STATE OF ALASKA
GROUNDFISH FISHERIES

ASSOCIATED INVESTIGATIONS IN 2000

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of the Technical Sub-committee
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STATE OF ALASKA GROUNDFISH FISHERIES AND ASSOCIATED INVESTIGATIONS IN 2000

AGENDA ITEM VII. REVIEW OF AGENCY GROUNDFISH RESEARCH, STOCK ASSESSMENT, AND MANAGEMENT

A. Agency Overview

1. Description of the State of Alaska Commercial Groundfish Fishery Program

The Alaska Department of Fish and Game (ADF&G) has jurisdiction over all commercial groundfish fisheries within the internal waters of the state and to three miles offshore along the outer coast. A provision in the federal Gulf of Alaska (GOA) Groundfish Fishery Management Plan (FMP) gives the State of Alaska limited management authority for demersal shelf rockfish in the federal waters east of 140° W. longitude. Council action in 1997 removed black and blue rockfish from the Gulf of Alaska FMP so the state now manages these species in both state and federal waters of the GOA. The state also manages the lingcod resource in both state and federal waters of Alaska. Other groundfish fisheries in Alaskan waters are managed by the federal government or in conjunction with the federal management of the adjacent Exclusive Economic Zone (EEZ). The information related in this report is from the state-managed groundfish fisheries only.

The State of Alaska is divided into three maritime regions for marine commercial fisheries management. The Southeast Region extends from the Exclusive Economic Zone (Equi-distant line) boundary in Dixon Entrance north and westward to 144° W. longitude and includes all of Yakutat Bay. This is a change from recent years when the Central Region began at 140° W. longitude. The Central Region includes the internal waters of Prince William Sound (PWS), Cook Inlet, and Bristol Bay and the Outer District off the Kenai Peninsula. The Westward Region includes all territorial waters of the Gulf of Alaska west of Cape Douglas and includes Kodiak Island, the Aleutian Islands, and the Bering Sea.

a) Southeast Region

The Southeast region commercial fisheries groundfish project is based in Sitka with the groundfish project leader, assistant project leader, and two port biologists located there. Seasonal port samplers and data entry staff were employed in Petersburg, Ketchikan, Sitka, and Craig. The project also received biometrics assistance from the regional office in Douglas.

The Southeast Region's groundfish project has responsibility for research and management of all commercial groundfish resources in the territorial waters of the Eastern Gulf of Alaska. The project also cooperates with the federal government for management of the waters of the adjacent EEZ. The project leader participates as a member of the North Pacific Fisheries Management Council's Gulf of Alaska Groundfish Plan Team and produces the annual stock assessment for demersal shelf rockfish for consideration by the North Pacific Fishery Management Council.

Project activities center around fisheries monitoring, resource assessment, and in-season management of the groundfish resources. In-season management decisions are based on data collected from the fisheries and resource assessment surveys. Primary tasks include fish ticket collection, editing, and data entry for both state and federal-managed fisheries; dockside sampling of sablefish, lingcod, Pacific cod, and rockfish landings; skipper interview and logbook collection and data entry; and biological studies of important commercial species. Five resource assessment surveys were conducted during 2000. Funding for the Southeast groundfish project comes from NOAA Grants NA77FM0209, NA76FI0210 and NA67FN0441B and AKFIN AR 41713/GR 41934 NA97FN0121, CFDA 11-437.

b) Central Region

Central Region groundfish staff are headquartered in Homer and are comprised of a regional groundfish management biologist, a regional shellfish/groundfish research project leader, a groundfish fish ticket entry position, and several commercial catch samplers. An area management biologist is also located in Cordova, a seasonal part-time sampler is located in Seward, and regional support comes from Anchorage. The research project leader also functions as a member of the North Pacific Fishery Management Council's Gulf of Alaska Groundfish Plan Team.

Groundfish responsibilities in Central Region include research and management duties for most groundfish species occurring in territorial waters of Central Region. Within Central Region, groundfish species of primary interest include sablefish, rockfish, pollock, Pacific cod, and lingcod. Stock assessment data are collected through port sampling, acoustic surveys, and ADF&G trawl and longline surveys. Commercial harvest data (fish tickets) are processed in Homer for state and federal fisheries landings to Central Region ports. The development of a state waters Pacific cod fishery in 1997 has provided an extended opportunity for smaller vessels fishing pot and jig gear. Sampling this fishery has become a primary focus of port samplers.

c) Westward Region

The Westward Region Shellfish management and research staff is located in Kodiak and Dutch Harbor, with seasonal dockside sampling in Chignik, Sand Point, and King Cove. The *R/V Resolution* and *R/V K-Hi-C* are home ported in Kodiak and conduct a variety of groundfish related activities in the waters around Kodiak, the south side of the Alaska Peninsula, and in the eastern Aleutian Islands.

Major groundfish activities include fish ticket editing and entry for approximately 11,000 tickets from both state and federal fisheries: analysis of data collected on an annual multi-species trawl survey encompassing the Kodiak archipelago, Alaska Peninsula, and Eastern Aleutians; management of the black rockfish, state water Pacific cod, and Aleutian Island sablefish fisheries; conducting dockside interview and biological data collections from commercial groundfish landings; and a number of research projects.

In addition, the Westward Region has a member on the North Pacific Fisheries Management Council's Bering Sea/Aleutian Island Groundfish Plan Team (Ivan Vining) and the Gulf of Alaska Groundfish Plan Team (David Jackson).

d) Headquarters

ADF&G personnel continued to collect, review, edit and amend, data capture, and archive all ADF&G fish tickets submitted to local offices. These tickets include those required as well as tickets voluntarily submitted by EEZ operators.

In 1998 ADF&G entered into a contract with the Pacific States Marine Fisheries Commission to expand previous data collection and management duties previously carried out under PACFIN. This new contract, which funds most of the groundfish fisheries data collection and analysis by ADF&G, is part of the Alaska Fisheries Information Network (AKFIN). It specifically supports the enhancement of the fish ticket information collection effort and includes: GIS database development and fishery data analysis, catch and production database development and access, age reading laboratory, database management, administration, Bering sea crab data collection and reporting, various fishery economic projects, and regional fishery monitoring and data management.

Local ADF&G personnel in nine locations throughout the state of Alaska (Craig, Ketchikan, Petersburg, Sitka, Juneau, Seward, Homer, Kodiak, and Dutch Harbor) maintained close contact with fishers, processors, and enforcement to maintain a high quality of accuracy in the submitted fish ticket records. Following processing, the electronic data was transferred to Headquarters on a regularly scheduled basis. The research analyst working with this project works as part of a team to maintain a master statewide groundfish fish ticket database. Data feeds to Headquarters were merged to this master database. Data was routinely reviewed for accuracy with corrections applied as required. Within the confines of confidentiality agreements, raw data was distributed to the Alaska Regional office of National Marine Fishery Service (NMFS-ARO and NMFS_AFSC), the North Pacific Fishery Management Council (NMFS), the Commercial Fisheries Entry Commission (CFEC), the Pacific States Fisheries Information Network (PACFIN), and the AKFIN Support Center on a regularly scheduled basis. Summary groundfish catch information was also provided back to regional ADF&G offices as well as to the State of Alaska Board of Fish, NMFS, NPFMC, and the AKFIN Support Center.

The ADF&G Gene Conservation Laboratory continued studies on genetic diversity and gene flow for a variety of groundfish species in 2000. Efforts focused on black rockfish, light and dark dusky rockfish, and pollock.

2. Age Determination Unit

The ADFG's centralized, statewide age reading program at the Age Determination Unit (ADU), continued with baseline improvements to physical work spaces, strengthening and broadening reader skills, inventorying and minimizing a backlog of age structures collected in the 1980s, in addition to reading an ever-increasing volume of current samples. In 2000, six people were directly employed for approximately 40 work months to read groundfish and invertebrate age structures and substantial associated work. With only two highly experienced age readers on staff (total 14 months effort with less than ½ available to age-reading of structures), a great amount of time continues in training age-readers and testing their progress. An additional position has been requested and is expected to receive funding for FY02.

Otolith sampling has increased in both Southeast (Region I) and Southcentral (Region II) Alaska, with receipts at the ADU remaining high (Figure 1). The increases were dominated by lingcod, pacific cod, pollock, rougheye, shortraker, and sablefish. These species are considered difficult to age, therefore this increasing volume of age structures doubly impacts the ability to process all structures within an inventory year.

The ADU continues to develop its comprehensive database (Oracle platform) with progress expected to increase in 2001. Its primary purpose is to provide easier access for in-house handling of inventory, age data, and quality control data, however one main feature will be integration with regional databases for routine off-hour downloads of new or updated age data to constituents.

Calibration of all readers occurs periodically through informal at-scope sessions for in-house readers, yearly when remote-reading staff in Kodiak and Homer gather in Juneau to work with local ADU staff, or biennially with attendance of CARE workshops.

Quality of age data are routinely assessed through second-reading 20% of the sample, either by the initial-reader (if they have demonstrated consistency in the past) or by an experienced second-reader. If species-specific control limits are transgressed, additional specimens are reviewed and resolved. Annual and quintennial within and between-reader testing occurs for all readers, to assess drift in application of criteria over time.

The ADU has been working on refining criteria for several challenging species. We believe data for difficult species will benefit from re-evaluation after more years of experience are achieved by a reader or laboratory. Sablefish is one species undergoing re-reading of prior years samples with belief that it is resulting in "better data." Pollock was elevated to review status for age-reading criteria early in 2000, when a between-lab precision check of 200 specimens revealed error suggesting that dramatically different criteria were being utilized in producing age data. In this comparison, the ADU staff consistently produced higher estimates of age for pollock. Since, the ADU has conducted substantial re-evaluation of their criteria, and feel that, if anything, we may yet be slightly underestimating the actual age of the species. A summary of this work and age-reading criteria will be prepared in the near future.

