

SOUTHEAST ALASKA AND YAKUTAT AREA  
GROUNDFISH INVESTIGATIONS

Final Report for the Period 1 July 1988 to June 30, 1989

By

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## ABSTRACT

The Region I Groundfish Project manages all groundfish resources in state waters within the Southeast and Yakutat areas and manages demersal shelf rockfish in the adjacent Exclusive Economic Zone (EEZ). The project also cooperates with the National Marine Fisheries Service (NMFS) to regulate all groundfish fisheries in the offshore waters of the Eastern Gulf of Alaska.

The Project is divided into five primary functions (programs) and has staff personnel stationed in as many as six ports during peak fisheries and/or research activities. Information collected by the Groundfish Project staff is used to make management decisions regarding the Regional groundfish fisheries and to modify sampling design to obtain better data for future management.

This report describes the activities conducted by the Region I Groundfish Project between July 1, 1988 and June 30, 1989 and presents summaries of the data collected during that period.

## INTRODUCTION

The Region I Groundfish Project has research and management responsibility for all groundfish resources in state waters (0 to 3 miles) of the Southeast and Yakutat areas. The region extends from Dixon Entrance to 147° W. Longitude (Figure 1). In addition, the project has management responsibility for demersal shelf rockfish in the adjacent Exclusive Economic Zone (EEZ) and cooperates with the National Marine Fisheries Service (NMFS) to manage all groundfish fisheries in the offshore waters of the Eastern Gulf of Alaska. The region is divided into seven areas for groundfish management. All groundfish fisheries in the two Yakutat management areas are managed in cooperation with NMFS. The waters of Southeast Alaska are divided into five management areas (Figure 2). The two inside management areas include only territorial waters and all groundfish fisheries in those two areas are managed exclusively by the state. The three outside areas include both territorial and Federal waters. In those three areas the State has principal management responsibility for the demersal shelf rockfish fisheries and cooperates with NMFS for management of the sablefish and other groundfish fisheries.

The Groundfish Project is divided into five primary programs to monitor the Eastern Gulf groundfish fisheries and to collect the biological data and other information needed for management. These are:

1. program management,
2. logbooks and skipper interviews,
3. port sampling,
4. resource assessment,
5. on-board observers

The primary functions of each of these, as well as specific activities conducted during the reporting period are presented in this report. Groundfish staff personnel are stationed in up to six ports during peak fisheries or when research activities require support personnel.

Project funding is received from several sources with the base budget made up primarily of Federal Aid matching funds. Other funding sources include the State general fund, test fish funding for stock assessment work, a state-wide data collection contract with NMFS to collect and enter harvest information from fisheries in the EEZ, funding from the North Pacific Fisheries Management Council (NPFMC) to offset the costs associated with the project leader's participation on the Gulf of Alaska Groundfish Plan Team, and an annual travel grant from the Pacific Marine Fisheries Commission (PMFC) to cover the cost of the project leader's participation on the Technical Subcommittee of the Canada/US Groundfish Committee (TSC). During this reporting period a grant was also received from PMFC to develop a rockfish management plan for Southeast Alaska.

The responsibilities of Region I Groundfish Project personnel overlap considerably throughout the year. For example, port samplers are also responsible for collecting, editing, and entering fish tickets from both State and Federally managed fisheries; the resource assessment biologist collects biological information, conducts stock assessment surveys, and summarizes fisheries and survey data; and the Project Assistant in Sitka and I both assume numerous responsibilities which transcend the specific program definitions. As a result, there is often no clear distinction between activities specifically funded by Federal Aid money and those funded from other sources.

Detailed catch and effort information from the Regional groundfish fisheries is compiled annually and is included in the report to the Board of Fisheries at the end of each calendar year. That information is not repeated in this report. The 1988 and 1989 Board Reports (Bracken 1989a and Bracken 1990), which cover the 1988 and 1989 calendar years should be referenced for catch and effort information and specific regulatory action taken as a result of funding provided by this contract. The results of the PMFC-funded rockfish plan development project are reported in Bracken (1989b). This report includes a detailed review of the Groundfish Project activities from July 1, 1988 through June 30, 1989.

## **PROJECT PERSONNEL**

A staff of nine was funded by the groundfish project during all or part of the contract period. Of these, six were included in the annual project operations and directly participated in groundfish investigations. The other three were support personnel who were at least partially funded by the project during the reporting period.

Two positions, the Project Leader in Petersburg, and the Port Biologist/Project Assistant in Sitka are full-time personnel. All other project personnel are either seasonal employees or are only partially funded by the Groundfish Project. An organizational chart which includes groundfish staff, their titles, and duty stations is presented as Figure 3. Table 1 displays the distribution of personnel by port and function during the contract period.

## **REGION I GROUND FISH PROGRAMS**

This section of the report provides an overview of the specific programs undertaken by the Groundfish Project during the contract period. All research activities conducted by the Groundfish Project have direct management application.

### *Fishery Program Management*

The Fisheries Program Management increment is used to fund the standard operational costs of the Groundfish Project and for direct management of the groundfish fisheries. During the reporting period funding from this program covered: the Project Leader's salary and a portion of the Project Assistant's salary; much of the fixed costs of the project such as photo copying, vehicle mileage, postage, telephone, etc.; travel to attend Board of Fisheries meetings and local Advisory Committee meetings; regulation development and routine regulatory action such as issuance of Emergency Orders and circulation of News Releases; and computer costs including hardware and software acquisition and upgrades.

In-season management was needed during the reporting period in the flatfish trawl fishery and in the rockfish and sablefish longline fisheries. Management action included:

1. closure of two small areas to trawling for conservation reasons,
2. closure of all five Southeast management areas to rockfish fishing when harvest limits were reached,
3. Setting open periods and harvest objectives for the NSEI and SSEI area sablefish fisheries.

