3.0
Northwestern	3.0%			Culross Creek	3.0
Southwestern	6.1%	E. Chenega Is.	3.0		
		E. Latouche Is.	3.0		
Mueller Cove	7/08				
No. tagged	1				
No. recovered	0				
% recovered	0.0				
	7/29				
No. tagged	402				
No. recovered	60				
% recovered	14.9				
District					
Northern	93.3%	Granite Point	1.7	Vanishing Creek	1.7
		Fairmont Point	3.3	Delta Creek	1.7
		Wells Bay	1.7	Surplus Creek	1.7
		Unakwik Point	5.0	Wells River	5.0
		Kiniklik	8.3	Cannery Creek	20.0
		Point Pellew	8.3	Jonah Creek	3.3
		Siwash Bay	1.7	Siwash River	10.0
		Mid Unakwik Inlet	8.3	Unakwik Creek	6.7
		Cannery Cr. HHA	3.3	Cowpen Creek	1.7

-Continued-

Table 8. Number of salmon tagged and recovered, by species, tagging sites and date, and percent of the total recovered by recovery area, for the Alaska Department of Fish and Game FRED Division, Cannery Creek hatchery, Prince William Sound, 1982 (continued).

Tagging site	Tagging date	Pink Salmon			
		Area	Catch %	Stream	Escapement %
<u>Mueller Co. (Continued)</u>					
<u>District</u>					
Coghill	3.3%			Triple Creek	1.7
				Coghill River	1.7
Southwestern	1.7%	Fleming/Bain- bridge/Countess	1.7		
<u>Eastside Unakwik Inlet</u>					
	7/29				
No. tagged	46				
No. recovered	8				
% recovered	17.4				
<u>District</u>					
Northern	100.0%	Granite Point	12.5	Jonah Creek	12.5
		Cedar Bay	12.5	Siwash River	12.5
		Point Pellew	12.5		
		Siwash Bay	12.5		
		Mid Unakwik In.	12.5		
		Cannery Cr. HHA	12.5		
	7/30				
No. tagged	173				
No. recovered	19				
% recovered	11.0				
<u>District</u>					
Northern	94.7%	Kiniklik	10.5	Cedar Creek	5.3
		Siwash Bay	10.5	Cannery Creek	26.3
		Cannery Cr. HHA	21.1	Jonah Creek	21.1
Eshamy	5.3%			Eleshansky Cr.	5.3
<u>Siwash Bay Entrance</u>					
	7/16				
No. tagged	5				
No. recovered	2				
% recovered	40.0				
<u>District</u>					
Northern	50.0%			Cannery Creek	50.0
Northwestern	50.0%			Chimevisky Cr.	50.0
	7/30				
No. tagged	15				
No. recovered	0				
% recovered	0.0				

-Continued-

Table 8. Number of salmon tagged and recovered, by species, tagging sites and date, and percent of the total recovered by recovery area, for the Alaska Department of Fish and Game FRED Division, Cannery Creek hatchery, Prince William Sound, 1982 (continued).

Tagging site	Tagging date	Chum Salmon			
		Catch		Escapement	
		Area	%	Stream	%
<u>Unakwik Point</u>	7/14				
No. tagged	5				
No. recovered	1				
% recovered	20.0				
<u>District</u>					
Northern	100.0%	Point Pellew	100.0		
No. tagged	29				
No. recovered	5				
% recovered	17.2				
<u>District</u>					
Eastern	20.0%	Galena Bay	20.0		
Northern	60.0%			Cedar Creek	20.0
				Wells River	40.0
Coghill	20.0%	Esther/College	20.0		
<u>Kiniklik</u>	7/15				
No. tagged	27				
No. recovered	3				
% recovered	11.1				
<u>District</u>					
Northern	100.0%	Wells Bay	33.3		
		Point Pellew	33.3		
		Mid Unakwik In.	33.3		
No. tagged	4				
No. recovered	0				
% recovered	0.0				
No. tagged	3				
No. recovered	0				
% recovered	0.0				
<u>Mueller Cove</u>	7/08				
No. tagged	1				
No. recovered	0				
% recovered	0.0				
No. tagged	4				
No. recovered	0				
% recovered	0.0				

-Continued-

Table 8. Number of salmon tagged and recovered, by species, tagging sites and date, and percent of the total recovered by recovery area, for the Alaska Department of Fish and Game FRED Division, Cannery Creek hatchery, Prince William Sound, 1982 (continued).

Tagging site	Tagging date	Chum Salmon			
		Catch		Escapement	
		Area	%	Stream	%
<u>Eastside Unakwik Inlet</u>	7/29				
No. tagged	2				
No. recovered	1				
% recovered	50.0				
<u>District</u>					
Coghill	100.0%	Esther/College	100.0		
No. tagged	236				
No. recovered	16				
% recovered	6.8				
<u>District</u>					
Northern	100.0%	Siwash Bay	6.3	Cedar Creek	6.3
				Cannery Creek	12.5
				Jonah Creek	31.3
				Siwash River	43.8
<u>Siwash Bay Entrance</u>	7/16				
No. tagged	12				
No. recovered	3				
% recovered	25.0				
<u>District</u>					
Northern	66.7%	Jonah Bay	33.3	Wells River	33.3
Coghill	33.3%	Esther/College	33.3		
No. tagged	5				
No. recovered	1				
% recovered	20.0				
<u>District</u>					
Northern	100.0%			Siwash River	100.0

-Continued-

Table 8. Number of salmon tagged and recovered, by species, tagging sites and date, and percent of the total recovered by recovery area, for the Alaska Department of Fish and Game FRED Division, Cannery Creek hatchery, Prince William Sound, Alaska (continued).

<u>Sockeye Salmon</u>						
Tagging site	Tagging date	Catch		Escapement		
		Area	%	Stream	%	
<hr/>						
<u>Unakwik Point</u>	7/14					
No. tagged	12					
No. recovered	3					
% recovered	25.0					
<u>District</u>						
Northern	33.3%	Jonah Bay	33.3			
Coghill	66.7%	Esther/College	33.3	Coghill River	33.3	
	7/15					
No. tagged	2					
No. recovered	0					
% recovered	0.0					
<u>Kiniklik</u>	7/15					
No. tagged	5					
No. recovered	1					
% recovered	20.0					
<u>District</u>						
Coghill	100.0%			Coghill River	100.0	
<u>Eastside Unakwik Inlet</u>	7/30					
No. tagged	1					
No. recovered	0					
% recovered	0.0					
<hr/>						
<u>Coho Salmon</u>						
Tagging site	Tagging date	Catch		Escapement		
		Area	%	Stream	%	
<hr/>						
<u>Kiniklik</u>	7/17					
No. tagged	1					
No. recovered	0					
% recovered	0.0					
<u>Eastside Unakwik Inlet</u>	7/29					
No. tagged	1					
No. recovered	0					
% recovered	0.0					
<hr/>						