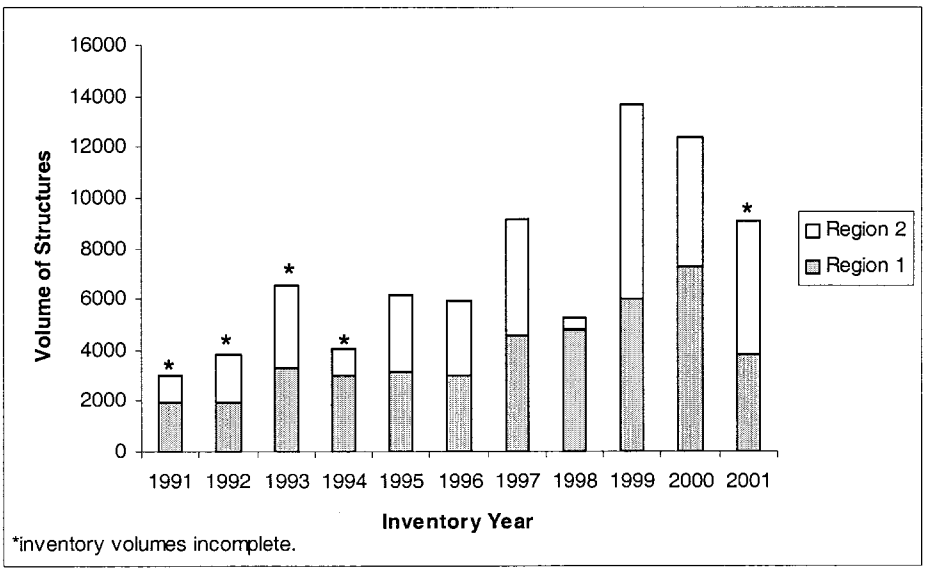

Figure 1. Age structure inventory received from Region 1 & 2.

a) Description of the State of Alaska recreational groundfish fishery program (Sport Fish Division)

ADF&G has jurisdiction over all recreational groundfish fisheries within the internal waters of the state, in coastal waters out to three miles offshore, and throughout the EEZ. The Alaska Board of Fisheries extended existing state regulations governing the sport fishery for all marine species into the waters of the EEZ off Alaska in 1998. This was done under provisions of the Magnuson-Stevens Fishery Conservation and Management Act, which stipulate that states may regulate fisheries that are not regulated under a federal fishery management plan or other applicable federal regulations.

Most management and research efforts are directed at halibut, rockfish, and lingcod, the primary species targeted by the recreational fishery. Statewide data collection programs include a mail survey to estimate overall harvest (in number) of halibut, rockfish, lingcod, and sharks, and a mandatory logbook to assess harvest of the same species in the charter boat fishery. The Assistant Director of the Division of Sport Fish (Rob Bentz), located in Juneau, takes the statewide lead in federal-state jurisdictional management issues.

Regional programs with varying objectives address estimation of recreational fishery statistics including harvest and release magnitude and biological characteristics such as species, age, size, and sex composition. There are essentially two maritime regions for marine sport fishery management in Alaska. The Southeast Region extends from the Exclusive Economic Zone (Equi-distant line) boundary in Dixon Entrance north and westward to Cape Suckling, at approximately 144° W. longitude. The Southcentral Region includes state and federal waters from Cape Suckling to Cape Newenham, including Prince William Sound (PWS), Cook Inlet, Kodiak, the Alaska Peninsula, and Bristol Bay.

3. Southeast Region Sport Fish

Regional staff in Douglas coordinate a data collection program for halibut and groundfish in conjunction with a regionwide chinook salmon harvest studies project. The project leader is Mike Jaenicke while assistant project biologists are also located in Ketchikan (Dennis Hubartt) and in Juneau (position currently vacant). About 18 technicians at major ports in the Southeast region interview both anglers and charter operators and then collect data from sport harvests of halibut and groundfish while also collecting data on sport harvests of salmon. Data collected on groundfish are limited to species composition, length, and sex; no otoliths or other age structures are collected. Data are provided to the Alaska Board of Fisheries, other ADF&G staff, the public, and a variety of other agencies such as the NPFMC.

Area management biologists in Yakutat, Haines, Sitka, Juneau, Petersburg, Klawock, and Ketchikan are responsible for groundfish management in those local areas. In general, sport fisheries for groundfish are not actively managed inseason.

4. Southcentral Region Sport Fish

The Southcentral Region groundfish staff is headquartered in Homer, and consists of the management and research biologist (Scott Meyer) and harvest assessment project assistant (Charlie Stock). The project biometrician (Pat Hansen) is located in Anchorage. Six seasonal technicians collected data from the sport harvest at major ports in the region. Two technicians located in Homer read all groundfish age structures.

Southcentral region staff are responsible for research on sport halibut and groundfish fisheries and management of groundfish fisheries in state and federal waters. For all species, the lack of stock assessment information has precluded development of abundance-based fishery objectives. As a result, management is based on building a long-term, sustainable regulatory framework and inseason management action has generally been unnecessary.

Ongoing assessment of sport harvest and fishery characteristics at major ports throughout the region is the primary activity. Staff collect data from harvested halibut, rockfishes, lingcod, and sharks, and interview anglers and charter boat operators. All age reading is done in Homer using project funds, and the project leader and assistant are active participants in the Committee of Age Reading Experts (CARE). Normal duties also include providing sport halibut harvest statistics to the International Pacific Halibut Commission (IPHC) and NPFMC, coordinating development and analysis of the statewide charter logbook program and statewide harvest survey, working with Alaska Board of Fisheries, advisory committees, and local fishing groups to develop local area management plans (LAMPs), drafting and reviewing proposals for recreational groundfish regulations, and dissemination of information to the public.

B. By Species

1. Pacific cod

a) Research

Catch rate and biological information is gathered from fish ticket records, port sampling programs, a tagging program, and during stock assessment surveys for other species. A mandatory logbook program was initiated for state waters of Southeast Alaska in 1997 to provide a relative index of CPUE. Commercial landings in Southeast, Central, and the Westward Region are sampled for length, weight, age, sex, and stage of maturity.

The Westward Region has continued the cod-tagging program that was initiated in 1997 in the Central and Western Gulf of Alaska. Approximately 2400 fish were tagged in 2000, bringing the total number of tags released to 6,600. By year's end, 332 tags had been recovered. This project is continuing in 2001. Results to date show that while the vast majority of Pacific cod are recovered within 15 km of their tagging location, much longer recapture distances are possible. Several fish were recaptured more than 500 kms from their tagging location.

b) Management

Regulations adopted by the Alaska Board of Fisheries during November 1993 established a guideline harvest range (GHR) of 340 to 570 mt for Pacific cod in the internal waters of Southeast Alaska. The GHR was based on average historic harvest levels rather than on a biomass-based ABC estimate.

Cod along the outer coast are managed in conjunction with the Total Allowable Catch (TAC) levels set by the federal government for the adjacent EEZ. However, there are gear restrictions in state waters in PWS, lower Cook Inlet, and around Kodiak Island to reduce crab bycatch.

In 1996, the Alaska Board of Fisheries adopted state water Pacific cod management plans for fisheries in five groundfish areas, Prince William Sound, Cook Inlet, Kodiak, Chignik, and South Alaska Peninsula. Under these plans, participation is not restricted to vessels qualified under the federal moratorium program. Included within the plans were season, gear, and harvest specifications. The fishing seasons are prosecuted after the federal season, which generally closes in the spring. The annual guideline harvest levels (GHLs) are based on the estimate of allowable biological catch (ABC) of Pacific cod as established by the NPFMC. The initial GHLs were set at 15% of the Western Gulf ABC to be reserved for the South Alaska Peninsula Area, 15% of the Central Gulf ABC to be apportioned between the Kodiak, Chignik, and Cook Inlet Areas, and 25% of the Eastern Gulf ABC for the Prince William Sound Area.

Additional regulations include a 58' vessel size limit in the Chignik and South Alaska Peninsula Areas and allocations between gear types in Kodiak, Cook Inlet, and Prince William Sound. The fishery management plans also provided for removal of restrictions on exclusive area registrations, vessel size, and gear limits after October 31 to increase late season production.

Efforts have increased to collect biological data through port sampling. In addition, observers are used on day-trips to document catches and at-sea discards in the nearshore pot fisheries.

c) Fisheries

Most of the Pacific cod harvested in Southeast Alaska and the North Gulf District of the Cook Inlet Area is taken by longline gear. Pots are the dominant gear in the Cook Inlet District and in the Prince William Sound area. In the Westward Region, trawl gear takes over 60% of the harvest, with the remainder split between longline, jig, and pot gear. Prior to 1993 much of the cod taken in Southeast was utilized as bait in fisheries for other species. Pacific cod harvested since that time is roughly evenly divided between bait use and human consumption. In other areas of the state, Pacific cod are harvested in both state and federal waters and utilized primarily as food fish. Harvests of Pacific cod totaled 268 mt in the Southeast state-managed fisheries during 2000. The 2000 GHLs for the Cook Inlet and Prince William Sound state-managed Pacific cod harvest were set at 980 mt and 1338 mt respectively. Harvest from the Central Region state-managed Pacific cod fisheries totaled 521 mt from Cook Inlet and 132 mt from PWS. Harvest from the 1999 state managed fishery in the Kodiak Area totaled 4,890 mt, while 2,927 mt of cod were harvested in the Chignik Area, and the South Alaska Peninsula Area harvest totaled 5,389 mt. The Kodiak and South Alaska Peninsula Areas obtained their maximum GHL 'step up' provisions for 2000 and all subsequent years. The Kodiak Area will receive 12.5% of the Central Gulf ABC and the South Alaska Peninsula will receive 25% of the Western Gulf ABC in 2000 and all future years. Prince William Sound, Chignik, and Cook Inlet will remain at their current percentages of the Federal TAC for 2000.

