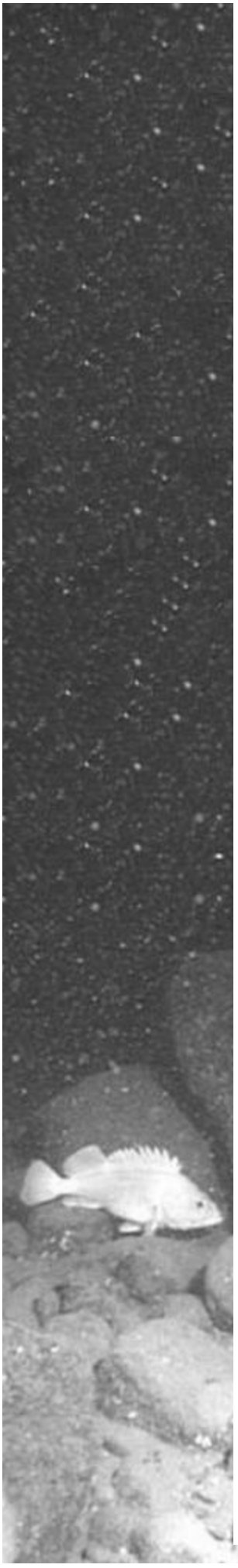

1999-2001 Report to the Board of Fisheries,

REGION I GROUNDFISH FISHERIES,

Region 1: Southeast Alaska – Yakutat

By
Victoria M. O'Connell,
Eric E. Coonradt,
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Cleo Brylinsky,
and
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Alaska Department of Fish and Game
Commercial Fisheries Division
Juneau, Alaska

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[1] The Regional Information Report Series was established in 1987 to provide an information access system for all unpublished divisional reports.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

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ABSTRACT

This report includes summaries of reported catch and effort information and management actions for the period 1999-2001 and an outlook to the 2002 season for the groundfish fisheries managed by the Alaska Department of Fish and Game in the Eastern Gulf of Alaska. Reported harvest of groundfish in Southeast Alaska totaled 6,715,210 round lbs in 1999, 6,314,907 round lbs in 2000, and 4,842,760 round lbs in 2001. The estimated exvessel value of $9.9 million in 1999 increased to $10.6 million in 2000 and declined to $7.3 million in 2001. Sablefish accounted for 80% of the exvessel value. The decline in landings and value of groundfish in 2001 is due primarily to a decline in the annual harvest objective (AHO) and catch of Northern Southeast Inside sablefish. In addition to groundfish landed in groundfish and halibut fisheries, 37,639 round lbs of groundfish (primarily lingcod and black rockfish) were landed in salmon troll fisheries and 91,411 round lbs of dogfish were landed in salmon set net fisheries during 2001.

All species are managed on a calendar-year basis, except flatfish, for which the season is October 1 through September 30. State-managed groundfish fisheries are demersal shelf rockfish, black rockfish, and lingcod in state and federal waters and all groundfish harvest in internal state waters. Inseason management action was required in the sablefish, demersal shelf rockfish, lingcod and pelagic shelf rockfish fisheries in all years during the reporting period.

The region-wide commercial annual harvest objective for lingcod in 2001 was 577,250 round lbs, 46% (262,700 round lbs) of which is allocated to the directed fishery. Total lingcod harvest declined from 539,580 round lbs in 1999 to 355,603 in 2001 and total participation decreased from 478 groundfish permits landing lingcod in 1999 to 421 permits in 2001. Landings from the East Yakutat management area dominated the harvest, accounting for about 45% of the reported catch in 1999 and 2000. New, lower annual harvest objectives were implemented in 2000. The directed fishery harvested 137,288 round lbs in 2001 compared with 306,659 in 2000 and 275,019 in 1999. There were 39 Southeast lingcod permits fished in 1999, 35 in 2000, and 25 in 2001. The 2000 harvest in East Yakutat greatly exceeded the reduced annual harvest objective but was contained to the annual harvest objective in 2001. Much of the directed fishery annual harvest objective in the Central Southeast Outside remained unharvested. Landed troll catch of lingcod was 27,753 round lbs in 2001 and 56,766 round lbs through October 2002.