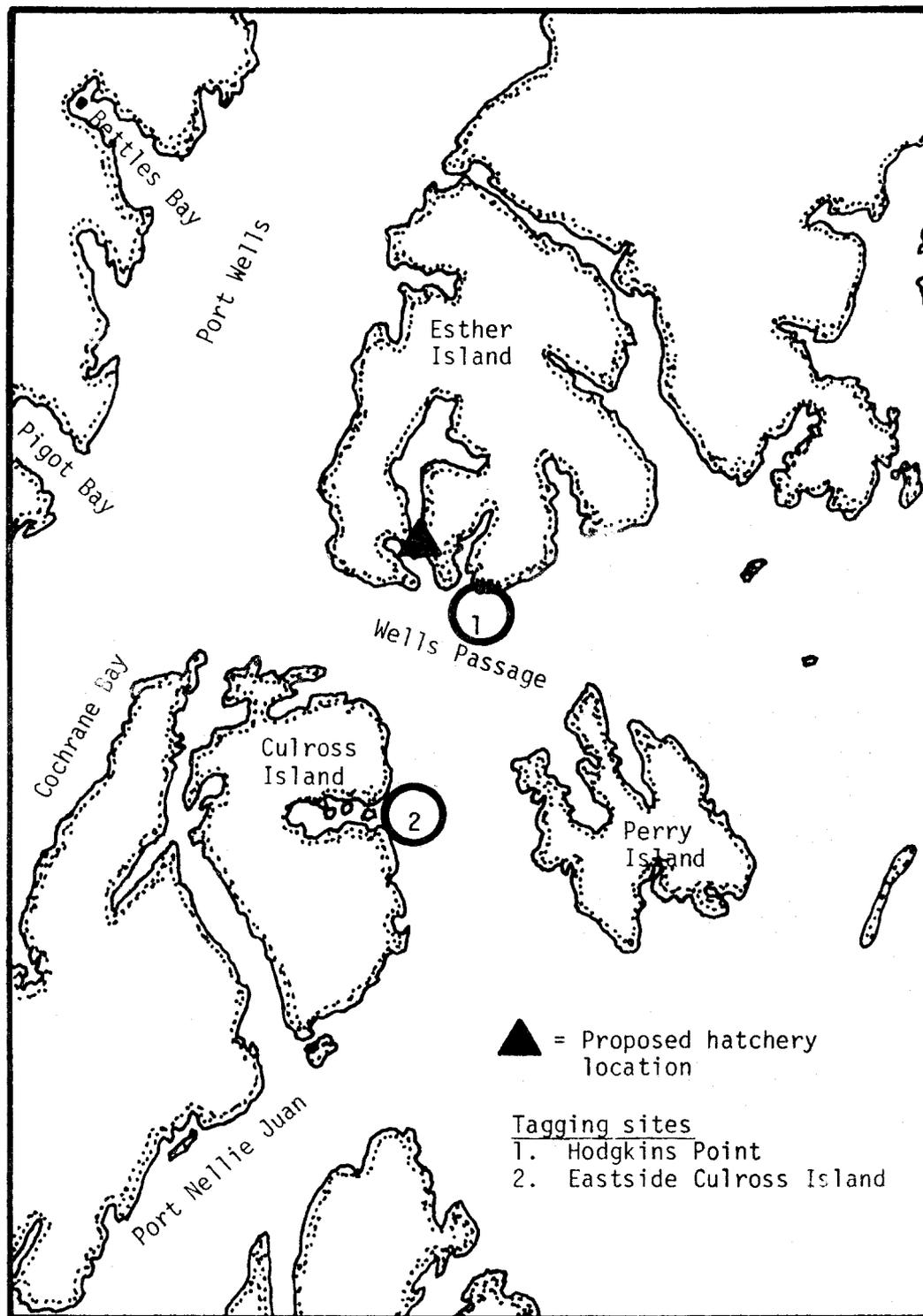


Figure 4. Location of the Prince William Sound Aquaculture Corporation Esther Island hatchery and associated tagging sites, Prince William Sound, 1982.

Table 9. Number of salmon tagged and recovered, by species, tagging sites and date, and percent of the total recovered by recovery area, for the Prince William Sound Aquaculture Corporation proposed Esther Island hatchery, Prince William Sound, 1982.

Tagging site	Tagging date	Pink Salmon			
		Catch		Escapement	
		Area	%	Stream	%
<u>Hodgkins Point</u>	7/10				
No. tagged	86				
No. recovered	13				
% recovered	15.1				
<u>District</u>					
Northern	30.8%	Mid Unakwik Inlet	7.7	Cedar Creek	7.7
				Siwash River	7.7
				Good Creek	7.7
Coghill	46.2%	Esther/College	7.7	Swanson Creek	7.7
		West Port Wells	7.7	Triple Creek	15.4
				Coghill River	7.7
Northwestern	23.1%	Kings Bay	7.7	Tebenkof Creek	7.7
				Wickett Creek	7.7
	7/11				
No. tagged	106				
No. recovered	23				
% recovered	21.7				
<u>District</u>					
Eastern	8.7%			Indian Creek	4.3
				Levshakoff Cr.	4.3
Northern	8.7%	Jonah Bay	4.3	Unakwik Creek	4.3
Coghill	60.9%	Esther/College	13.0	Mill Creek	4.3
		West Port Wells	17.4	Pirate Creek	4.3
				Swanson Creek	8.7
				Triple Creek	4.3
				Village Creek	4.3
				Coghill River	4.3
Northwestern	21.7%	East Culross Is.	8.7	Mink Creek	13.0
<u>Culross Island</u>	7/08				
No. tagged	150				
No. recovered	24				
% recovered	16.0				
<u>District</u>					
Coghill	25.0%	Esther/College	4.2	Tebenkof Creek	4.2
		West Port Wells	20.8	Paulson Creek	16.7
Northwestern	66.7%	East Culross Is.	37.5	Wickett Creek	4.2
				Unnamed Stream	4.2

-Continued-

Table 9. Number of salmon tagged and recovered, by species, tagging sites and date, and percent of the total recovered by recovery area, for the Prince William Sound Aquaculture Corporation proposed Esther Island hatchery, Prince William Sound, 1982 (continued).