2. Rockfishes

Rockfishes are managed under three assemblages: demersal shelf (DSR), pelagic shelf (PSR), and slope rockfish. Demersal Shelf Rockfish include the following species: yelloweye, quillback, china, copper, rosethorn, canary, and tiger. Pelagic shelf rockfish include black, blue, dusky, yellowtail, and widow. Black and blue rockfish have recently been removed from the PSR assemblage in the federal fisheries management plan and placed totally under state management. Slope rockfish contain all other *Sebastes* and *Sebastalobus* species.

a) Research

Detecting spatial structure in the genetic variation of some marine fishes is challenging as populations are often closely related through high gene flow and the relationships between populations may change over years. However, recent advances in molecular markers provide a large array of potentially valuable approaches to address these questions. The Alaska Department of Fish and Game gene conservation laboratory is currently conducting studies of spatial and temporal variation in dusky and black rockfishes using analyses of allozymes and microsatellite DNA. Investigations of dusky rockfish are focusing on the genetic relationships and level of gene flow between the light and dark forms. Studies of black rockfish are investigating the spatial structure throughout the range of the species from the Pacific Northwest through the Bering Sea. We are also collaborating on a study of gene diversity of quillback rockfish with colleagues from the University of Puget Sound.

During 2000, sample collection efforts were completed for black rockfish. We now have an extensive representation of samples from Oregon through the Alaska Peninsula that should provide for a comprehensive analysis of the species. Preliminary statistical analyses have been conducted and indicate significant differences among collections. The project will now move into the final analysis and reporting phase. A manuscript and final report will be prepared during 2001. Microsatellite and allozyme analyses of light and dark dusky rockfish is now complete for both color morphs from the eastern and western Gulf of Alaska. Results indicate significant isolation between the light and dark gene pools in the western Gulf of Alaska. Collections from the eastern Gulf of Alaska include individuals with intermediate genotypes suggesting some gene flow between forms. This project is also in the final analyses and reporting phase. Funding for this project was provided by the *Exxon Valdez* Trustee Council Restoration Project 252 , National Marine Fisheries Service, and the State of Alaska (contact Lisa Seeb).

ADF&G port sampling, skipper interview, and logbook programs for rockfish fisheries continued in Southeast Alaska in 2000. The logbook and interview programs are designed to furnish detailed catch and effort information, to estimate at-sea discards, and to obtain more detailed information regarding specific harvest location. The port sampling program provides species composition from the landed catch and an opportunity to collect biological samples. Otoliths were obtained from principal demersal shelf rockfish species and black and dusky rockfishes and sent to the age-reading laboratory in Juneau for age determination. Data from these programs is entered onto a database in Sitka. In 2000, 1,864 yelloweye, 1,209 quillback, 520 dusky, 77 rougheye rockfish, 50 shortraker, and 527 black rockfish were sampled for age, weight, length, sex, and maturity (contact Mike Vaughn).

Port sampling of rockfish in Central Region during 2000 occurred in Homer, Seward, Whittier, and Cordova. Efforts during the first half of the year primarily sampled slope and demersal species, however, during the last half of the year, sampling focused primarily on black rockfish. Additional sampling occurred during the Cook Inlet and PWS trawl and sablefish longline surveys. Sample data collected included species, length, sex, and gonad condition. Otoliths were collected from most sampled fish. A new port sampling position was hired in Seward during July 1998.

The Westward Region continued its port sampling of the commercial rockfish harvest in 2000. Most dockside sampling looked at black rockfish, although some yelloweye, and light and dark dusky rockfish were also sampled. Skippers were interviewed for information on effort, location, and bycatch. Length, weight, gonadal and ovarian maturity, and otolith samples were collected (contact Carrie Worton). Otoliths collected during the 2000 season are currently being aged by staff from the Kodiak office. Genetic sampling of 100 black rockfish delivered to the port of Chignik Bay continued. Regionwide genetic sampling first begun in 1998.

The use of Quester Tangent Corporation habitat mapping equipment on Westward Region department research vessels which began in 1999 became routine in 2000. Besides being deployed during other projects, 10 days were spent dedicated to mapping reef areas, including a cooperative study with the University of Alaska comparing the performance of the Quester Tangent equipment and the Biosonics VBT system (contact Dan Urban).

The Division of Sport Fish—Southcentral Region continued collection of harvest and fishery information on rockfish as part of the harvest assessment program. The objectives of this program include estimation of 1) species, age, sex, and size composition of recreational rockfish harvests at major Gulf of Alaska ports, and 2) the geographic distribution of harvest by each fleet. Ports sampled in 2000 included Seward, Valdez, Whittier, Kodiak, and Homer. In 2000, 770 black rockfish, 710 yelloweye rockfish, and 589 rockfish of other species were sampled for age, weight, length, sex, and maturity data. Port samplers in Valdez and Homer also collected genetics samples from black and yelloweye rockfish for ADF&G genetics staff in Anchorage (contact Scott Meyer).

The Division of Sport Fish—Southeast Region continued to collect catch and harvest data from rockfish as part of a marine harvest onsite survey program with rockfish harvests tabulated back to 1978 in some selected ports. Data collected in the program include statistics on effort, catch, and harvest of the primary rockfish species commonly taken by Southeast Alaska anglers. Ports sampled in 2000 included Juneau, Sitka, Craig/Klawock, Wrangell, Petersburg, and Ketchikan. Primary species harvested in Southeast Alaska included yelloweye, black, and quillback rockfish (contact Mike Jaenicke).

b) Stock Assessment

Results of the 1999 line transect survey were analyzed and used to recommend harvest levels for demersal shelf rockfish (DSR) in the Southeast Outside Subdistrict for 2000. In the southern southeast outside area, which had not been surveyed since 1994, the estimated density of adult yelloweye increased 38%, from 1,173 adult yelloweye per km^2 to 1,879. Survey techniques have changed considerably since 1994 and some of this increase may be attributable to these changes as well as the larger sample size in 1999. The Fairweather density estimates dropped markedly from the 1997 survey estimates. Density declined 44% from 4,176 adult yelloweye per km^2 to 2, 323. More seafloor was covered in 1999 than in 1997 but fewer fish were seen and there was a 54% drop in the number of yelloweye per meter traversed. Estimates of rocky habitat were revised using a combination of information available from submersible dives, sidescan data, NOS data, and commercial fishery logbook data. Areas were digitized into GIS instead of using grids. Changes from previous estimates were significant and varied by area with some areas showing an increase and some a decrease in estimated area of rock habitat. The overall change was down 46%, with 3,095 km^2 compared to 5,758 km^2. The exploitable biomass estimate for yelloweye rockfish in the Southeast Outside Subdistrict, based on the sum of the lower 90% confidence limits of biomass is 15,100 mt. The total allowable catch limit for DSR for 2000 was set at 340 mt.

The Central District groundfish staff is developing a focused rockfish survey to extend at least the next three summers. This project will use tagging and SCUBA to explore habitat-based assessment of black rockfish in nearshore waters of southcentral Alaska (contact Bill Bechtol).

c) Management

The DSR assemblage is the component of the rockfish complex most actively managed by the state in Southeast Alaska at this time. Rockfish management for this group is based upon a combination of guideline harvest ranges, gear restrictions, and trip limits. The state has management authority for

demersal shelf rockfish in both state and federal waters of Southeast Alaska. Directed harvest of demersal shelf rockfish is restricted to hook-and-line gear. Separate harvest ranges have been established for each of six Southeast Alaska management areas based upon the best available information on the condition of rockfish stocks in each area. Regulations adopted in 1994 include reduced GHRs in internal waters, reduced weekly trip limits from 7,500 pounds per vessel to 6,000 pounds per vessel (12,000 pounds in EYKT), and added a requirement that logbook pages must be submitted with fish tickets from each fishing trip. The 2000 TAC for DSR was 340 mt in Southeast Outside. A significant portion of the harvest is taken as bycatch mortality during the halibut fishery and 125 mt of the TAC was reserved for landed and unreported bycatch. An additional 50 mt of DSR are available for harvest in the Southeast inside waters. In Southeast Alaska all other rockfish are managed under an area-wide annual harvest limit of 500 mt.

The implementation of the federal IFQ fishery for halibut impacted the directed DSR fishery. Previous to 1995 DSR were managed based on three seasonal allocations: January, July, and October. Because of the bycatch provisions inherent in the IFQ fishery ADF&G does not allow directed fishing for DSR during the IFQ season, March 15 - November 15. The directed DSR fishery quota is now allocated with 2/3 of the quota apportioned to the January 1- March 15 season and 1/3 of the quota apportioned to the November 16- December 31 season (contact Tory O'Connell).

The Alaska Board of Fisheries adopted several new regulations regarding rockfish during their 2000 meeting cycle. Full retention of rockfish is now required in all commercial fisheries in Southeast Alaska. All rockfish taken on commercial gear in internal waters of southeast must be retained, weighed, and documented on a fish ticket. Profits from fish in excess of legal limits (and bycatch limits) must be forfeited to the State. Full retention of rockfish in outer coastal waters is limited to the demersal shelf rockfish assemblage. This was in an effort to keep regulations consistent with federal regulations in areas where fisheries overlap. Further, the BOF prohibited live fish fisheries for groundfish in Southeast. The department had originally proposed prohibiting live fish fisheries for rockfish only, but the BOF extended the prohibition to all groundfish species.