Detailed information on catch and effort and specific regulatory action taken during 1988 and 1989 is contained in the Reports to the Board of Fisheries for those two years. News releases and Emergency Orders are on file at ADF&G and Department of Public Safety offices throughout the region.

A major activity of this program was the development of proposals for changes to the groundfish regulations. This effort included a comprehensive analysis of all existing fisheries, port sampling, and survey data. A number of proposals for regulatory changes were developed by the staff based upon that analysis.

The Alaska Board of Fisheries considers groundfish regulations every other year. However, since no action was taken on groundfish regulations during the 1986 Board meetings, these regulations had not been thoroughly reviewed since 1984. Because of this long time interval and substantial changes in the fisheries since groundfish regulatory changes were last considered, a number of modifications were needed.

A total of eleven proposals were developed by the staff. These proposals were first introduced to Fish and Game Advisory Committees in Sitka, Petersburg and Ketchikan for review and then presented to the Alaska Board of Fisheries at their meeting in February. All but two were adopted by the Board. An additional sixteen proposals were submitted by the public. All of these required staff review and comment at the Advisory Committee and Board of Fisheries meetings.

Besides review and revision of the Southeast Alaska and Yakutat area groundfish regulations, the Region I Groundfish Project staff assisted in a complete revision of all State groundfish regulations and the compilation of a State-wide groundfish regulations book. One of the major state-wide changes that effected our project was the extension of the Region I groundfish regulatory authority from 140° W. longitude to 147° W. longitude so that State management areas would be consistent with Federal regulatory districts.

### *Logbooks And Skipper Interviews*

This program is conducted by port samplers who are trained to collect specific information from operators of groundfish vessels. Interviews provide summary information from the fisheries in much greater detail than is available from the fish tickets. Information collected includes specific area(s) fished, duration of a trip, total amount of gear fished, average depth, and the total number, or an estimate, of pounds of fish caught by area during a trip. The logbooks, on the other hand, provide detailed set-specific information including depth fished, amount of gear fished, a detailed description of the gear, and number of fish or an estimate of pounds of fish caught by species or species group in each set. Copies of the interview and logbook forms used in this program are included in Appendix A.

All individual interview and logbook records are confidential and are handled and stored accordingly. Even summarized information cannot be released unless there are more than three vessels participating during a given time/area strata. Published information is usually provided only by broad management area, and even then, information may not be released if it appears that doing so may influence the future distribution of the fleet. Interview and logbook information is currently used to assist in making in-season management decisions and for setting future harvest objectives.

### Interviews

Interviews are conducted primarily with participants in the state-managed rockfish and sablefish longline fisheries. The program is voluntary, but most vessel operators cooperate when asked. The information collected is entered on micro computers in Sitka and Petersburg. During the reporting period all rockfish interviews were entered in Sitka while all sablefish interviews were entered in

Petersburg. Analysis of the data is on-going. Summary information will be presented in a Technical Data Report at a later date. For an example of how interview data is compiled and interpreted see Bracken and O'Connell, 1986.

A total of 177 rockfish, 108 sablefish, 26 lingcod, and 2 flatfish interviews were conducted at three ports. Distribution of interview coverage by fishery and port is shown in Table 2.

### Logbooks

The main emphasis of the logbook program was to obtain detailed catch and effort information from the winter flatfish trawl fishery. Participation in the logbook program is mandatory for the trawl fishery as one of the terms of a special permit which must be acquired from ADF&G prior to fishing. Trawl permits are issued for no more than one month at a time with renewal of the permit contingent on the skipper fulfilling the logbook requirement. During the 1987-88 season logbooks were collected from the three trawl vessels which participated in the fishery. Information on a total of 136 individual tows was collected.

Logbooks were also distributed to rockfish and sablefish longline fishermen during the reporting period. Since the program is voluntary in those fisheries, the relative percentage of the fleet participating is small. All longline logbook information collected was converted into the interview summary format for data entry.

The staff has been working toward establishing a micro computer program to enter and retrieve detailed logbook data. Until this program is complete, the logbook information collected from the groundfish fisheries will continue to be summarized and entered using the existing computerized interview programs.

### *Port Sampling*

Port samplers were stationed at the major ports of landing during peak groundfish fishing periods. Specific duties depended to a large extent on the fishery. During the peak of the rockfish fishery samplers were stationed in Sitka and Ketchikan, the major rockfish ports in the region. The port of Craig, which was manned during the peak of the 1987-88 season, was not included this year because of budget limitations. Port samplers were stationed in Petersburg, Sitka, Ketchikan, and Yakutat to monitor the sablefish fisheries.

Port samplers monitoring the rockfish fisheries conducted skipper interviews, collected and edited fish tickets, and also obtained species composition and biological data from the landed catch. Sampling forms used in this program are included as Appendix B.

During the Federally-managed offshore sablefish fishery a sampler's primary responsibility was to collect and edit fish tickets and to verify catch information. During the State-managed sablefish fisheries, port samplers stationed in Sitka, Petersburg, and Ketchikan also conducted skipper interviews. The biological samples taken from the landed catch during previous years were replaced by samples from abundance indexing surveys this year.

Samplers of both State and Federally managed fisheries also collected sablefish tags. ADF&G tags were processed to determine movement and time at large. That information was entered on a computer and also sent to the individuals who returned the tags. All other tags were returned to the originating agencies.

Biological sampling of the landed catch was conducted in Sitka, Ketchikan, and Petersburg. Samples consisted of length, weight, sex, and maturity data, and collection of age structures (otoliths). The number of biological samples of each type by species in each port are shown in Table 2. The actual number of groundfish specimens sampled in each port are presented in Table 3.