Tagging site	Tagging date	Pink Salmon			
		Catch		Escapement	
		Area	%	Stream	%
<u>Culross Island (Continued)</u>					
<u>District</u>					
Southwestern	8.3%			Totemoff Creek	8.3
			7/09		
No. tagged	226				
No. recovered	50				
% recovered	22.1				
<u>District</u>					
Northern	2.0%	Mid Unakwik Inlet	2.0	Harrison Creek	2.0
Coghill	30.0%	Esther/College	4.0	Mill Creek	6.0
		West Port Wells	10.0	Swanson Creek	6.0
				Village Creek	2.0
Northwestern	64.0%	East Culross Is.	42.0	Logging Camp	2.0
				Tebenkoff Creek	2.0
				Paulson Creek	6.0
				Wickett Creek	6.0
				Mink Creek	2.0
				Unnamed Stream	2.0
Southwestern	4.0%	East Chenega Is.	2.0	McClure Creek	2.0
			7/10	Bainbridge Cr.	2.0
No. tagged	184				
No. recovered	31				
% recovered	16.8				
<u>District</u>					
Northern	3.2%			Wells River	3.2
Coghill	41.9%	Esther/College	3.2	Mill Creek	3.2
		West Port Wells	12.9	Pirate Creek	3.2
				Meacham Creek	3.2
				Swanson Creek	6.5
				Triple Creek	6.5
				Village Creek	3.2
Northwestern	54.8%	Kings Bay	3.2	Barge Creek	3.2
				Tebenkof Creek	16.1
				Blackstone Cr.	3.2
				Paulson Creek	19.4
				Wickett Creek	6.5
				Mink Creek	3.2
			7/11		
No. tagged	114				
No. recovered	20				
% recovered	17.5				

-Continued-

Table 9. Number of salmon tagged and recovered, by species, tagging sites and date, and percent of the total recovered by recovery area, for the Prince William Sound Aquaculture Corporation proposed Esther Island hatchery, Prince William Sound, 1982 (continued).

Tagging site	Tagging date	Pink Salmon			
		Catch		Escapement	
		Area	%	Stream	%
<u>Culross Island (Continued)</u>					
<u>District</u>					
Coghill	40.0%	Esther/College	5.0	Mill Creek	5.0
		West Port Wells	10.0	Pirate Creek	5.0
				Swanson Creek	5.0
				Triple Creek	10.0
Northwestern	55.0%	East Culross Is.	10.0	Tebenkof Creek	10.0
				Paulson Creek	15.0
				Wickett Creek	5.0
				Culross Creek	5.0
				Mink Creek	10.0
Southwestern	5.0%	East Chenega Is.	5.0		
<u>Chum Salmon</u>					
Tagging site	Tagging date	Catch		Escapement	
		Area	%	Stream	%
<u>Hodgkins Point</u>					
	7/10				
No. tagged	1				
No. recovered	0				
% recovered	0.0				
	7/11				
No. tagged	49				
No. recovered	11				
% recovered	22.4				
<u>District</u>					
Coghill	90.9%	Esther/College	72.7		
		West Port Wells	18.2		
Northwestern	9.1%	East Culross Is.	9.1		
<u>Culross Island</u>					
	7/08				
No. tagged	38				
No. recovered	9				
% recovered	23.7				
<u>District</u>					
Coghill	77.8%	Esther/College	33.3	Mill Creek	11.1
		West Port Wells	33.3		

-Continued-

Table 9. Number of salmon tagged and recovered, by species, tagging sites and date, and percent of the total recovered by recovery area, for the Prince William Sound Aquaculture Corporation proposed Esther Island hatchery, Prince William Sound, 1982 (continued).

Tagging site	Tagging date	Catch		Escapement	
		Area	%	Stream	%
<u>Sockeye Salmon</u>					
<u>Hodgkins Point</u>	7/10				
No. tagged	5				
No. recovered	0				
% recovered	0.0				
	7/11				
No. tagged	12				
No. recovered	5				
% recovered	41.7				
<u>District</u>					
Coghill	80.0%			Coghill River	80.0
Southwestern	20.0%	E. Chenega Is.	20.0		
<u>Culross Island</u>	7/08				
No. tagged	37				
No. recovered	17				
% recovered	45.9				
<u>District</u>					
Coghill	88.3%	Esther/College	5.9	Coghill River	82.4
Northwestern	11.8%	E. Culross Is.	11.8		
	7/09				
No. tagged	87				
No. recovered	51				
% recovered	58.6				
<u>District</u>					
Coghill	98.0%	Esther/College	23.5	Coghill River	74.5
Northwestern	2.0%	East Culross Is.	2.0		
	7/10				
No. tagged	41				
No. recovered	22				
% recovered	53.7				
<u>District</u>					
Coghill	100.0%	Esther/College	31.8	Coghill River	63.6
		West Port Wells	4.5		
	7/11				
No. tagged	4				
No. recovered	1				
% recovered	25.0				
<u>District</u>					
Coghill	100.0%			Coghill River	100.0

-Continued-

Table 9. Number of salmon tagged and recovered, by species, tagging sites and date, and percent of the total recovered by recovery area, for the Prince William Sound Aquaculture Corporation proposed Esther Island hatchery, Prince William Sound, 1982 (continued).

Tagging site	Tagging date	Coho Salmon			
		Area	Catch %	Stream	Escapement %
<u>Hodgkins Point</u>	7/11				
No. tagged	1				
No. recovered	0				
% recovered	0.0				
<u>Culross Island</u>	7/10				
No. tagged	1				
No. recovered	0				
% recovered	0.0				