Rockfish in Central Region's Cook Inlet and PWS Areas are managed under their respective Rockfish management plans. Plan elements include a directed fishery GHL of 68 mt followed by a bycatch only fishery, 5-day trip limits of 1.4 mt in PWS, 1.8 mt in the North Gulf district, and 0.5 mt in the Cook Inlet district. Regulations for rockfish have undergone significant changes beginning in 1996 when the Board of Fisheries formalized the 68 mt GHL into a 68 mt harvest cap for all rockfish species in Cook Inlet and PWS and a 5% rockfish bycatch limit for jig gear during the state waters Pacific cod season. In 1998 the Board of Fisheries adopted a directed rockfish season opening date of July 1 for the Cook Inlet Area and restricted legal gear to jigs primarily because this fishery typically targets pelagic rockfish species. At the spring 2000 meeting, the board closed directed rockfish fishing in the PWS area and established a bycatch-only fishery (10% bycatch) with mandatory full retention of all incidentally harvested rockfish. Rockfish in excess of the allowable 10% bycatch level are required to be sold with the proceeds going to the State of Alaska (contact Charlie Trowbridge).

The Westward Region has attempted to conservatively manage black rockfish since 1997, when management control was relinquished to the State of Alaska. Area guideline harvest levels were set at 75% of the average production from 1978-1995 and sections were created to further distribute effort and thereby lessen the potential for localized depletion. Since 1997, section GHLs have been reduced in some areas that have received large amounts of effort. In 1999, 90 mt of black rockfish were harvested from the seven sections comprising the Kodiak Area. The vast majority of this harvest came from directed fisheries or as bycatch in the state managed Pacific cod fishery. The 1999 black rockfish harvest in the Chignik Area totaled 39 mt and totaled 42 mt in the South Alaska Peninsula Area. The staff of the Westward region is currently seeking an economically feasible and statistically valid means to conduct

stock assessments on the rockfish resources of the region. A voluntary logbook program was initiated in 2000 in the hope of obtaining CPUE estimates as well as more detailed harvest locations. The detailed harvest location may be useful in tracking age composition in small habitat areas (contact Dave Jackson).

Given the lack of quantitative stock assessment information for much of Alaska, sport fishery managers have established conservative harvest strategies for recreational rockfish fisheries. Recreational seasons and bag and possession limits for rockfish in Alaska are among the most restrictive on the West Coast.

In most of the fisheries in Southcentral Alaska, the majority of rockfish are taken incidental to the recreational halibut fishery or while trolling for salmon. Bag limits in most areas have been designed to discourage targeting of rockfish, yet allow for retention of incidental harvest. Bag limits in most areas are five fish daily and the harvest of non-pelagic (DSR and slope) rockfish is further restricted to one or two fish per day. The Alaska Board of Fisheries has allowed more liberal bag limits in the Kodiak and Alaska Peninsula areas because of lower levels of effort and predominance of pelagic species in the catch (contact Scott Meyer).

In Southeast Alaska, sport bag limits consist of five pelagic rockfish and five non-pelagic rockfish per day of which only two may be yelloweye rockfish. In addition, bag limits in areas near Ketchikan and Sitka are limited to three non-pelagic rockfish, only one of which may be a yelloweye rockfish.

d) Fisheries

Reported harvest of rockfishes from state-managed commercial fisheries in Southeast totaled 705 mt in 2000, of which 214 mt was directed DSR and 18 mt was black rockfish. The majority of the remaining rockfish taken in the Southeast district were shortraker and rougheye landings made in conjunction with the NSEI sablefish fishery. All rockfish harvested in state-managed fisheries in Southeast is taken by hook-and-line gear either in directed fisheries or incidental to fisheries for other species.

The 2000 Cook Inlet Area directed rockfish fishery opened July 1 and closed August 21 with a total harvest of 72 mt. This was the first full year that the new jig-only gear restriction was in place. Directed rockfish effort was high relative to recent years, however, some of this is attributable to a shift in fishing effort from the upper Cook Inlet salmon drift fishery which experienced a decline in fishing time during 2000. In PWS the new regulations did not take effect until June, therefore, the directed fishery opened by regulation on January 1 and closed March 14 when catches in PWS state waters totaled 15 mt, primarily yelloweye rockfish taken as bycatch to the directed Pacific cod longline fishery. Total harvest in both the early-year directed fishery and the bycatch-only fishery was 55 mt.

Recreational rockfish harvest is typically estimated in numbers of fish. Estimates of the 2000 harvest are not yet available from the statewide mail survey, but the average estimated annual harvest for the period 1995-1999 was 44,600 fish in Southeast Alaska and 45,500 fish in Southcentral Alaska.

3. Sablefish

a) Research

In 2000, sablefish longline surveys were conducted in the two Southeast Alaska state-managed sablefish fishery management areas, Southern Southeast Inside (SSEI) and Northern Southeast Inside (NSEI). These surveys are designed to measure trends in relative abundance and biological characteristics of the sablefish population. Biological data collected in the survey include length, weight, sex, and maturity stage. Otoliths are collected and sent to the ADF&G age reading laboratory in Juneau for age determination. The cost of these surveys is offset by the sale of the fish landed. The fish are dressed and iced according to industry standards and the state receives all the revenues from the sale of the fish.

In the SSEI survey, the overall CPUE (fish/hook) in 2000 was 0.21, 4.5% lower than the CPUE in 1999 (0.22) and 50% higher than 1998 (0.14). The overall CPUE based on biomass was 0.43 kg/hook in 2000 compared to 0.41 in 1999 and 0.30 in 1998. Although the bycatch species composition varied widely between stations, spiny dogfish (*Squalus acanthias*) dominated the bycatch in all areas surveyed. In the NSEI survey, the 2000 mean CPUE based on fish/hook (0.25) showed a 4.8% decline from 1999 (0.26) and a 6.4% decline from 1998 (0.27). Biomass/hook was 0.82 kg/hook in 2000 compared to 0.84 in 1999 and 1.03 in 1998. Thornyheads dominated the bycatch in all areas except the northernmost statistical area. Thornyhead catch rates were twice as high in 2000 compared to 1999.

The on-going mandatory logbook program in the sablefish fisheries provides catch and effort data by date, location, and set. In the SSEI sablefish fishery, the overall pounds/hook in the vessels using conventional gear declined 10% in 2000 (0.45 rd. lbs./hook) compared to 0.50 rd. lbs./hook in 1999 but remained 21.6% higher than 1998 (0.37 rd. lbs./hook). In the NSEI fishery, the rd. lbs./hook was 0.52 in 2000; the same as 1999 and 2% lower than the catch rate in 1998 (0.53).

In 2000, ADF&G continued the mark/recapture study in NSEI, double marking and releasing 5,768 sablefish using pot gear to capture the fish 1.5 months prior to the fishery opening September 1, 2000. The external tags are also a part of the on-going study to describe movement patterns between the Gulf of Alaska and the inside waters of Southeast Alaska. Fish were caught with pot gear this year to minimize the apparent "hook shyness" pattern of tag returns observed in 1997, 1998, and 1999. Tag returns from the fishery this year were significantly higher than in previous years. This suggests that using different gear to capture the fish and extending the time period between capture and recapture may have minimized the "hook shyness" phenomenon. The higher returns could also be a result of a higher exploitation of fish in 2000 compared to 1998 and 1997 (contact Meg Cartwright).

In 1999, ADF&G initiated a mark-recapture study in PWS using the bottom trawl survey as the capture vehicle (contact Bill Bechtol).

b) Stock Assessment

In Southeast, prior to 1997, trends in catch rates in the longline research survey and biological data were the primary information used to set quotas (or seasons) in the sablefish fisheries. In 1997, we developed an age-structured analysis (ASA) and began a mark recapture study in an attempt to estimate absolute abundance in NSEI. The ASA model output has been problematic because of the wide range of biomass estimated depending on the data used. Also the age distributions in NSEI do not appear to track cohorts from year to year. Apparent hook shyness and gear selectivity problems in the mark recapture study in 2000 continue to complicate efforts to estimate biomass using a Peterson estimator. Despite some problems, mark recapture methods seem to have sufficient potential to provide estimates of abundance,

exploitation rates, and movement, that we plan to continue this effort. The return of the external t-bar tags in the commercial fishery allowed us to estimate exploitation rates, weighted by fish size and area catch rates in the fishery.

A longline survey has been conducted in PWS annually since 1996 using ADF&G vessels. Mean cpue has ranged from 0.37 fish per hook in 1997 to 0.56 fish per hook in 1999. A longline survey was also conducted in the North Gulf District for the first time in 1999. The PWS longline survey involved 36 stations fished during three weeks in September 2000 by the *R/V Pandalus*. The 2000 survey focused on the northwest and eastern PWS area. Relative to recent surveys, catch rates among strata (and not weighted for available habitat) increased for sablefish and decreased for most other species, including Pacific cod, Pacific halibut, and arrowtooth flounder. Survey costs are offset by the sale of the fish (contact Bill Bechtol).

c) Management

There are three separate internal water areas in Alaska, which are managed exclusively by the state. The Northern Southeast Inside Subdistrict (NSEI), the Southern Southeast Inside Subdistrict (SSEI), and the Prince William Sound District each have separate seasons and guideline harvest ranges. Sablefish fisheries in outer coastal state waters (0-3 miles) have been managed in conjunction with the federal-managed fishery in the EEZ. In some areas of the Gulf, the state opens the fishery concurrent with the EEZ opening. These fisheries, which occur in the North Gulf District of Cook Inlet and the Aleutian Island District are open access in state waters, as the state cannot legally implement IFQ management at this time. The quotas are based on historic catch averages and closed once these have been reached. There is no open-access sablefish fishery in the Southeast Outside district as there are extremely limited areas that fall inside state waters and are deep enough to support sablefish populations.