Yelloweye rockfish (*Sebastes ruberrimus*) and quillback rockfish (*S. maliger*) dominated the samples with 53% and 30% of the total rockfish numbers, sampled respectively (Table 3.). Length frequency statistics for yelloweye and quillback rockfish sampled during the reporting period are presented in Tables 4 and 5. Samples conducted by port samplers were also used to determine reproductive timing of nearshore rockfish and to determine the sex ratio of the landed catch.

Lingcod, Pacific Cod, and flatfish landings were also sampled. The lingcod and Pacific cod landings were sampled primarily to provide baseline length frequency information. Flatfish landings were sampled to determine species composition, length frequency by species, and to obtain other biological information such as sex ratio and maturity. These data will be presented in detail in future publications.

The number of sablefish and halibut tags collected in each port is shown in Table 6. A total of 472 sablefish tags and 8 halibut tags released by six agencies, including ADF&G, were collected by ADF&G port samplers and biologists during the year. The information from these recoveries will contribute greatly to the knowledge of sablefish and halibut movement coast wide once the data is analyzed. Our port samplers are instructed to ask each skipper they contact about tag recoveries. This effort represents the only comprehensive means to gather sablefish tagging information from fisheries in Alaska. All other agencies currently rely upon voluntary return of tags.

## Resource Assessment

Four resource assessment surveys were completed during the reporting period. Cruise summaries are available for all surveys on request. Commercially valuable fish, with the exception of halibut, were retained from the surveys and sold by the State to help off-set charter costs.

### 1988 CSEO Area Rockfish Survey

The first survey, conducted between July 6 and July 20, 1988 was designed to assess rockfish (*Sebastes sp.*) stocks in the CSEO management area using a chartered fishing vessel with snap-on longline gear. The Project Assistant, Tory O'Connell, was Chief Scientist for this survey. The objectives were to:

1. evaluate "binomial method" longline surveys for detecting changes in fishing success for yelloweye rockfish using "commercial sets" as the statistical population.
2. evaluate methods of estimating rockfish density and determine the relationship between habitat characteristics and fish density.
3. collect biological information on rockfish including age distribution, length distribution, species composition, and reproduction.

Data collected included species composition, catch per unit of effort, length frequency of key species, age structures, and distribution of fish by area and depth. A total of 19 sets of 500 hooks each were made. Four of these were replicates of sets made during 1987 and the remainder were new sets. Thirteen species of rockfish, nine other fish species and four families of invertebrates were captured.

The catch of yelloweye rockfish per hook in 1988 was less than in 1987 for the same sets. Because of the small sample size of replicate sets and the considerable variance in catch rates, it is unclear if this reflects an actual decline in fish abundance. When all sets were compared it was evident that quillback rockfish had replaced yelloweye rockfish as the predominate rockfish species in shallow water (less than 50 fathoms) sets.

Density per unit of habitat (biomass determination) studies were conducted on an isolated pinnacle. The area was extensively charted and then "break away tags" were set on this and a nearby pinnacle to determine if the population was "closed". The short survey period restricted the amount of time devoted to this experiment. As a result, only two tags were recovered and there was no definitive trend in population size as the result of fish removal. It was tentatively determined that considerably

more fishing effort would be needed in order to remove enough fish to estimate the biomass using this method.

#### 1988 NSEI Area Sablefish Survey

The second survey was conducted between August 14 and August 26, 1988. I acted as Chief Scientist for this survey assisted by the Sitka Groundfish Technician, Dave Gordon and the Statewide Groundfish Biometrician, Dave Carlile. This survey was to assess sablefish (*Anoplopoma fimbria*) populations in the NSEI area; the first sablefish survey of this type conducted in the area. A chartered fishing vessel was used and snap-on longline gear was deployed. The sample sites were selected prior to fishing using a stratified random sampling technique. A total of 24 sets of 1,000 hooks each were deployed. Sablefish on every third set were tagged and released, but all other sablefish were retained to help off-set the cost of the charter. During this charter a total of 4,768 sablefish were taken which represents one sablefish for every 5.0 hooks set. A total of 1,286 sablefish were tagged and 311 were used for biological (AWL) samples. Sablefish accounted for over 94% of all fish caught with "idiot" rockfish (*Sebatoobus alascanus*) second in abundance representing only 3% of the total catch.

#### 1989 SSEI Area Sablefish Survey

The third survey was conducted between May 22 and June 5, 1989. Dave Gordon was elevated to the position of Survey Coordinator and acted as Chief Scientist for this survey. I assisted during the first leg and the Ketchikan Groundfish Technician, Deidra Holum, assisted during the second leg. The survey was the second one conducted to assess sablefish (*Anoplopoma fimbria*) populations in that area. It was patterned after our previous sablefish surveys using a chartered fishing vessel and snap-on longline gear.

Preliminary analysis of the results of the 1988 survey in this area had indicated that the variance of catch rates between sets was considerably greater than the variance within sets. This suggested that adding more sets would tend to increase the precision of the results. Therefore, additional sample sites were established and the number of sets was increased by 19 for the 1989 survey. The number of hooks per set was decreased from 1,000 to 500 to allow for the additional sets to be run during the same length survey period.

During the 1989 survey a total of 52 sets of 500 hooks each were deployed. Sablefish on every fourth set were tagged and released, but all other sablefish were retained to help off-set the cost of the charter. A total of 2,226 sablefish were taken, which represents one sablefish for every 12.7 hooks set. A total of 442 sablefish were tagged and another 208 were utilized for biological (AWL) samples.

Sablefish catch rates were 36% lower in the 1989 survey than in 1988 even though that species represented a much higher percentage of the total fish caught during 1989. In the 1989 survey sablefish accounted for nearly 81% of all fish compared to 59% in 1988. "Idiot" rockfish were second in abundance during the 1989 survey, representing 8.5% of the fish taken. Dogfish shark (*Squalus acanthias*) were more prevalent during the 1988 survey, representing 32% of the catch. They were nearly absent from the area in the 1989 survey, comprising only 2% of the catch.