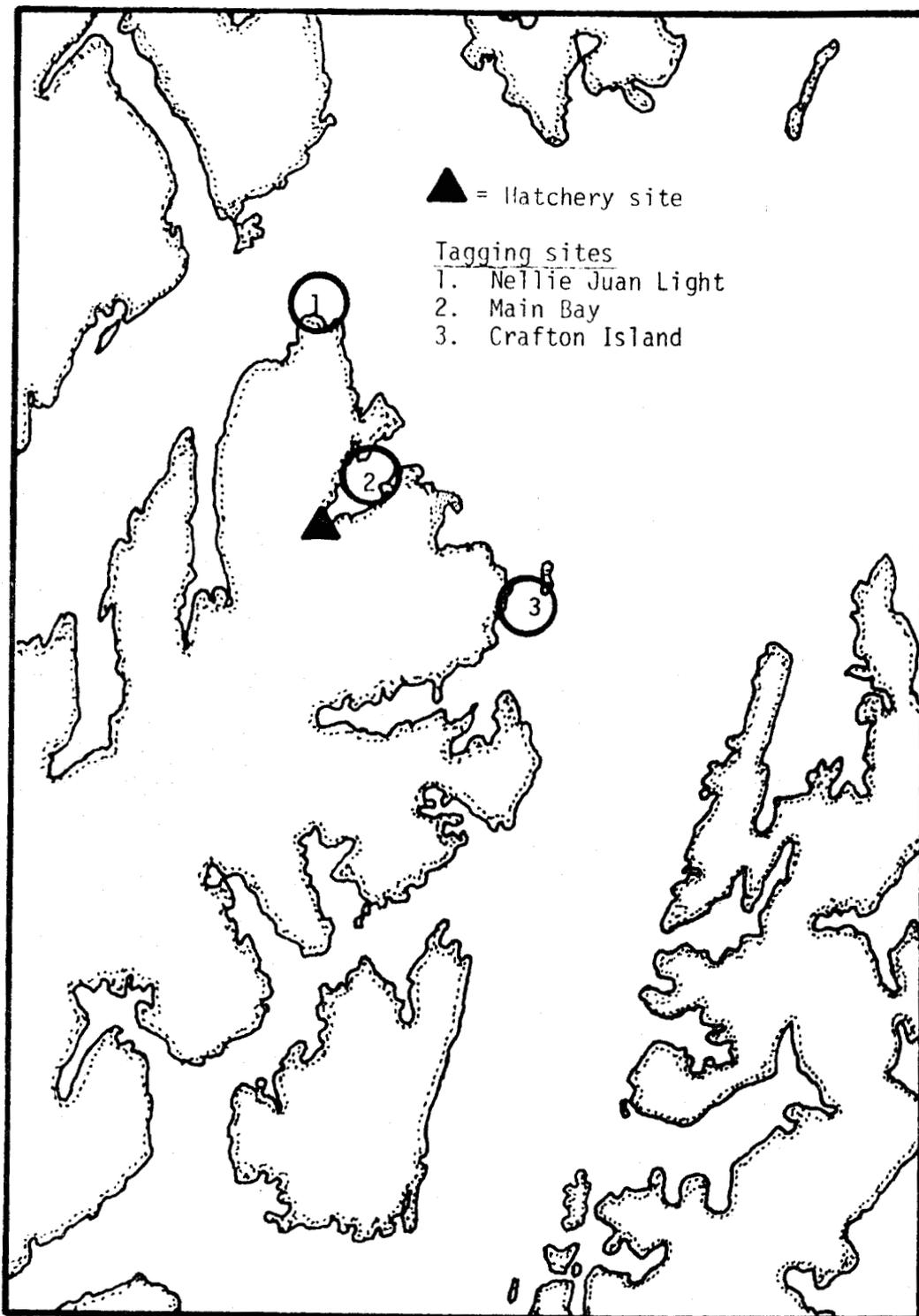


Figure 5. Location of the Alaska Department of Fish and Game FRED Division Main Bay hatchery and associated tagging sites, Prince William Sound, 1982.

Table 10. Number of salmon tagged and recovered, by species, tagging sites and date, and percent of the total recovered by recovery area, for the Alaska Department of Fish and Game FRED Division, Main Bay hatchery, Prince William Sound, 1982.

Tagging site	Tagging date	Pink Salmon			
		Catch		Escapement	
		Area	%	Stream	%
<u>Nellie Juan Light</u>	7/17				
No. tagged	48				
No. recovered	7				
% recovered	14.6				
<u>District</u>					
Northern	14.3%			Cannery Creek	14.3
Coghill	14.3%	West Port Wells	14.3	Shrode Creek	14.3
Northwestern	57.1%			W. Finger Cr.	14.3
				Chimevisky Cr.	14.3
				McClure Creek	14.3
Southwestern	14.3%	Fleming/Bainbridge /Countess Pt.	14.3		
<u>Main Bay</u>	7/31				
No. tagged	454				
No. recovered	58				
% recovered	12.8				
<u>District</u>					
Eastern	1.7%	Sawmill/S. Valdez	1.7	Eickelberg Cr.	1.7
Northern	13.8%	S. Glacier Island	1.7	Jonah Creek	1.7
		Unakwik Point	5.2		
		Mid Unakwik Inlet	1.7		
		Perry Island	1.7		
Coghill	12.1%	Esther/College	5.2	Harrison Creek	1.7
		West Port Wells	1.7	Hummer Creek	1.7
				Coghill River	1.7
Northwestern	6.9%			Blackstone Cr.	1.7
				Wickett Creek	1.7
				E. Finger Creek	3.4
Eshamy	3.4%			Loomis Creek	1.7
				J.D.Solf Creek	1.7
Southwestern	58.6%	East Chenega Is.	15.5	Bainbridge Cr.	5.2
		Fleming/Bain- bridge/Countess	12.1	Whale Creek	1.7
		Shelter Bay	1.7	Montgomery Cr.	1.7
		East Latouche Is.	1.7		
		Middle Cape/South Twin Bay			
		Sawmill Bay	13.8		
		Prince of Wales	1.7		

-Continued-

Table 10. Number of salmon tagged and recovered, by species, tagging sites and date, and percent of the total recovered by recovery area, for the Alaska Department of Fish and Game FRED Division, Main Bay hatchery, Prince William Sound, 1982 (continued).

Tagging site	Tagging date	Pink Salmon			
		Catch		Escapement	
		Area	%	Stream	%
<u>Crafton Island</u>	7/18				
No. tagged	410				
No. recovered	60				
% recovered	14.6				
<u>District</u>					
Northern	3.3%	Kiniklik	1.7		
		Long Bay	1.7		
Coghill	25.0%	Esther/College	3.3	Mill Creek	3.3
		West Port Wells	10.0	Pirate Creek	1.7
				Meacham Creek	1.7
				Swanson Creek	1.7
				Triple Creek	1.7
				Coghill River	1.7
Northwestern	43.3%	East Culross Is.	3.3	Shotgun Creek	1.7
		Shipyard, PNJ	1.7	Paulson Creek	8.3
		Cochran Bay	1.7	Wickett Creek	1.7
		Culross Passage	3.3	Unnamed Stream	1.7
				Culross Creek	3.3
				Mink Creek	8.3
				W. Finger Cr.	3.3
				Unnamed Stream	3.3
				Unnamed Stream	1.7
Eshamy	10.0%	Eshamy	1.7	Loomis Creek	1.7
				J.D.Solf Creek	3.3
				Eleshansky Cr.	3.3
Southwestern	16.7%	East Chenega Is.	5.0	Paddy Creek	1.7
		Sawmill Bay	3.3	Nacktan Creek	1.7
				Erb Creek	1.7
				Brizgaloff Cr.	1.7
				Halverson Creek	1.7
	8/01				
No. tagged	423				
No. recovered	45				
% recovered	10.6				
<u>District</u>					
Northern	11.1%	South Glacier Is.	2.2	Wells River	2.2
		Point Pellew	2.2		
		Axel Lind/Eaglek	2.2		
		Cannery Cr. HHA	2.2		
Coghill	6.7%			Chasm Creek	4.4
				Swanson Creek	2.2

-Continued-

Table 10. Number of salmon tagged and recovered, by species, tagging sites and date, and percent of the total recovered by recovery area, for the Alaska Department of Fish and Game FRED Division, Main Bay hatchery, Prince William Sound, 1982 (continued).