The GHL for the North Gulf District is set using an historic baseline harvest level adjusted annually by the same relative reduction to the TAC in the Central Gulf Area. The 2000 fishery GHL was 32 mt, a slight increase over the 1999 GHL due to an increase in the Central Gulf TAC. Also in 2000, the new season opening date of July 15 became effective. This change was adopted by the board at the request of fishermen that believed that larger fish were more prevalent in nearshore areas later in the year. The sablefish fishery in PWS occurred under limited entry for the first time in 1996. Permit holders are restricted to gear and vessel size classes. Additionally a commissioner's permit which stipulates logbook and catch reporting requirements must be obtained prior to participation in the fishery. The fishery GHL is set at 110 mt which is the midpoint of the harvest range set by a habitat-based estimate. Central Region staff annually conduct post fishery dockside interviews and sample landings in the ports of Cordova, Whittier, and Seward.

Since 1984 both SSEI and NSEI sablefish fisheries have been managed under a license limitation program. Because of increased vessel efficiency the season for the NSEI Subdistrict had been reduced to a 24-hour per year "derby" style fishery by 1987. Even in that short season, the pre-season harvest objectives set by ADF&G has been consistently exceeded. Beginning in 1994 a new harvest strategy was adopted for the NSEI Subdistrict sablefish fishery. In response to a concern for potential over-exploitation, the Board of Fisheries adopted regulations that restrict the harvest to no more than 4.8 million round pounds for the 1994, 1995, and 1996 seasons. In 1997 the BOF adopted this equal share system as a permanent management measure for both the NSEI and SSEI sablefish fisheries. The department sets the overall annual quota and evenly divides the total quota by the number of eligible permits for each fishery. We will continue to set the annual fishery quota in each fishery based on the data collected prior to the current year. We initiated this change in the 1999 NSEI fishery. The 2000 quota in NSEI remained the same as 1999, 3.12 million round pounds. After reducing the quota 35% in

1999, we decided to maintain the quota in 2000 before considering further reductions or an increase in the quota. The SSEI quota was 0.696 million round pounds in 2000, a 3% decline in overall quota from 1999. However, the individual quota remained the same due to the elimination of one permit from the fishery. In 2000, the Board of Fish extended the SSEI sablefish fishery season until August 15, increasing the season an additional month.

d) Fisheries

The NSEI sablefish fishery landed a total of 1,398 mt by 111 permits, averaging 12.6 mt per permit between September 1 and November 15, 2000. In the SSEI management area, a total of 268 mt were landed by 29 permits, averaging 9.2 mt per permit between June 1 and August 15, 2000 (contact Meg Cartwright).

The open access sablefish fishery in the North Gulf District was open from July 15 – 26 and harvested 47 mt. Catch rates in the fishery were significantly higher than previous years when the fishery occurred during the March through May period. During the 2000 season in the Prince William Sound area, a 48-hr fishery opened on May 1 and resulted in a harvest of 162 mt. Several factors contributed to the harvest exceeding the GHL. These included a shift to fixed gear from snap gear which allowed fishermen to fish more hooks, excellent weather, and relatively high catch rates. This latter element was verified via post-fishery interviews and was partially attributable to the recruitment of a new year class of sablefish as evidenced by the small sizes observed during port sampling (contact Charlie Trowbridge).

Within the Westward region, only the Aleutian Islands have sufficient habitat to support mature sablefish populations of sufficient magnitude to permit commercial fishing. All other sections within the region are closed on an annual basis by emergency order to avoid the potential for localized depletion from the small amounts of habitat within the jurisdiction of the state. Bycatch from the areas closed to directed fishing is limited to 1%. The 2000 Aleutian Island fishery opened concurrent to the Federal IFQ season on March 15. The GHL was set at 182 mt for the state managed fishery. The preliminary harvest from the 2000 Aleutian Islands sablefish fishery was 198 mt. (contact Skip Gish).

4. Flatfish

a) Research

No research was conducted on flatfish during 2000.

b) Stock Assessment

No stock assessment programs were active for flatfish during 2000.

c) Management

Trawl fisheries for flatfish are allowed in three small areas in the internal waters of Southeast Alaska under a special permit issued by the department. The permits are generally issued for no more than a month at a time and specify the area fished and may restrict the type of gear used. Mandatory logbooks are required and some areas cannot be fished unless there is an ADF&G observer on board. This restrictive management is necessary because of reduced flatfish stocks and because of a history of very high prohibited species bycatch rates, particularly crab and halibut, in flatfish trawl fisheries conducted in the internal waters of the state. New regulations adopted in November 1993 implemented a 20,000-pound maximum weekly trip limit in the trawl fishery. This was an industry proposal, the intent of which was to keep large catcher-processor vessels out of this fishery. In 1997 a different industry proposal to the BOF requesting an increase in weekly trip limit was rejected.

d) Fishery

The Southeast Alaska inside area flatfish trawl fishery was restricted to three small areas during the 2000-01 season with a harvest objective set for each area. As has been the case for the past five years, there was almost no effort in the Southeast fishery, with less than 2 mt of harvest reported. Most of the Southeast harvest is starry flounder and is used for bait in other groundfish fisheries while the Prince William Sound harvest is a mixture of shallow-water species. The BOF restricted the Southeast flatfish trawl fishery to the use of beam trawl only. The flatfish trawl areas are also the site of a beam trawl fishery for shrimp.

5. Pollock

a) Research

Pollock continue to be a dominant species in the Central Region ecosystems. Due to uncertainty about the appropriate harvest level for the PWS pollock fishery, assessment in 1999 included commercial fishery catch sampling, collection of samples for genetic and isotope analysis, acoustic surveys of the spawning population, and bottom trawl surveys of the summer (post-spawning) population. In 1996, interactions between pollock, herring, and juvenile salmon were also examined as part of Sound Ecosystem Assessment (SEA) funded by the *EXXON Valdez* Oil Spill Restoration.

In pollock we are testing for spatial patterns of genetic variation in six population samples from three regions: North America – Gulf of Alaska; North America – Bering Sea; Asia – East Kamchatka. We tested for annual stability of the genetic signal in replicate samples from three of the North American populations. These studies, begun in 1998 and 1999, continued into 2000. A manuscript documenting the findings is under internal review. Allozyme and mtDNA markers provide concordant estimates of spatial and temporal genetic variation. These data show significant genetic variation between North American and Asian pollock as well as evidence that spawning aggregations in the Gulf of Alaska, such as Prince William Sound, are genetically distinct and may merit management as distinct stocks. These data also provide evidence of inter-annual genetic variation in two of three North American populations. Gene diversity values show this inter-annual variation is of similar magnitude to the spatial variation among North American populations, suggesting the rate and direction of gene flow among some spawning aggregations is highly variable.

b) Assessment

A hydroacoustic and mid-water trawl survey were conducted in PWS in the winters of 1995, 1997, and 1998 (contact Bill Bechtol).

c) Management

Prince William Sound pollock fishery regulations include a commissioner's permit and a registration deadline of January 13. The permit stipulates logbooks, catch reporting, and accommodation of a department observer upon request. In recent years, the GHL has been based on the estimated pollock biomass during the summer. This is because a significant portion of the spawning population targeted by the winter fishery is thought to have immigrated from federal waters, whereas the summer population is not assessed by the NMFS summer survey (contact Bill Bechtol).

d) Fisheries

The 1999 fishery opened on January 20 and closed February 25 with a GHL of 2100 mt. Similar to prior years, most of the harvest came from Port Bainbridge in southwestern PWS. Early on, cpue was low, however, as the fishery progressed, cpue increased. The directed fishery achieved the GHL. Fishery bycatch remained quite low with squid predominating and salmon totaling 2,144 pounds.

6. Dogfish

a) Research

The relative catch rate of spiny dogfish is monitored in the Southern Southeast Inside area in conjunction with the annual sablefish survey in that area. Commercially landed dogfish are sampled for length, weight, sex, and spines taken for aging.

Spiny dogfish and pacific sleeper sharks have been tagged annually since 1997 as part of the PWS longline survey for sablefish. To date, four tagged sleeper sharks have been recovered.

b) Assessment

Sharks are caught in the PWS longline survey. Catch per unit effort for Pacific sleeper sharks has increased from 1.1 fish per set in 1996 to 4.3 fish per set in 1999. Spiny dogfish CPUE has ranged from 0.9 – 2.7 fish per set except for a dramatic increase to 51.3 fish per set in 1998. The high catch rates of spiny dogfish in 1998 appear to have been an anomaly (contact Bill Bechtol).

c) Management

The Alaska Board of Fisheries prohibited all directed fisheries for sharks in 1998. In 2000 the BOF increased the bycatch allowance for dogfish taken while longlining for other species to 35% of the target species and also allowed full retention of dogfish bycatch in the salmon setnet fishery in Yakutat This action was an effort to minimize waste of dogfish in these two fisheries and to encourage the sale of

bycatch. In Central Region, bycatch is set by regulation at 20% of the round weight of the directed species on board.

7. Lingcod

a) Research

Three lingcod research surveys were conducted during 2000 to tag fish for a movement and migration study and to estimate exploitation rate and two trips were made to tag fish with sonic tags (contact Rick Starr, California Sea Grant). A total of 1,458 lingcod were tagged during the reporting period: 1,297 lingcod were tagged using dinglebar gear, 30 were tagged as bycatch during a black rockfish survey, and 111 young fish were tagged by sport fishermen. Length and sex were recorded for all tagged fish and sub-samples of biological specimens were taken for age, growth, and sexual maturity analysis. Over the past five years 5,077 lingcod have been tagged and 136 fish recovered (contact Cleo Brylinsky).

The Division of Sport Fish—Southeast Region continued to collect catch, harvest, and biological data from lingcod as part of a marine harvest survey program with lingcod harvests tabulated back to 1987 in some selected ports. Data collected in the program include statistics on effort, catch, and harvest of lingcod taken by Southeast Alaska sport anglers. Ports sampled in 2000 included Juneau, Sitka, Craig/Klawock, Wrangell, Petersburg, Yakutat, and Ketchikan. Length and sex data were collected from 2,104 lingcod in 2000.