While the preliminary analysis indicates a substantial decrease in both sablefish and dogfish populations between 1988 and 1989, the evidence of a long-term decline is not yet conclusive. Annual surveys will continue to monitor trends in stock conditions.

#### 1989 CSEO Area Rockfish Survey

The 1989 outside area rockfish survey, conducted between June 17, and June 21, 1989, was a major departure from previous rockfish abundance indexing surveys conducted by ADF&G. See Bracken (1988) for a summary of previous rockfish survey work in that area.

This year's survey was a cooperative effort with the NOAA Office of Undersea Research's National Undersea Research Program (NURP) using funding and equipment provided by that program along with personnel and chartered fishing vessels funded by the State. Tory O'Connell was Chief Scientist aided by Dave Gordon, Dave Carlile, and others. The survey was set up to evaluate the use of a submersible and remotely operated vehicle (ROV) as tools for estimating rockfish abundance and inventorying rockfish habitat. These two new methods were employed in conjunction with sets made by a chartered commercial longline vessel to compare the usefulness and comparability of the three methods for determining rockfish abundance. Eighteen submersible transects and seventeen ROV transects were completed during the survey. An additional seven submersible dives were completed to determine bottom topography and identify species present. The work was conducted in five areas near Sitka in a variety of habitat types over a broad depth range.

In general, it was determined that manned submersibles provide more reliable estimates of rockfish abundance than do either longline sets or ROV transects. However, the high operating cost of submersibles may preclude their extensive long-term use. The longlines tended to select for piscivorous fishes, and the ROV had limitations in the rough bottom conditions, weather, and currents commonly encountered along the outer coast of Southeast Alaska. The ROV technology could probably be better used for point sampling of habitat over a broad area than for line transects within an area. This work is continuing with second and third year funding being requested through NURP.

### *On-Board Observers*

The On-Board observer increment funding was redirected during the reporting period to concentrate on organizing our expanding stock assessment programs. This position was transferred from Petersburg to Sitka and the job description changed to reflect the new emphasis. Dave Gordon was selected to assume that responsibility because of his past experience with groundfish survey design as a technician for the project.

No trawl observer trips were conducted during the 1988-89 season as all observer coverage during the year was directed at the new lingcod troll fishery which uses "dinglebar" gear. A total of three lingcod observer trips were made between October 1988 and March 1989. Each trip averaged slightly over two days for a total of seven days at sea. The objective was to monitor sex ratios, maturity stages, length frequencies, and CPUE of lingcod by depth and month. Detailed trip reports were prepared at the end of each trip. As with the interview and logbook data, observer data is confidential and not available for distribution.

### *Other Programs*

The above sections outline the activities conducted in the five primary groundfish programs during the reporting period. As indicated in the introduction to this report, there were other activities conducted by the groundfish project during that time period as well. This section briefly outlines some of those activities.

#### *NMFS Fisheries Monitoring Cooperative Agreement*

The funding contract with NMFS to collect catch information from the EEZ fisheries was renewed for the second year. Funding from that contract was used to station technicians in Sitka, Petersburg, and Ketchikan for four to six months each, and to place a technician in Yakutat for one month during the offshore sablefish fishery. In addition to collecting and editing fish tickets, the technicians funded under this contract monitored the off shore sablefish fisheries and sampled the demersal shelf rockfish fisheries during the peak seasons for those species. They also collect sablefish tags from fishermen during the sablefish seasons.

## North Pacific Fisheries Management Council (NPFMC) Plan Team

Within the period between September 1988 and June 1989 I participated actively with the NPFMC Groundfish Plan Team. From August through mid-December the Plan Team examined stock status reports and compiled a resource assessment document (RAD) which recommended biologically acceptable harvest levels for all Gulf of Alaska groundfish stocks. During this process, I co-authored and presented a rockfish status of stocks report for the Eastern Gulf of Alaska (O'Connell and Bracken 1988) and compiled the demersal shelf rockfish section of the RAD.

In January the Team reviewed regulations to be considered for the 1989 season and developed a Regulatory Impact Review for the regulations which were accepted for further consideration by the NPFMC at their January meeting. In June the Plan Team evaluated a proposal to ban pollock roe stripping in the Gulf of Alaska.

## PMFC Rockfish Management Plan Development

A grant to develop a rockfish management plan for Southeast Alaska was obtained from the PMFC in April 1988. An industry working group was formed with representatives from all active Southeast Alaska rockfish ports. Two meetings were held with industry representatives to discuss management options and make management recommendations. The first meeting was held during June 1988 and was reported in last year's report. During the second meeting, which was held during September, 1989, three proposals for regulatory changes were drafted by the working group. These proposals were submitted to the Board of Fisheries for consideration at the February Board meeting by a representative the rockfish working group. All three proposals were subsequently passed by the Board. A Regional Information Report (Bracken 1989b) provides a summary of the activities of that group and presents the rockfish regulations developed as a result of that process.

Second year funding was secured to explore access limitations for this fishery with emphasis on an individual share quota (IFQ) program. A third meeting was held with the industry Work Group during June 1989. At that meeting plans were made to discuss the IFQ option with fishermen in five Southeast Alaska ports at a series of meetings to be conducted later in the year.

## 1989 Western Groundfish Conference

Two staff members attended the 1989 Western Groundfish Conference in Monterey, California during January. I presented a paper on flounder research and management and Tory O'Connell presented a paper on rockfish life history. Dave Carlile, statewide groundfish biometrician, assisted with the data analysis.

## American Fisheries Society

Tory O'Connell traveled to Vancouver, B.C. in February to attend the American Fisheries Society International Section meeting and present on rockfish management alternatives.