		<u>Pink Salmon</u>			
Tagging site	Tagging date	Catch		Escapement	
		Area	%	Stream	%
<u>Crafton Island (Continued)</u>					
<u>District</u>					
Northwestern	17.8%			Unnamed Stream	2.2
				Culross Creek	6.7
				Mink Creek	2.2
				E. Finger Cr.	2.2
				W. Finger Cr.	2.2
				McClure Creek	2.2
Eshamy	4.4%			Loomis Creek	2.2
				Eshamy River	2.2
Southwestern	60.0%	East Chenega Is.	33.3	Erb Creek	2.2
		Fleming/Bain-			
		bridge/Countess	8.9		
		Shelter Bay	2.2		
		Sawmill Bay	8.9		
		Latouche Passage	4.4		
		8/18			
No. tagged	29				
No. recovered	4				
% recovered	13.8				
<u>District</u>					
Coghill	25.0%			Harrison Creek	25.0
Northwestern	50.0%			Paulson Creek	25.0
				Mink Creek	25.0
Southwestern	25.0%	East Chenega Is.	25.0		

		<u>Chum Salmon</u>			
Tagging site	Tagging date	Catch		Escapement	
		Area	%	Stream	%
<u>Nellie Juan Light</u>	7/17				
No. tagged	17				
No. recovered	2				
% recovered	11.8				
<u>District</u>					
Northwestern	100.0%	Kings Bay	50.0	Mink Creek	50.0

-Continued-

Table 10. Number of salmon tagged and recovered, by species, tagging sites and date, and percent of the total recovered by recovery area, for the Alaska Department of Fish and Game FRED Division, Main Bay hatchery, Prince William Sound, 1982 (continued).

<u>Chum Salmon</u>					
Tagging site	Tagging dates	Catch		Escapement	
		Area	%	Stream	%
<u>Main Bay</u>	7/31				
No. tagged	7				
No. recovered	1				
% recovered	14.3				
<u>District</u>					
Northwestern	100.0%	Shipyard, PNJ	100.0		
<u>Crafton Island</u>	7/18				
No. tagged	20				
No. recovered	3				
% recovered	15.0				
<u>District</u>					
Coghill	33.3%			Swanson Creek	33.3
Northwestern	66.7%	Shipyard, PNJ	66.7		
	8/01				
No. tagged	2				
No. recovered	0				
% recovered	0.0				
<u>Sockeye Salmon</u>					
Tagging site	Tagging date	Catch		Escapement	
		Area	%	Stream	%
<u>Nellie Juan Light</u>	7/17				
No. tagged	1				
No. recovered	0				
% recovered	0.0				
<u>Main Bay</u>	7/31				
No. tagged	1				
No. recovered	0				
% recovered	0.0				
<u>Crafton Island</u>	7/18				
No. tagged	2				
No. recovered	0				
% recovered	0.0				
	8/01				
No. tagged	4				
No. recovered	0				
% recovered	0.0				

-Continued-

Table 10. Number of salmon tagged and recovered, by species, tagging sites and date, and percent of the total recovered by recovery area, for the Alaska Department of Fish and Game FRED Division, Main Bay hatchery, Prince William Sound, 1982 (continued).

Tagging site	Tagging date	Coho Salmon			
		Catch		Escapement	
		Area	%	Stream	%
<u>Main Bay</u>	7/31				
No. tagged	2				
No. recovered	0				
% recovered	0.0				

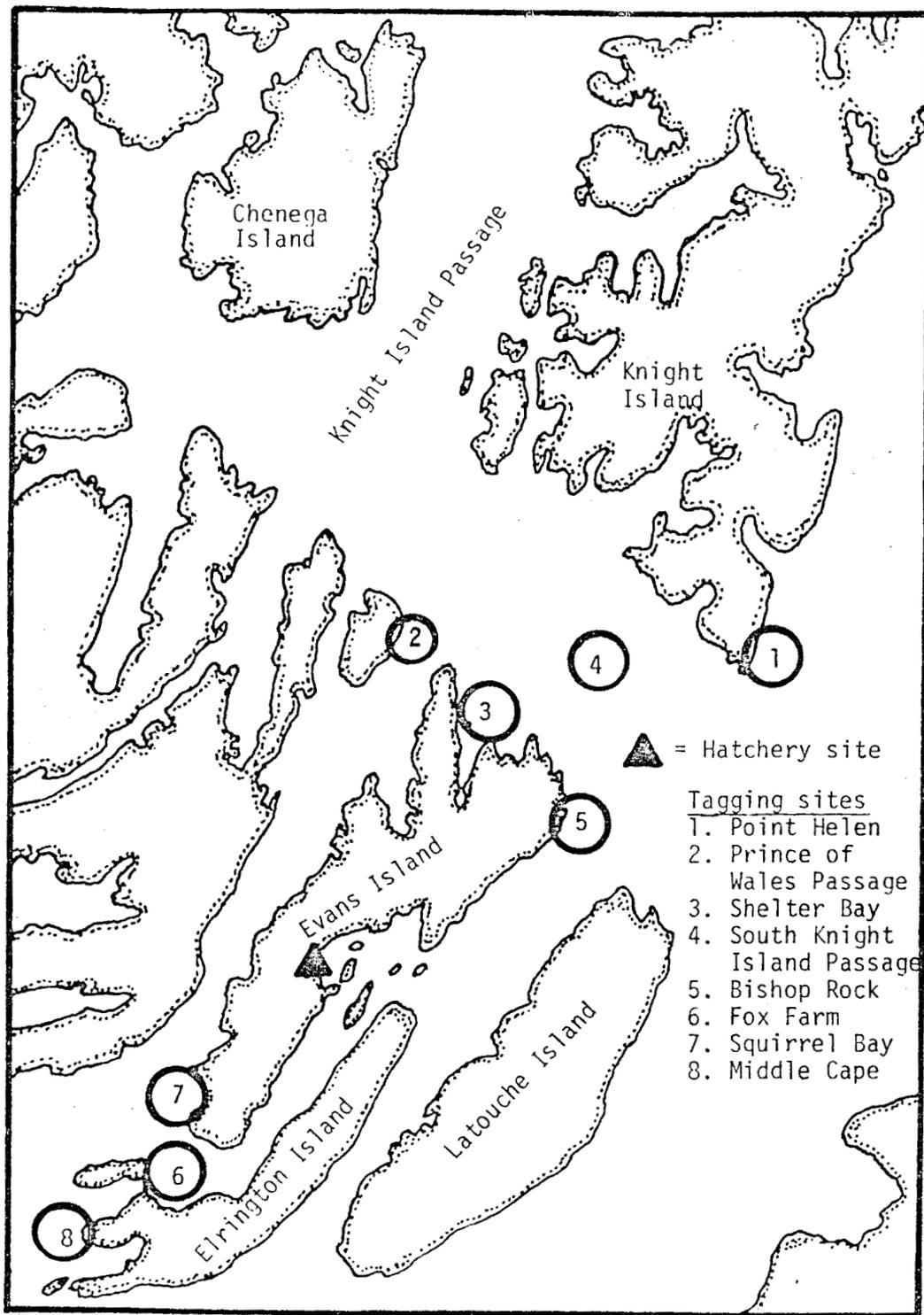


Figure 6. Location of the Prince William Sound Aquaculture Corporation Port San Juan hatchery and associated tagging sites, Prince William Sound, 1982.