The Division of Sport Fish—Southcentral Region continued collection of harvest and fishery information on lingcod through the groundfish harvest assessment program. The objectives of this program include estimation of 1) the age, sex, and size composition of lingcod harvests at selected Gulf of Alaska ports and 2) the geographic distribution of harvest by each fleet. Ports sampled in 2000 included Seward, Valdez, Whittier, Kodiak, and Homer. In combination, these ports represent the primary areas of recreational lingcod harvest in Southcentral Alaska. Seven hundred sixty-seven lingcod were sampled for length, age, and sex data in 2000.

The Southcentral Region Division of Sport Fish has also collected fishery-independent stock assessment data on lingcod on an intermittent basis to assess recruitment in the northern Gulf of Alaska. The last survey was conducted in 1998 to assess changes since 1994 in the relative abundance and length composition of lingcod in waters near Seward. The survey indicated continued very low abundance of lingcod in Resurrection Bay and recommended continuing the sport and commercial fishery closure of those waters. Survey results also indicated a relative downward shift in the size distribution in waters just outside Resurrection Bay (contact Scott Meyer).

b) Management

The BOF made significant changes in lingcod management in the Southeast District during 2000. These changes included a total winter closure for all users except longliners between December 1 and May 15 in an effort to protect nest guarding males. Guideline harvest limits were greatly reduced in all areas and allocations made between directed commercial fishery, sport fishery, longline fisheries, and salmon troll fisheries. The 27-inch minimum size limit remains in effect and fishermen must keep their lingcod with the head on and proof of gender to facilitate biological sampling of the commercial catch. Vessel registration and trip limits are allowed when needed to stay within allocations.

Regulations for the Central Region lingcod fishery include: 1) a complete area closure from January 1 through June 30, and 2) a minimum size limit of 35 inches (89 cm) overall or 28 inches (71 cm) from the front of the dorsal fin to the tip of the tail. More recently, the Board of Fisheries adopted a jig only gear requirement for lingcod in the Cook Inlet Area. These regulatory changes were adopted to reduce the harvest and effort from previous levels in the Central Region. Additionally, beginning in 1997, the department set commercial lingcod fishery GHLs for the Central Region at 50% of the recent 10-year harvest.

In 2000, sport harvests of lingcod in Southeast Alaska were incorporated into a regionwide lingcod management plan which set GHLs for seven areas, and sport harvest in pounds was allocated for each of these seven areas. The opening date of the lingcod sport fishery was also moved back about two weeks from May 1, and is now open from May 16 through November 30. The bag and possession limits of two and four lingcod were reduced to two and one in a large portion of northern Southeast Alaska (excluding Yakutat) to reduce harvests in this area to meet allocation guidelines. A lingcod minimum size limit of 38 inches was also placed into effect for charter and nonresident anglers fishing in northern Southeast Alaska, and lingcod caught in this area by charter anglers could only be landed by hand or landing net. There was no minimum size limit in other areas of Southeast Alaska and resident anglers fishing from private vessels in northern Southeast could also retain lingcod of any size. Since the department wished to increase biological sampling of lingcod for better determination of length and sex composition, heading or filleting of lingcod prior to offloading was also prohibited in all sampled ports to enable the department to maximize fishery information obtained. The only area totally closed to lingcod sport fishing was the Pinnacles area near Sitka which is closed to sport fishing year-round for all groundfish (contact Tom Brookover).

Conservative harvest strategies have been established for recreational lingcod fisheries in Southcentral Alaska in light of the lack of quantitative stock assessment information. Seasons and bag and possession limits are among the most restrictive on the West Coast. Resurrection Bay is closed to lingcod fishing year-round, and the fishery is managed in most areas under a spawning/nest guarding season closure through June, a minimum size limit of 35 inches to protect spawners, and bag and possession limits of 2 fish or less daily (contact Scott Meyer).

e) Fishery

Lingcod are the target of a "dinglebar" troll fishery in Southeast Alaska. Dinglebar troll gear is salmon power troll gear modified to fish for groundfish. Additionally lingcod are landed as significant bycatch in the DSR longline fishery and as a limited bycatch in the halibut fishery. In 1997 the Board of Fisheries adopted a regulation that would allow longliners fishing for demersal shelf rockfish to retain 35% lingcod, by weight of their target catch. The directed fishery landed 139 mt of lingcod in 2000 and an additional 99 mt was landed as bycatch in other fisheries. The halibut longline fishery accounted for roughly half of lingcod bycatch in the Southeast Region and the salmon troll fishery accounted for 20%.

Central Region lingcod harvests have primarily occurred in the North Gulf District of Cook Inlet and the Outside District of PWS. The North Gulf commercial harvest was restricted to 16 mt and the PWS harvest was set at 12 mt beginning in 1997. During 1999, Cook Inlet Area lingcod harvest totaled 12.8 mt and PWS reached 14 mt. The overage in PWS is primarily due to bycatch to federal waters longline and trawl fisheries during the closed season. Declines in harvest are primarily attributable to the relatively low allowable harvest and market value.

Recreational lingcod harvest is typically estimated in numbers of fish. Estimates of the 2000 harvest are not yet available from the statewide mail survey, but the average estimated annual harvest for the period 1995-1999 was 17,600 fish in Southeast Alaska and 8,200 fish in Southcentral Alaska.

8. Other species

In 1997 the BOF based a new policy that would strictly limit the development of fisheries for other groundfish species in Southeast. Fishermen are required to apply for a "permit for miscellaneous groundfish" for all fisheries that do not already have specific regulations and permits do not have to be issued if there are management and conservation concerns. At this time that includes all species except sablefish, rockfish, lingcod, flatfish, and Pacific cod. At this time most other groundfish species taken in state waters are taken as bycatch in fisheries for other more valuable groundfish and halibut. Reported landings in Southeast during 2000 were approximately 1 mt. The State also has a regulation that requires the bycatch rate of groundfish be set by fishery annually by emergency order unless otherwise specified in regulation.

Regulations adopted by the BOF in 1998 restricted all shark fisheries to bycatch–only and skate to directed harvest under a commissioner's permit. The Board also adopted a management plan governing the recreational fisheries for salmon and other sharks. This plan includes a statewide annual bag limit of one and a statewide annual limit of two sharks. In 2000 the BOF prohibited the practice of 'finning', requiring that all shark retained must be sold or utilized and have fins, head, and tail attached at the time of landing. "Utilize" means use of the flesh of the shark for human consumption, for reduction to meal for production of food for animals or fish, for bait, or for scientific, display, or educational purposes.

In recent years, a small recreational fishery targeting primarily salmon sharks has developed in the Gulf of Alaska and Prince William Sound. Little information is available to assess the status or structures of targeted stocks. In an attempt to collect information, the Division of Sport Fish initiated a modest cooperative tagging program with a few charterboat operators in 1998 and continues to collect biological data on all sharks harvested in the sport fishery through the port sampling program. Sport Fish Division staff in Homer also continued joint research efforts aimed at stock assessment of salmon and sleeper sharks by providing salmon and sleeper shark stomachs and other tissues to NMFS–Auke Bay Lab staff, and providing salmon and sleeper shark vertebrae to the Virginia Institute of Marine Science (VIMS). In addition, staff assisted NMFS and VIMS with field sampling and tagging of salmon sharks in Prince William Sound in 2000.

A commissioner's permit is required before a directed fishery may be prosecuted for skates and rays. This permit may restrict depth, dates, area, and gear, establish minimum size limits, and require logbooks and/or observers, or any other condition determined by the commissioner to be necessary for conservation and management purposes. A commissioner's permit is also required before any trawl fishery besides the existing beam trawl fishery for flatfish may be prosecuted in the Southeast District.

A 'Developing Fisheries' policy is being drafted for new fisheries which will reduce the possibility that a fishery can escalate beyond management control and will also outline which species may be restricted from being harvested in a directed fishery.

The recreational halibut fishery is the focus of a statewide research and management effort. Data on the recreational fishery and harvest are collected through port sampling effort in Southcentral Alaska and creel surveys in Southeast Alaska. These data are provided annually to the International Pacific Halibut Commission for use in an annual stock assessment, and to the North Pacific Fishery Management

Council. The council has used the information in the design and analysis of regulations governing the sport charter fishery.

As stated earlier in this report, the BOF took action in 2000 prohibiting the development of a live fish fishery for groundfish in the Southeast District.

C. Other Related Studies

The Department of Fish and Game manage state groundfish fisheries under regulations set triennially by the Board of Fisheries. The department announces the open and closed fishing periods consistent with the established regulations, and has authority to close fisheries at any time for justifiable conservation reasons. The department also cooperates with NMFS in regulating fisheries in the offshore waters.

By regulation, fish tickets are required for all shore-based landings in Alaskan ports and for all landings from state-managed fisheries. The catch data from the fish tickets is used as the primary means of tracking the in-season harvest levels. Groundfish fish tickets are collected from as many as thirty or more processors within the state. The fish tickets are edited for accuracy and the data is entered on microcomputers in Petersburg, Sitka, Ketchikan, Homer, Kodiak, and Dutch Harbor. Because of the intensity of many of the groundfish fisheries, a "soft data" accounting system using processor contacts is also utilized, when necessary, to track landings during a fishery.

In 1997 at the Southeast groundfish meeting, the Board of Fisheries adopted a regulation that will require all groundfish fishermen to complete mandatory logbook pages while fishing. These logbook pages must be submitted as part of their landing record and attached to their fish ticket at delivery. The board also now requires that fishermen obtain a conditional use permit when fishing for any species for which specific regulatory language is not in effect. This will allow ADF&G to deny permits for some species and allow exploratory or controlled fishing for others.

1. Dixon Entrance Area

Total removals from the Dixon Entrance area (Alaska statistical areas 325431, 315431, 325401, and 315401) have declined in recent years, due mostly to reductions in sablefish quotas. The table below lists the catch by species group from 1988 through 2000 rounded to the nearest mt.