## Canada/U.S. Groundfish Committee Technical Subcommittee

In June 1989 I attended the annual TSC meetings in Ladysmith, B.C., Canada. A summary report on 1988 Alaska groundfish fisheries (Bracken 1989c) was presented at this meeting. The report is on file and available upon request.

## Groundfish Age Reader

Groundfish Project funding was used to support Joan Ried, groundfish age reader in Kodiak, for four months during the reporting period. Most of the emphasis was placed on reading rockfish age structures (otoliths) collected during the CSEO area rockfish stock assessment survey. Aging of rockfish from port samples taken in Ketchikan was also accomplished. The results of this work are still being analyzed and will be reported in later reports.

The age reader traveled to Seattle during the reporting period to work with NMFS age reading technicians on new methods for aging sablefish. Sablefish otoliths were exchanged with other laboratories in Nanaimo, British Columbia and Seattle, Washington to determine the consistency of age readings between readers.

## Dive Projects

The Sitka staff made four dives in Sitka Sound during the winter and spring to look for nest-guarding lingcod. Although that effort was largely unsuccessful, the methods used holds promise and this technique will be repeated again in the future. The project divers also participated in dive activities with other projects and made additional dives throughout the year to maintain proficiency. New dive equipment was purchased to comply with revised ADF&G safety regulations.

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Table 1. Distribution of seasonal personnel funded by the Region 1 Groundfish Project from July 1, 1988 through June 30, 1989.

Port	Jul <sup>w</sup>	Aug <sup>w</sup>	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Sitka	P	P	P	P	P	P	P	PC	PC	BC	BC	B
Petersburg			P	P	P	P	P	P	PC	PC	PC	PC
Ketchikan			P	P	P	P	P	P	P	P	P	P
Yakutat											P	
Kodiak								A	A	A	A	

B = Biologist                      P = Port Sampler                      C = Clerical Support                      A = Age Reader

<sup>w</sup> There was only one seasonal employee on the project during July and August as these are the "slow months" for groundfish landings.

Table 2. Distribution of groundfish skipper interviews and port samples collected by fishery and port in the Southeast area from July 1, 1988 through June 30, 1989.

Port	Interviews	Biological Samples <sup>w</sup>	Otoliths Taken <sup>w</sup>
Ketchikan	90 rockfish 18 sablefish 2 flatfish	45 rockfish 2 flatfish	477 rockfish
Sitka	85 rockfish 36 sablefish 26 lingcod	57 rockfish 9 lingcod	
Petersburg	2 rockfish 54 sablefish	2 rockfish	

<sup>w</sup> Biological samples of rockfish landings range from a few fish to an entire load. Samples included species composition samples, length frequency samples, and/or removal of otoliths.

<sup>w</sup> Represents individual otoliths or otolith pairs collected.

Table 3. Number of individual groundfish measured by ADF&G port samplers in Southeast Alaska by species and port from July 1, 1988 through June 30, 1989.

Species	Petersburg	Sitka	Ketchikan	Total
Pacific Cod	53	451	356	860
Lingcod	1	987	368	1,356
Dogfish	0	0	76	76
Greenling	1	0	0	1
Rockfish				
Bocaccio	0	1	0	1
Copper	1	4	21	26
Black	0	115	57	172
Yelloweye	102	2,513	1,701	4,316
Canary	3	51	24	78
Quillback	17	1,024	1,352	2,393
Tiger	6	70	39	115
China	0	68	19	87
Rosethorn	0	181	38	219
Rougheye	33	58	15	106
Shortraker	3	0	4	7
Red Banded	25	147	15	187
Dusky	1	189	30	220
Yellow Tail	0	14	16	30
Silvergrey	13	57	32	102
Red Striped	0	4	3	7
Sharp Chin	0	5	0	5
Harlequin	0	1	0	1
Yellow Mouth	0	0	2	2
Flatfish				
Starry Flounder	0	0	143	143
English Sole	0	0	27	27
Flathead Sole	0	0	27	27
Yellowfin Sole	0	0	1	1
Rock Sole	0	0	1	1
Total	259	5,940	4,367	10,566

Table 4. Minimum, maximum, and average length of yelloweye rockfish sampled from Southeast Alaska fisheries by port between July 1, 1988 and June 30, 1989.

Port	Minimum Length		Maximum Length		Average Length		Std Dev From Mean		Variance From Mean	
	1988	1989	1988	1989	1988	1989	1988	1989	1988	1989
Sitka	26	30	81	80	54	54	8	7	60	61
Ketchikan	30	32	78	70	56	53	8	7	65	60

Table 5. Minimum, maximum, and average length of quillback rockfish sampled from Southeast Alaska fisheries by port between July 1, 1988 and June 30, 1989.

Port	Minimum Length		Maximum Length		Average Length		Std Dev From Mean		Variance From Mean	
	1988	1989	1988	1989	1988	1989	1988	1989	1988	1989
Sitka	26	29	47	49	38	39	3	3	11	11
Ketchikan	28	25	50	46	38	38	3	3	12	12

Table 6. Sablefish and halibut tags collected by ADF&G personnel in Southeast Alaska ports from July 1, 1988 to June 30, 1989.