Table 11. Number of salmon tagged and recovered, by species, tagging sites and date, and percent of the total recovered by recovery area, for the Prince William Sound Aquaculture Corporation San Juan hatchery, Prince William Sound, 1982.

Tagging site	Tagging date	Pink Salmon			
		Catch		Escapement	
		Area	%	Stream	%
<u>Point Helen</u>	7/24				
No. tagged	353				
No. recovered	66				
% recovered	18.7				
<u>District</u>					
Eastern	4.5%			Fish Creek	1.5
				Duck River	1.5
				Levshakoff Cr.	1.5
Northern	13.6%	Kiniklik	1.5	Cedar Creek	3.0
		Axel Lind/Eaglek	1.5	Surplus Creek	1.5
				Cannery Creek	3.0
				Jonah Creek	1.5
				Good Creek	1.5
Coghill	13.6%	Esther/College	1.5	Swanson Creek	1.5
		West Port Wells	6.1	Triple Creek	1.5
				Coghill River	3.0
Northwestern	7.6%	Culross Passage	3.0	Mink Creek	1.5
				E. Finger Cr.	3.0
Southwestern	57.6%	East Chenega Is.	4.5	Hogan Creek	1.5
		Snug Harbor/ Port Helen	1.5	Snug Harbor Cr.	7.6
		East Latouche Is.	1.5	Johnson Creek	1.5
		Bishop Rock/ Sawmill Bay	1.5	Horseshoe Creek	1.5
		Middle Cape/ South Twin Bay	1.5		
		Sawmill Bay	27.3		
		Latouche Passage	3.0		
		West Knight Is.	3.0		
		Prince of Wales	1.5		
<u>Shelter Bay</u>	7/23				
No. tagged	510				
No. recovered	81				
% recovered	15.9				
<u>District</u>					
Eastern	1.2%			Control Creek	1.2
Northern	8.6%	Axel Lind/Eaglek	2.5	Cedar Creek	1.2
		Cannery Cr. HHA	1.2	Surplus Creek	1.2
				Cannery Creek	2.5

-Continued-

Table 11. Number of salmon tagged and recovered, by species, tagging sites and date, and percent of the total recovered by recovery area, for the Prince William Sound Aquaculture Corporation San Juan hatchery, Prince William Sound, 1982 (continued).

Tagging site	Tagging date	Pink Salmon			
		Catch		Escapement	
		Area	%	Stream	%
<u>South Knight Island Passage (Continued)</u>					
<u>District</u>					
Southwestern	100.0%	Fleming/Bain- bridge/Count.	61.5	Snug Harbor Cr.	7.7
		East Latouche Is.	7.7	Larsen Creek	7.7
		Sawmill Bay	15.4		
<u>Prince of Wales Passage</u>					
	8/07				
No. tagged	519				
No. recovered	89				
% recovered	17.1				
<u>District</u>					
Eastern	2.2%	Johnson Cove	2.2		
Northern	3.4%	Kiniklik	1.1		
		Point Pellew	1.1		
		Mid Unakwik Inlet	1.1		
Coghill	2.2%	Esther/College	1.1	Coghill River	1.1
Southwestern	91.0%	East Chenega Is.	27.0	Paddy Creek	1.1
		Fleming/Bain- bridge/Count.	28.1	Bainbridge Cr.	1.1
		Shelter Bay	6.7	Countess Creek	2.2
		East Latouche Is.	2.2	Johnson Creek	1.1
		Bishop Rock/ Sawmill	5.6		
		Sawmill Bay	4.5		
		Prince of Wales	11.2		
8/19					
No. tagged	25				
No. recovered	2				
% recovered	8.0				
<u>District</u>					
Southwestern	100.0%	Sawmill Bay	100.0		
<u>Fox Farm</u>					
	7/21				
No. tagged	454				
No. recovered	64				
% recovered	14.1				
<u>District</u>					
Eastern	4.7%	Sawmill/S.Valdez	1.6	Olsen Creek	1.6
				Stellar Creek	1.6

-Continued-

Table 11. Number of salmon tagged and recovered, by species, tagging sites and date, and percent of the total recovered by recovery area, for the Prince William Sound Aquaculture Corporation San Juan hatchery, Prince William Sound, 1982 (continued).

Tagging site	Tagging date	Pink Salmon			
		Catch		Escapement	
		Area	%	Stream	%
Middle Cape	7/22				
No. tagged	89				
No. recovered	14				
% recovered	15.7				
District					
Northern	21.4%	Kiniklik	7.1		
		Mid Unakwik Inlet	7.1		
		Cannery Cr. HHA	7.1		
Coghill	7.1%	Esther/College	7.1		
Northwestern	7.1%			Paulson Creek	7.1
Southwestern	64.3%	Shelter Bay	7.1	Unnamed Stream	7.1
		Sawmill Bay	28.6	Erb Creek	7.1
		Prince of Wales	7.1	Falls Creek	7.1
	8/05				
No. tagged	398				
No. recovered	45				
% recovered	11.3				
District					
Eastern	4.4%	Galena Bay	2.2		
		Port Fidalgo	2.2		
Northern	11.1%	Kiniklik	2.2		
		Mid Unakwik Inlet	8.9	Mink Creek	2.2
Northwestern	2.2%				
Southwestern	77.8%	East Chenega Is.	2.2		
		Fleming/Bain- bridge/Countess	8.9		
		Shelter Bay	4.4		
		East Latouche Is.	8.9		
		Bishop Rock/ Sawmill Bay	4.4		
		Middle Cape/ S. Twin Bay	2.2		
		Sawmill Bay	35.6		
		Latouche Passage	4.4		
		West Knight Is.	2.2		
		Prince of Wales	4.4		
Southeastern	2.2%	Port Etches	2.2		
	8/06				
No. tagged	5				
No. recovered	3				
% recovered	60.0				
District					
Southwestern	100.0%	Sawmill Bay	100.0		

Table 11. Number of salmon tagged and recovered, by species, tagging sites and date, and percent of the total recovered by recovery area, for the Prince William Sound Aquaculture Corporation San Juan hatchery, Prince William Sound, 1982 (continued).