Year	# permits	# landings	DSR	Other Rock	Sablefish	Other	Total
1988	20	27	4	2	83	3	92
1989	8	8	1	1	20	0	22
1990	16	18	3	5	182	1	191
1991	24	24	6	12	149	2	170
1992	19	22	3	4	150	1	159
1993	26	30	7	13	232	1	254
1994	27	27	1	20	216	3	240
1995	21	23	0	20	137	0	157
1996	16	17	1	12	83	0	95
1997	37	45	1	18	103	1	123
1998	26	31	1	8	95	0	105
1999	23	30	0	7	74	1	82
2000	27	34	0	14	51	1	67

2. Marine Reserves

In September of 1997 the ADF&G submitted proposals to both the BOF and the NPFMC requesting that they implement a small no-take marine reserve in Southeast. The purpose of these proposals is to permanently close a 3.2 sq. mile area off Cape Edgecumbe to all bottomfish and halibut fishing (including commercial, sport, charter, bycatch and subsistence) and anchoring to prevent over-fishing and to create a groundfish refuge. This area is dominated by two large volcanic pinnacles that have a diversity and density of fishes not seen in surrounding areas. The pinnacles rise abruptly from the seafloor and sit at the mouth of Sitka Sound where ocean currents and tidal rips create massive water flows over this habitat. These two pinnacles provide a very unique habitat of rock boulders, encrusted with *Metridium*, bryazoans, and other fragile invertebrate communities, which attracts and shelters an extremely high density of juvenile rockfishes. The area is used seasonally by lingcod for spawning, nest-guarding, and post-nesting feeding. Yelloweye rockfish and pelagic rockfish species as well as large numbers of prowfish and Puget Sound rockfish also densely inhabit the pinnacles. This closure protects the fragile nature of this rare habitat, and prevent the harvest or bycatch of these species during critical portions of their life history. In February 1998 the BOF approved of the reserve and the NPFMC approved of the reserve at their June 1998 meeting. The NPFMC recommended to the BOF that they consider closure of the area to salmon trolling which would make the area a complete-no take zone. In February 2000 the BOF rejected closing the area to salmon trolling. The area is an important "turn-around" area for commercial trollers and the BOF did not believe there was sufficient conservation benefit to warrant closing the area to salmon fishing.

3. User Pay/ Test Fish Programs

The State of Alaska Department of Fish and Game receives receipt authority from the state legislature that allows us to conduct stock assessment surveys by recovering costs through the sale of fish taken during surveys. Receipt authority varies by region. In Southeast Alaska we have several projects that are funded through test fish funds (total allocation approximately 300k), notably the sablefish longline assessments, the king crab survey, and the herring fishery and dive surveys. Also in 1995 the Southeast Region was given a separate receipt authority for $250,000 to conduct sea urchin research using test fish funds. In the case of sea urchins the industry placed bids on the right to harvest and market sea urchins. The low bidder was responsible for paying for the department's expenses in research and management of this fishery and was limited to a 12% profit after state expenses were paid.

4. GIS

ArcView version 3.0 and MapInfo version 4.5 and 5.1 are currently being used by ADF&G CF for general map production, project planning and spatial analysis. More advanced spatial analyses are performed using ArcView's Spatial Analyst and MapInfo's Vertical Mapper and Arc/Info.

The division currently maintains its basemaps in both ArcView and MapInfo format; however, beginning in 2002 the ArcView shapefile format will be the division's standard data distribution format. The division is also supporting data in both the NAD27 and NAD83 datums. The NAD27 datum is primarily used for terrestrial-based mapping and the NAD83 datum is used for marine-based mapping. Because the division's managed fisheries span both the terrestrial and marine environments, both datums will be supported. Basemaps which originated in the NAD27 datum are being converted to the NAD83 datum. Most of this conversion will be completed by mid-2001.

In 2000, the division developed new hardcopy and digital groundfish and shellfish statistical area charts. These charts became effective January 1, 2001, and hardcopy charts were distributed to processors in early January. Digital versions of the charts are available in two forms. Adobe PDF versions of the charts can be viewed or downloaded at http://www.cf.adfg.state.ak.us/geninfo/statmaps/charts.htm. ArcView- and MapInfo-compatible charts can be downloaded from the ADF&G CF GIS Maps and Data Server at http://maps.cf.adfg.state.ak.us. This server will be the home for all publicly available GIS maps developed by the division. In the future this server will also feature online maps using ESRI's ArcIMS (Internet Map Server) software (contact Tim Haverland).

5. Logbooks

Beginning in 1997 logbooks are mandatory for all state-managed commercial fisheries in Southeast. Logbooks for rockfish and lingcod have been mandatory for a number of years. All usable longline and jig logbook data through 2000 has been entered.

Since 1998, marine recreational charter operators have been required to log port of landing, effort, harvest, and ADF&G statistical area for every charter trip made. The 2000 logbook was modified slightly to improve reporting and accuracy. Data collected for each vessel trip included port of landing, location(s) fished, angler residency, effort for salmon and bottomfish, and harvest and release (in numbers) of salmon, halibut, rockfish, lingcod, and salmon sharks. A copy of this logbook and the associated instructions are appended to this document. The sport fish division is planning a thorough evaluation of the 1998-2000 charter logbook data, including comparisons of data from the logbook, the statewide mail survey, and on-site interviews.

Number of commercial fishery logbooks collected by fishery, target species, and year.

S.E.	Longline					Jig/dinglebar			
Year	DSR	Pcod	Slope Rock	PSR	Sablefish	Ling	Black rock	DSR	PSR
1986	21	1							
1987	25								
1988	20								
1989	19								
1990	50	1	2						
1991	232	8	1						
1992	259	7							
1993	190	8							
1994	197	9	3			108			
1995	140	13		6		215			
1996	261	8		5		252	31	6	
1997	204	98	4	0	466	177	64	8	1
1998	177	135	15		552	153	70	3	4
1999	165	223	9	0	405	89	21	1	1
2000	153	97	4	0	421	153	30		

6. Web Pages

ADF&G Home Page	http://www.state.ak.us/local/akpages/FISH.GAME/adfghome.htm
Commercial Fishery Division	http://www.cf.adfg.state.ak.us/cf_home.htm
News Releases	http://www.cf.adfg.state.ak.us/region1/news/news_rel.htm
Sport Fish Division	http://www.state.ak.us/local/akpages/FISH.GAME/sportf/sf_home.htm
Tag Lab	http://tagoweb.adfg.state.ak.us/
Commercial Fisheries Entry Commission	http://www.cfec.state.ak.us
State of Alaska	http://www.state.ak.us/
Gene Conservation Laboratory	http://www.cf.adfg.state.ak.us/geninfo/research/genetics/genetics.htm
11th Western Groundfish Conference Abstracts	http://www.cf.adfg.state.ak.us/region1/finfish/grndfish/wgcprgrm.pdf
Adobe PDF versions of groundfish charts	http://www.cf.adfg.state.ak.us/geninfo/statmaps/charts.htm.
ArcView- and MapInfo-compatible charts from the ADF&G CF GIS Maps and Data Server at	http://maps.cf.adfg.state.ak.us. This server will be the home for all publicly available GIS maps developed by the division. In the future this server will also feature online maps using ESRI's ArcIMS (Internet Map Server) software (contact Tim Haverland).

D. Reports Completed During 2000

Cartwright, Margaret. 2000. The 1996 sablefish survey results for the Southern Southeast Inside and Northern Southeast Inside management areas in Southeast Alaska. Alaska Department of Fish and Game, Regional Information Report 1J00-10, Douglas, Alaska.

Gish, Robert K., 2000. Bering Sea – Aleutian Islands state-managed groundfish fisheries, and groundfish harvest from state waters under federal management annual management report, 1999. Alaska Department of Fish and Game, Regional Information Report 4K00-64, Kodiak, Alaska.

Gish, Robert K., 2000. Aleutian Islands black rockfish fishery. A report to the Alaska Board of Fisheries. Alaska Department of Fish and Game, Regional Information Report 4K00-73, Kodiak, Alaska.

Gish, Robert K., 2000. Aleutian Islands state-waters sablefish fishery. A report to the Alaska Board of Fisheries. Alaska Department of Fish and Game, Regional Information Report 4K00-74, Kodiak, Alaska.

Hubartt, D. J., A. E. Bingham, and B. J. Frenette. 2000. Harvest estimates for selected marine sport fisheries in Southeast Alaska during 1999. Alaska Department of Fish and Game, Fishery Data Series 00-17, Anchorage.

Meyer, Scott C. 2000. Composition and biomass of the recreational rockfish *Sebastes* harvest in Southcentral Alaska, 1992-1995. Alaska Department of Fish and Game, Fishery Data Series No. 00-6, Anchorage.

Meyer, Scott. 2000. Halibut otolith exchanges between the IPHC and Alaska Department of Fish and Game, 1991-1998. IN Report of assessment and research activities 1999. International Pacific Halibut Commission, Seattle.

O'Connell, V. M., D. Carlile, and C. Brylinsky 2000. Demersal shelf rockfish. IN 2001 stock assessment and fishery evaluation report for the Gulf of Alaska. North Pacific Fishery Management Council, Anchorage Alaska.

O'Connell, V. M., D. Carlile, and C. Brylinsky 2000. Demersal shelf rockfish stock assessment and fishery evaluation report for 2001. Alaska Department of Fish and Game, Regional Information Report 1J00-36, Douglas Alaska.

O'Connell, V. M., M. A. Cartwright, B. Richardson, and D. Holum. 2000. Report to the Board of Fisheries, Region I groundfish fisheries. Alaska Department of Fish and Game, Regional Information Report 1J99-49, Douglas, Alaska.