Port	----- Originating Agency -----							Total
	ADF&G	Seattle NMFS	Japan	Auke Bay NMFS	Canada	ROK <sup>a/</sup>	IPHC <sup>b/</sup>	
Petersburg	83	55	26	76	24	1	4	269
Sitka	23	10	6	77	4	0	2	122
Ketchikan	20	17	6	24	20	0	2	89
Total	126	82	38	177	48	1	8	480

<sup>a/</sup> Republic of Korea

<sup>b/</sup> International Pacific Halibut Commission

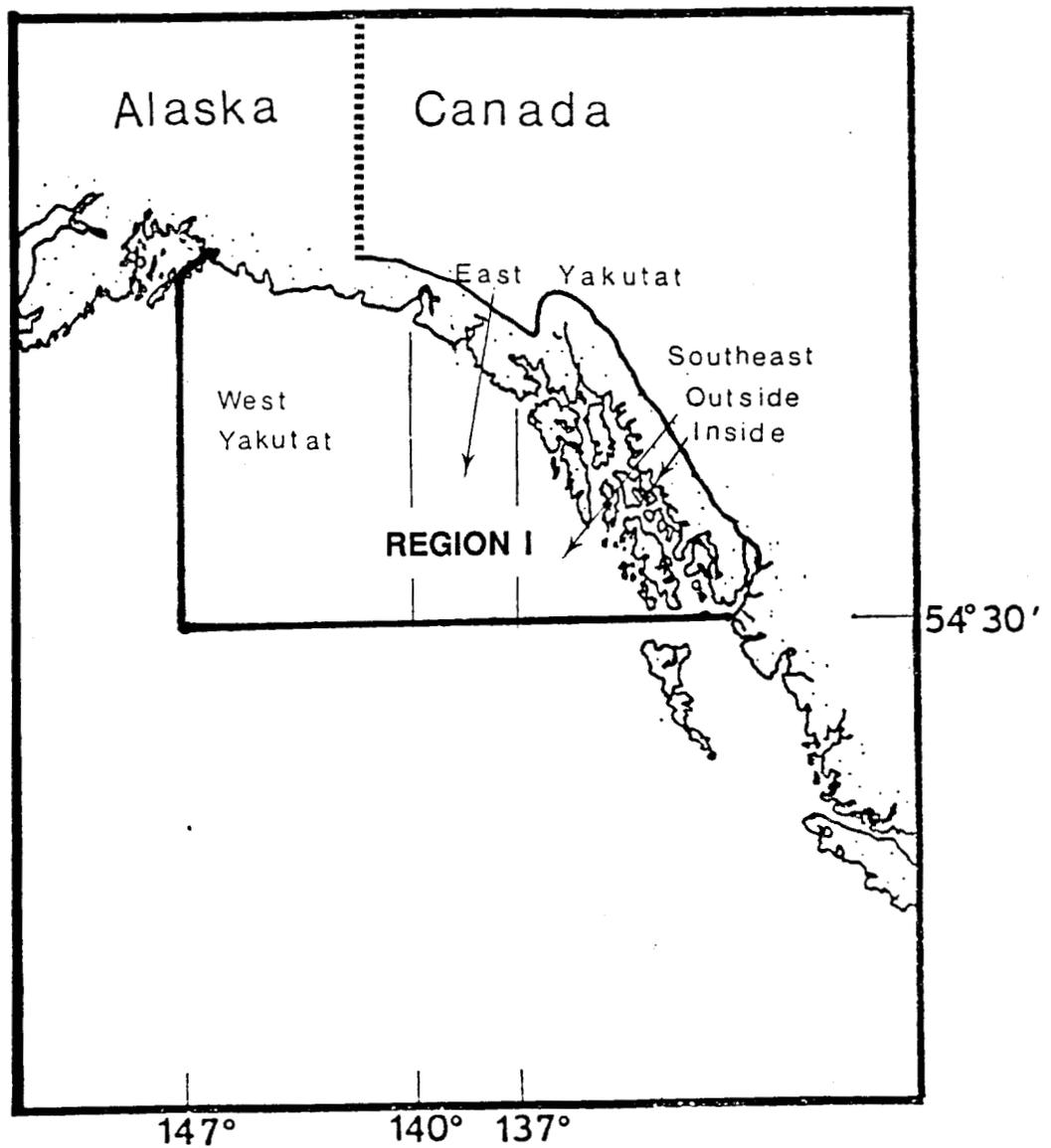


Figure 1. Alaska Department of Fish and Game Region I boundaries and groundfish management areas in the Eastern Gulf of Alaska.