Tagging site	Tagging date	Catch		Escapement	
		Area	%	Stream	%
<u>Chum Salmon</u>					
<u>Shelter Bay (Continued)</u>	7/25				
No. tagged	4				
No. recovered	1				
% recovered	25.0				
<u>District</u>					
Coghill	100.0%			Swanson Creek	100.0
	7/29				
No. tagged	1				
No. recovered	0				
% recovered	0.0				
	8/06				
No. tagged	1				
No. recovered	0				
% recovered	0.0				
<u>Prince of Wales</u>	8/07				
No. tagged	3				
No. recovered	0				
% recovered	0.0				
<u>Fox Farm</u>	7/21				
No. tagged	24				
No. recovered	3				
% recovered	12.5				
<u>District</u>					
Eastern	33.3%	Galena Bay	33.3		
Coghill	33.3%	West Port Wells	33.3		
Northwestern	33.3%			Tebenkof Creek	33.3
	7/22				
No. tagged	1				
No. recovered	0				
% recovered	0.0				
<u>Middle Cape</u>	7/22				
No. tagged	15				
No. recovered	1				
% recovered	6.7				
<u>District</u>					
Eastern	100.0%	Port Fidalgo	100.0		
	8/05				
No. tagged	6				
No. recovered	2				
% recovered	33.3				

-Continued-

Table 11. Number of salmon tagged and recovered, by species, tagging sites and date, and percent of the total recovered by recovery area, for the Prince William Sound Aquaculture Corporation San Juan hatchery, Prince William Sound, 1982 (continued).

		<u>Chum Salmon</u>			
Tagging site	Tagging date	Catch		Escapement	
		Area	%	Stream	%
Middle Cape (Continued)					
District					
	Southwestern	100.0%		Fleming/Bain- bridge/Countess	50.0
				East Latouche Is.	50.0
Squirrel Bay					
			7/22		
	No. tagged	19			
	No. recovered	1			
	% recovered	5.3			
District					
	Eastern	100.0%		Mineral Creek	100.0
			8/06		
	No. tagged	3			
	No. recovered	1			
	% recovered	33.3			
District					
	Southwestern	100.0%		East Latouche Is.	100.0
Bishop Rock					
			7/25		
	No. tagged	5			
	No. recovered	0			
	% recovered	0.0			
		<u>Sockeye Salmon</u>			
Tagging site	Tagging date	Catch		Escapement	
		Area	%	Stream	%
Point Helen					
			7/24		
	No. tagged	2			
	No. recovered	0			
	% recovered	0.0			
Shelter Bay					
			7/23		
	No. tagged	3			
	No. recovered	0			
	% recovered	0.0			
			8/21		
	No. tagged	1			
	No. recovered	0			
	% recovered	0.0			

-Continued-

Table 11. Number of salmon tagged and recovered, by species, tagging sites and date, and percent of the total recovered by recovery area, for the Prince William Sound Aquaculture Corporation San Juan hatchery, Prince William Sound, 1982 (continued).

<u>Sockeye Salmon</u>					
Tagging site	Tagging date	Catch		Escapement	
		Area	%	Stream	%
<u>Prince of Wales Passage</u>	8/07				
No. tagged		2			
No. recovered		0			
% recovered		0.0			
<u>Fox Farm</u>	7/21				
No. tagged		4			
No. recovered		0			
% recovered		0.0			
	7/22				
No. tagged		1			
No. recovered		0			
% recovered		0.0			
<u>Middle Cape</u>	7/22				
No. tagged		1			
No. recovered		0			
% recovered		0.0			
<u>Squirrel Bay</u>	7/22				
No. tagged		4			
No. recovered		0			
% recovered		0.0			

<u>Coho Salmon</u>					
Tagging site	Tagging date	Catch		Escapement	
		Area	%	Stream	%
<u>Point Helen</u>	7/24				
No. tagged		2			
No. recovered		0			
% recovered		0.0			
<u>Fox Farm</u>	7/22				
No. tagged		2			
No. recovered		0			
% recovered		0.0			
<u>Middle Cape</u>	7/22				
No. tagged		2			
No. recovered		0			
% recovered		0.0			

-Continued-

Table 11. Number of salmon tagged and recovered, by species, tagging sites and date, and percent of the total recovered by recovery area, for the Prince William Sound Aquaculture Corporation San Juan hatchery, Prince William Sound, 1982 (continued).

Tagging site	Tagging date	Coho Salmon			
		Catch		Escapement	
		Area	%	Stream	%
Middle Cape (Continued)	8/05				
No. tagged	3				
No. recovered	0				
% recovered	0.0				
	8/06				
No. tagged	1				
No. recovered	0				
% recovered	0.0				
Squirrel Bay	7/22				
No. tagged	4				
No. recovered	0				
% recovered	0.0				

Table 12. Summary of pink salmon tagging within the Prince William Sound Aquaculture Corporation Port San Juan hatchery special harvest area, 1982.

Date	Number of fish tagged	Tag numbers	Percent recovered		
			Total	Inside HA ¹	Outside HA ²
July 28	100	0- 99	61	100.0	0.0
July 31	100	100-199	43	100.0	0.0
August 3	100	200-299	37	91.9	8.1
August 6	100	300-399	15	100.0	0.0
August 9	100	400-499	47	97.1	2.9
August 12	100	500-599	49	98.0	2.0
August 15	100	600-699	59	100.0	0.0
August 18	100	700-799	48	97.9	2.1
August 21	100	800-899	48	100.0	0.0
August 24	100	900-999	27	100.0	0.0
Total Average	1,000		41.6	98.5	1.5

¹ The percent of total recoveries that occurred inside Port San Juan hatchery's special and terminal harvest areas.

² The percent of total recoveries that occurred outside Port San Juan hatchery's special and terminal harvest areas.

Table 13. Summary of first recapture data of tagged pink salmon, by experiment date, for the Prince William Sound Aquaculture Corporation Port San Juan hatchery special harvest area, 1982.

Date	No. of recaptures	Number of days at large		Area of recapture by percent		Area of recapture outside HA		
		Average	Range	Inside HA ¹	Outside HA ²	Area	Days after tagging	No. of recaptures
July 28	61	3.0	1-12	100.0	0.0	-	-	-
July 31	43	2.4	0-9	100.0	0.0	-	-	-
August 3	35	3.6	0-21	91.4	8.6	Elrington Passage	4	1
						Bishop Rock	4	2
August 6	12	1.7	0-5	100.0	0.0	-	-	-
August 9	47	2.9	0-29 ³	97.9	2.1	Stream No. 662, Shelter Bay, Evans Island	27	1
August 12	49	2.7	0-23 ³	100.0	0.0	-	-	-
August 15	59	3.2	0-21	100.0 ⁴	0.0	-	-	-
August 18	48	4.0	0-32 ³	97.9	2.1	Shelter Bay, Evans Island	2	1
August 21	48	6.7	1-29 ³	100.0	0.0	-	-	-
August 24	27	4.7	0-20 ³	100.0	0.0	-	-	-

¹ The percent of total recoveries that occurred inside Port San Juan hatchery's special and terminal harvest areas.