O'Connell, V., Mike Ruccio, Dan Urban, Charlie Trowbridge, Tom Brookover, Meg Cartwright, Cleo Brylinsky, Scott Meyers, Kristen Munk, Brian Frenette, Bob Piorkowski, Bill Bechtol, and Rob Bentz. 2000. State of Alaska groundfish fisheries associated investigations in 1999: report to the Canada/US Groundfish Subcommittee of the Technical Subcommittee. Alaska Department of Fish and Game, Regional Information Report 1J00-23, Douglas, Alaska.

Appendix I. Alaska Department Of Fish And Game Permanent Full-Time groundfish Staff During 2000.

COMMERCIAL FISHERIES DIVISION

HEADQUARTERS, P.O. Box 25526, Juneau, Alaska 99802-5526

Fish Ticket Programmer/Analyst vacant (907) 465-6110	GIS Programmer/Analyst Tim Haverland (907) 465-6147	Fish Ticket Research/Analyst Gail Smith (907) 465-6157
AKFIN Program Coordinator Bob Piorkowski (907) 465-6109	Age Determination Unit Kristen Munk (907) 465-3054	

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Project Biometrician David Carlile Box 240020 Douglas, AK 99824-0020 (907) 465-4216	Otolith Lab Kris Munk Box 25526 Juneau, AK 99802 (907) 465-3054	

CENTRAL REGION

Groundfish Research Biologist William R. Bechtol 3298 Douglas Street Homer, AK 99603-7942 (907) 235-8191	Management Biologist Charlie Trowbridge 3298 Douglas Street Homer, AK 99603-7942 (907) 235-8191	

WESTWARD REGION

Shellfish/groundfish Biologist Wayne Donaldson 211 Mission Rd. Kodiak, AK 99615-6399 (907) 486-1840	Groundfish Research Biologist Dan Urban 211 Mission Rd. Kodiak, AK 99615-6399 (907) 486-1840	

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HEADQUARTERS

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SOUTHEAST REGION

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Tom Brookover
Regional Management Coordinator
Division of Sport Fish
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Sitka, AK 99835

SOUTHCENTRAL REGION

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Appendix II. Instructions for 2000 Sport Charter Logbooks and Sample Form

Complete Logbooks Daily.

It is not necessary to start logbook entries until the vessel is actually used for a charter fishing trip during 2000. Once a vessel has been used for a charter fishing trip in 2000, the logbook must include daily reporting until the last trip of the season is completed.

The owner or agent of the business operating this vessel is required to make an entry into this logbook per the following schedule.

RETURNING TO A DOCK

- FISH KEPT
  Complete the logbook before offloading any clients or fish.
- NO FISH KEPT
  Complete the logbook before the operator leaves the vessel.

NO DOCKING FACILITIES (e.g., trailered vessels)

- FISH KEPT
  Complete the logbook before the vessel or operator departs the landing site and before offloading any fish.
- NO FISH KEPT
  Complete the logbook before the vessel or operator departs the landing site.

MULTIPLE TRIPS PER DAY

Complete the logbook at the end of each trip, as described above.

MULTIPLE DAY TRIPS

Complete the logbook at day's end for each day of the trip; complete the last day's activity as described above.

PERIODS OF INACTIVITY

Once a vessel has been used for a charter trip during 2000, the logbook must be completed daily to report inactivity or fishing trips. A logbook sheet must be submitted weekly, even if no trips were taken for the entire week.

Illness or unexpected absences may prohibit timely completion of logbook sheets that report inactivity. Nevertheless, logbooks must be completed and weekly reports submitted as close to the required reporting deadlines as is possible.

Please be complete and write legibly. You may be contacted in person or by mail if forms are delinquent, missing, incomplete, or illegible.

Return Logbook Reports Weekly.

Once a vessel has been used for a charter fishing trip, the logbook must be completed daily and returned per the schedule printed on each logbook sheet until a sheet is submitted indicating that the vessel has taken its last trip for the year.

Weekly Logbook Sheets & Supplemental Logbook Sheets.

Weekly Logbook Sheets should be used to report charter fishing activity between April 24 and October 1.

Supplemental Logbook Sheets should be used to report charter fishing activity before April 24 or after October 1, or to report trips in addition to the first two trips taken on any day.

Supplemental Logbook Sheets used prior to April 24 should be postmarked by May 7.

Supplemental Logbook Sheets used after April 30 should be submitted when a form is full or when you are through fishing for the season (whichever comes first).

Supplemental Logbook Sheets may be adapted to special needs. For example, two trips are taken in a day, then the vessel departs on a multi-day trip. Use the **Supplemental Form** to report the first day of the multi-day trip.
Additional **Supplemental Logbooks Sheets** beyond the five in this logbook are available from local ADF&G offices.

Certification Signature Deadline
Each **Weekly Logbook Form** and each **Supplemental Logbook Form** must be legibly signed and dated by the owner or agent of the business operating the vessel to which the logbook has been assigned. All completed and signed 2000 forms must be received by ADF&G before JANUARY 15, 2001.

Logbook Data.	
ADF&G No.	The 5-digit vessel number assigned by the Commercial Fisheries Entry Commission (CFEC). A vessel must have this number to be a legally licensed charter vessel in Alaska.
Vessel Name	The Vessel Name or identity, as it corresponds to the ADF&G No. issued by the CFEC.
Date	Dates are printed on the weekly sheets from April 24 through October 1. You must write the date on **Supplemental Logbook Sheets**.
Inactive (X):	Check **Inactive** if the vessel is not used for charter fishing on a given date.
Trip No.	A **Trip** starts when the vessel leaves a dock, port, or launch site with clients on board to go sport fishing. A trip typically ends when the vessel returns to a dock, port, or site of landing to offload clients and fish. A trip may cover part of one day, one day, or multiple days. Do NOT sum information for two or more trips; each trip must be reported separately in the Logbook. The first two trips on a day should be reported on the **Weekly Logbook Sheets**; all additional trips for the day would be reported in the **Supplemental Logbook Sheets**. Write the date and trip number on the **Supplemental Logbook Form**.
Day No. of Multi-day trip	This applies to trips that span two or more calendar days (see definition of **Trip** above). A "1" would be entered for the first day of a trip, "2" would be written for the second day, and so on until the trip is completed.
Port of Landing	The port (or site) where clients and/or fish are offloaded at the conclusion of the trip.
Number of Clients and Crew Fishing	The number of clients and crew who fished any part of the trip, whether or not they landed a fish. If crew do not fish, leave crew blank. Do NOT add crew information to client information.

SALMON	
Primary Stat. Area Fished	The 6-digit area code where you caught most of the salmon on this trip. If you fished for salmon, but caught none, write the code for the location fished the most time on this date and trip.
Maximum Rods Fished	The maximum number of rods/lines fished for salmon at any one time during this trip. Record client rods separate from crew rods.
No. Boat Hours Fished	The number of boat hours at least one rod/line was fishing for salmon. This is NOT the number of hours the boat was on the water. DO NOT include the time it took to run to the fishing grounds from port. Round up to the nearest whole hour.
Fish Kept & Released	The total number of fish kept and released by client and crew as indicated. Do NOT combine client and crew information.

BOTTOMFISH	
Primary Stat. Area Fished	The 6-digit area code where you caught most of the bottomfish on this trip. If you fished for bottomfish, but caught none, write the code for the location fished the most time on this date and trip.
Maximum Rods Fished	The maximum number of rods/lines fished for bottomfish at any one time during this trip. Record client rods separate from crew rods.
No. Boat Hours Fished	The number of boat hours at least one rod/line was fishing for bottomfish. This is NOT the number of hours the boat was on the water. DO NOT include the time it took to run to the fishing grounds from port. Round up to the nearest whole hour.
Fish Kept & Released	The total number of fish kept and released by client and crew as indicated. Do NOT combine client and crew information.

Special Notes–Rods, Boat Hours.	
What species group was targeted?	An operator must decide if gear and fishing methods were effectively targeting salmon, bottomfish, or both species groups equally.
BASIC RULE	Simply write the targeted rods and boat hours under each target species group. The sum of targeted boat hours may or may not exceed the hours the boat was engaged in fishing (see below).
EXAMPLE: ONE TARGET SALMON OR BOTTOMFISH	If **SALMON** were targeted, write the number of rods and number of boat hours under the **SALMON** section, even if no salmon were caught or kept. Do **NOT** report rods and boat hours under the species group that was **NOT** targeted.
EXAMPLE: TWO TARGETS SALMON AND BOTTOMFISH	If **BOTH** salmon and bottomfish were targeted on a trip, write the targeted rods and boat hours of targeted effort under **EACH** species group section. It is possible that the sum of salmon boat hours and bottomfish boat hours will not exceed the number of hours the boat was engaged in fishing. Yet it is also possible that the sum of salmon boat hours and bottomfish boat hours will exceed the number of hours the boat was engaged in fishing (e.g., different anglers target different species groups during the same time, or when gear used targeted both species groups equally at the same time).

Incidental Catch (same guidelines for salmon and bottomfish)	Record all fish kept and released, as indicated. Do **NOT** include rods or boat hours for a species group that was **NOT** targeted, even if fish of that group were caught and kept. **EXAMPLE: If a salmon was caught while targeting bottomfish, record the salmon as kept and/or released, but do NOT record salmon effort for that fish.**

Special Notes - Species.	
"Shakers"	Chinook (king) salmon that are under the 28" minimum size (only in the Southeast Region) that must be released upon capture, unless caught in designated terminal harvest areas.
Pelagic Rockfish	Includes black and dusky rockfish (commonly called "black bass") and yellowtail rockfish. These species of rockfish are uniformly gray, green, brown, or black (see rockfish ID chart in your regulation booklet).
Non-pelagic Rockfish	All other rockfish not mentioned above. Includes yelloweye (commonly called "red snapper"), quillback, and copper rockfish, as well as numerous other species.

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

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