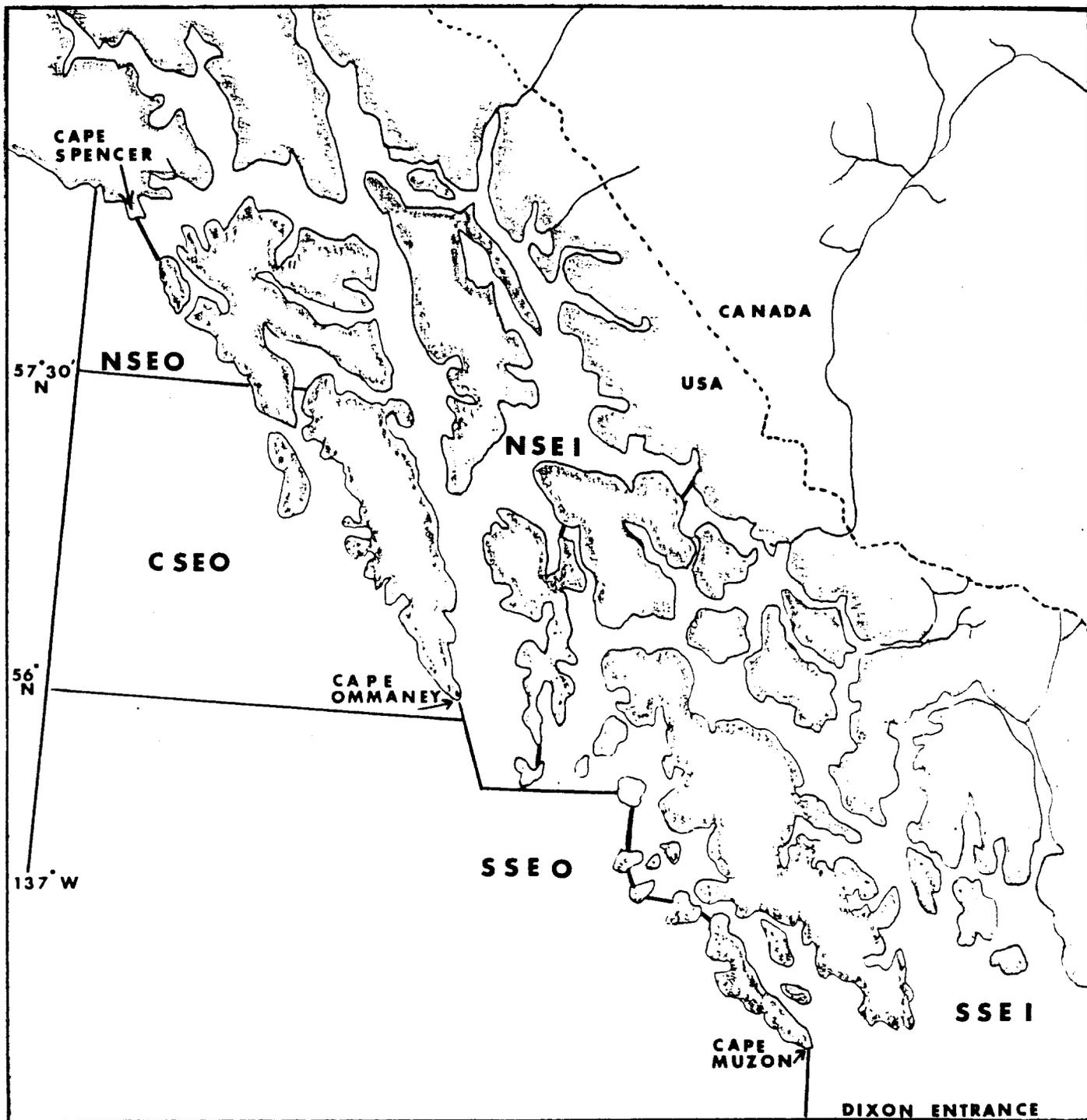


Figure 2. The Southeast Alaska coastline showing Alaska Department of Fish and Game groundfish management areas.