² The percent of total recoveries that occurred outside Port San Juan hatchery's special and terminal harvest areas.

³ Tags recovered in September during egg-take operations.

⁴ One recovery occurred in stream no. 667, which is immediately adjacent to the hatchery making interception of this stock unavoidable.

Table 14. Summary of second recapture data of tagged pink salmon, by experiment date, for the Prince William Sound Aquaculture Corporation Port San Juan hatchery special harvest area, 1982.

Date	Number of		Number of days at large		Area of recapture by percent		Area of recapture outside HA		
	Releases	Recapture	Average	Range	Inside HA ¹	Outside HA ²	Area	Days after tagging	No. of recaptures
July 28	35	18	4.4	2-12	94.4	5.6	Elrington Passage	10	1
July 31	26	9	5.3	1-10	100.0	0.0	-	-	-
August 3	12	3	3.3	2-4	100.0	0.0	-	-	-
August 6	1	1	6.0	-	100.0	0.0	-	-	-
August 9	35	6	4.5	2-7	100.0	0.0	-	-	-
August 12	32	15	6.8	1-25	93.3	6.7	Snug Harbor	6	1
August 15	35	21	5.7	1-23	100.0	0.0	-	-	-
August 18	30	20	5.5	1-21	100.0	0.0	-	-	-
August 21	17	6	5.7	2-19	100.0	0.0	-	-	-
August 24	10	3	9.0	6-14	100.0	0.0	-	-	-
Average			5.6	1-25	98.8	1.2			

¹ The percent of total recoveries that occurred inside Port San Juan hatchery's special and terminal harvest areas.

² The percent of total recoveries that occurred outside Port San Juan hatchery's special and terminal harvest areas.

Table 15. Summary of third recapture data of tagged pink salmon, by experiment date, for the Prince William Sound Aquaculture Corporation Port San Juan hatchery special harvest area, 1982.

Date	Number of		Number of days		Area of recapture		Area of recapture outside HA		
	Releases	Recapture	Average	Range	Inside HA ¹	Outside HA ²	Area	Days after tagging	No. of recaptures
July 28	4	0	-	-	-	-	-	-	-
July 31	3	1	2	-	100.0	0.0	-	-	-
August 3	1	1	9	-	100.0	0.0	-	-	-
August 6	0	0	-	-	-	-	-	-	-
August 9	2	2	2.5	2-3	100.0	0.0	-	-	-
August 12	4	3	4.7	3-6	66.7	33.3	Middle Cape	5	1
August 15	3	5	7	2-21	100.0	0.0	-	-	-
August 18	6	4	4.5	1-12	100.0	0.0	-	-	-
August 21	2	1	3	-	100.0	0.0	-	-	-
August 24	0	0	-	-	-	-	-	-	-
Average			4.7	1-21	95.2	4.8			

¹ The percent of total recoveries that occurred inside Port San Juan hatchery's special and terminal harvest areas.

² The percent of total recoveries that occurred outside Port San Juan hatchery's special and terminal harvest areas.

Table 16. Summary of tagged pink salmon recoveries at the Prince William Sound Aquaculture Corporation Port San Juan hatchery, based on hatchery sales fish catches and brood-stock recoveries, by tag site and date, Prince William Sound, 1982.

<u>Hatchery Sales Fish Recoveries</u>			
Tagging site	Date tagged	Number of fish tagged	Number of fish recovered
Crafton Island	7/18	461	2
Fox Farm	7/21	453	19
Middle Cape	7/22	89	4
Squirrel Bay	7/22	256	7
Shelter Bay	7/23	510	7
Point Helen	7/24	353	18
Shelter Bay	7/24	149	5
Shelter Bay	7/25	185	14
Bishop Rock	7/25	150	19
Main Bay	7/31	456	7
Crafton Island	8/01	423	4
Bishop Rock	8/04	17	1
Fox Farm	8/05	62	6
Middle Cape	8/05	398	15
Middle Cape	8/06	5	3
Squirrel Bay	8/06	62	3
Shelter Bay	8/06	85	4
Prince of Wales Passage	8/07	520	4
Point Lowe	8/15	185	1
South Knight Island Passage	8/18	93	2
Prince of Wales Passage	8/19	25	2
Shelter Bay	8/21	710	53
Total		5,647	200

<u>Brood-Stock Recoveries</u>			
Tagging site	Date tagged	Number of fish tagged	Number of fish recovered
South Knight Island Passage	8/18	93	1
Shelter Bay	8/21	710	24
Total		803	25

Table 17. Summary of Cannery Creek pink salmon hatchery stock interceptions, based on stream recoveries of tagged fish in Cannery Creek, by tag site and date, Prince William Sound, 1982.

Tagging site	Date tagged	Number of fish tagged	Number of fish recovered
Unakwik Point	7/15	162	1
Siwash Bay Entrance	7/16	5	1
Nellie Juan Light	7/17	48	1
Fox Farm	7/21	453	3
Squirrel Bay	7/22	256	1
Fox Farm	7/22	30	1
Shelter Bay	7/23	510	2
Point Helen	7/24	353	1
Shelter Bay	7/25	185	2
Kiniklik	7/28	231	5
Mueller Cove	7/29	403	12
Eastside Unakwik Inlet	7/30	173	7
Total		2,809	37

ACKNOWLEDGMENTS

The author would like to thank the following individuals and agencies for their valuable assistance in making this program a success: Alaska Department of Fish and Game personnel Mike Jackson, Randy Rust, Tom Kohler, Dan Dougherty, David Dickson, Wayne Lonn, Harry Curran, Jim Vansant, and Audrey Denison; Rich Mattson of PWSAC; Jason Wells of VFDA; the commercial fishermen of Prince William Sound; and personnel of the U.S. Forest Service.

LITERATURE CITED

Alaska Department of Fish and Game. 1978. Discussion of draft of policies and procedures - private nonprofit hatchery program, regional comprehensive planning. November 8. Policy No. PNP 2.2 Natural Stock Consideration, page 12.

Because the Alaska Department of Fish and Game receives federal funding, all of its public programs and activities are operated free from discrimination on the basis of race, color, national origin, age, or handicap. Any person who believes he or she has been discriminated against should write to:

O.E.O.
U.S. Department of the Interior
Washington, D.C. 20240