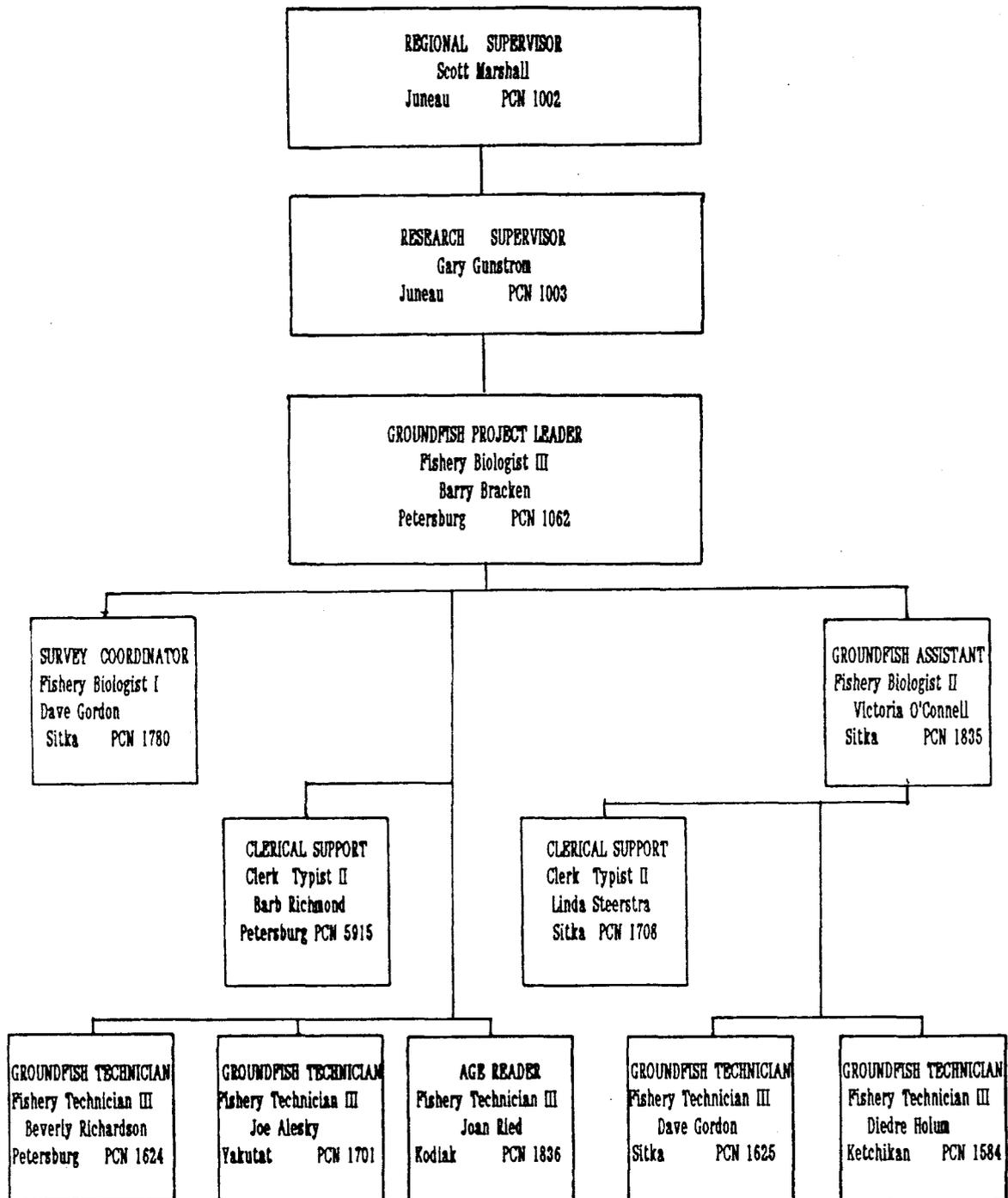


Figure 3. Region I Groundfish project organizational Chart, FY89

**APPENDICES**

SABLEFISH INTERVIEW FORM

YEAR \_\_\_\_\_

FISHERY \_\_\_\_\_

DATE OF LANDING \_\_\_\_\_

VESSEL \_\_\_\_\_ ADF&G # \_\_\_\_\_ DATE OF INTERVIEW \_\_\_\_\_

PERMIT HOLDER \_\_\_\_\_ PROCESSOR \_\_\_\_\_ PORT OF LANDING \_\_\_\_\_

SKIPPER \_\_\_\_\_ DAYS/HRS FISHED \_\_\_\_\_ LOC OF INTERVIEW \_\_\_\_\_

PERSON INTERVIEWED \_\_\_\_\_ LOGBOOK ABOARD Y/N COLLECTED Y/N DISTRIBUTED Y/

GEAR LL/POTS SNAPON OR FIXED TYPE OF SYSTEM \_\_\_\_\_

HOOK TYPE CIRCLE J TARA MIXED HOOK SPACING \_\_\_\_\_ IN SKATE LENGTH \_\_\_\_\_ F

BAIT: HERRING SQUID OCTUPUS OTHER \_\_\_\_\_ FRESH FROZEN SALTE

CONVENTIONAL	SNAP-ON	POTS
# HOOKS/SKATE _____	# HOOKS/SET _____	# POTS/SET _____
# SKATES SET _____	# SETS/TRIP SET _____	# POTS/TRIP SET _____
# SKATES RETRIEVED _____	# SETS/TRIP RTRVD _____	# SETS/TRIP RTRVD _____

TOTAL # HOOKS (POTS) SET

TOTAL # HOOKS (POTS) RETRIEVED

LOST GEAR Y/N NO OF HOOKS LCST \_\_\_\_\_ WHY \_\_\_\_\_

STA	AREA	# HOOKS IN AREA	AVG DEPTH	# OF FISH	APROX ACC	ESTIMATE POUNDS	DR	ACTUAL POUNDS (FT)	DR

RECOVERD TAGS? \_\_\_\_\_

INCIDENTAL SPECIES \_\_\_\_\_

COMMENTS (ESP THOSE AFFECTING CPUE, SPECIFIC AREA FISHED) \_\_\_\_\_

DATA QUALITY \_\_\_\_\_ (1-5) (1=EXCELLENT, 5=POOR)

FISH SAMPLED Y/N OTOLITHS TAKEN Y/N SAMPLER \_\_\_\_\_

INTERVIEW # \_\_\_\_\_

LONGLINE VESSEL INTERVIEW FORM

Vessel Name \_\_\_\_\_ Date \_\_\_/\_\_\_/\_\_\_  
 Name of Captain \_\_\_\_\_ mm/dd/yy  
 ADF&G # \_\_\_\_\_  
 Port \_\_\_\_\_ Processor # \_\_\_\_\_  
 Target Species \_\_\_\_\_ Days Fished \_\_\_\_\_  
 LB Aboard (Y / N) LB Pages Collected (Y / N) LB Distributed (Y / N)

GEAR DESCRIPTION

Gear: LL Bait (Herring Squid Octopus) \_\_\_\_\_  
Snap-on, Fixed \_\_\_\_\_ Hook Type (Circle, J. Tara, Mixed) \_\_\_\_\_  
 Hook Size \_\_\_\_\_ Hook Spacing (feet) \_\_\_\_\_

Fixed Gear

Snap - On

Hooks/Skate	_____
Skates/Set	_____
Total Skates/Trip	_____

Hooks/Set	_____
Total Sets/Trip	_____
Total Hooks/Trip	_____

CATCH & SAMPLING SUMMARY

Mgmt Area	Stat Area	% Effort in Area	Ave. Depth (fms)	Species	Number	Pounds	Dress Code	Number * Otoliths
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____

Fish Sampled (No / Yes) \_\_\_\_\_ Sampler Initials \_\_\_\_\_

Data Quality \_\_\_\_\_ (1-5: 1 = excellent, 5 = poor)

Comments:

\* Sample #: \_\_\_\_\_



# ALASKA LONGLINE — POT FISHERY LOGBOOK

**VESSEL NAME** \_\_\_\_\_ **TARGET SPECIES** \_\_\_\_\_  
**VESSEL NUMBER** \_\_\_\_\_ **PORT OF LANDING** \_\_\_\_\_  
**SKIPPER NAME** \_\_\_\_\_ **DATE LEFT PORT** \_\_\_\_\_ **CREW SIZE** \_\_\_\_\_  
(include skipper)  
**SYSTEM USED** \_\_\_\_\_  
**DATE OF LANDING** \_\_\_\_\_

Appendix A.4

LONGLINE GEAR			
HOOK SIZE/TYPE	SKATE LINE SIZE	HOOK SPACING	NUMBER OF HOOKS/SKATE
/			

POT GEAR		
POT DIMENSIONS (ft)	GROUNDLINE WT. OR DIAMETER	POT SPACING(ft)

BAIT(S) USED	%

SET OR BOUY NO.	DATE SET	TIME SET	DATE HAILED	TIME HAILED	POSITION COMPASS OR LORAN	AVERAGE DEPTH(ft)	NO. SKATES OR POTS RUN	CATCH BY SPECIES IN NUMBERS				COMMENTS	
								TARGET					
-25-													

ADDITIONAL COMMENTS