The total reported catch of demersal shelf rockfish was 969,777 round lbs in 1999, 786,706 in 2000, and 860,958 in 2001 with 775 groundfish permits making landings. The directed fishery declined in size between 1999 and 2001, with 83 permits landing 593,638 round lbs in 1999 compared to 51 permits landing 457,980 round lbs in 2001. The directed fishery seasons were very brief in Central Southeast Outside and Southern Southeast Outside areas. In 2002 the directed fishery in East Yakutat was preempted by the halibut fishery.

The total landings of pelagic shelf rockfishes taken in internal waters have averaged 28,000 round lbs per year for the past five years, with approximately 65% taken by mechanical jig gear in the directed fishery. In 2001, 116 permits made landings of pelagic shelf rockfishes, eight of which were categorized as directed fishery permits. Black rockfish accounted for 90% of the pelagic shelf rockfishes reported catch. The other rockfish and shortspine thornyhead reported catch in internal waters declined significantly between 1999 and 2001. In 1999, 654,469 round lbs were reported landed by 628 permits compared to 545 permits reporting 487,317 round lbs in 2001. Most of this decline was attributable to decreases in the Northern Southeast Inside sablefish annual harvest objective. The dominant species in the landed catch was shortspine thornyhead followed by shortraker rockfish.

The Northern Southeast Inside sablefish fishery annual harvest objective was decreased from 4.8 million round lbs to 3.1 million round lbs for 1999-2000 and further decreased to 2.2 million round lbs in 2001. The equal quota share of 28,600 round lbs in 1999 and 2000, was decreased to 19,600 round lbs in 2001. One hundred and twelve permits were issued in 1999 and 111 were issued in 2000 and 2001. The Southern Southeast Inside sablefish longline fishery was open for 45 days and the pot fishery for 76 days in 1999, during which, 661,424 round lbs of the guideline harvest limit of 696,000 round lbs were taken. In 2000 the SSEI sablefish longline fishery was extended from 45 days to 76 days. A total of 590,420 round lbs of the 696,000 round lbs annual harvest objective were taken that year. In 2001, the annual harvest objective remained the same and 650,435 round lbs were landed that year. Twenty eight permits were issued in 2001, four of which were pot gear permits.

Pacific cod landings in Northern Southeast Inside and Southern Southeast Inside increased to 808,175 round lbs in 1999 before falling to 346,893 round lbs in 2001. A total of 236 permits made landings in 2001, 77 of these permits were categorized as directed fishing for Pacific cod. As in the past, the majority of the harvest (88%) was taken in Northern Southeast Inside. The use of Pacific cod for bait is thought to be significant however much of this harvest is unreported. Regulations requiring reporting of these catches have been ineffective.

INTRODUCTION

The Eastern Gulf of Alaska regulatory area for groundfish management encompasses all waters surrounding the Alexander Archipelago from Dixon Entrance (54°30' N. latitude) northwestward along the outer coast to 144° W. longitude (Figure 1).

Seven state groundfish management areas have been established in Southeast Alaska (Figure 1). These areas encompass the Southeast District (SE). The Icy Bay Subdistrict (IBS), 144° to 140° including Yakutat Bay three-miles seaward of a line from Ocean Cape was added to the Southeast Region in 1999. Four of the areas, East Yakutat (EYKT) section, Northern Southeast Outside (NSEO) section, Central Southeast Outside (CSEO) section, and Southern Southeast Outside section (SSEO), are along the outer coast and make up the Southeast Outside (SEO) district. The remaining two areas, Northern Southeast Inside (NSEI) Subdistrict and Southern Southeast Inside (SSEI) Subdistrict, are in internal waters. For the purposes of lingcod management the southern areas are redefined as two sectors, Southern Southeast Internal Waters (SSE-IW) and Southern Southeast Outer Coast (SSE-OC) (Figure 2).

The Alaska Department of Fish and Game (ADF&G) has management jurisdiction over all groundfish resources within state waters in the Eastern Gulf of Alaska (EGO) area. State waters include all internal waters of Southeast Alaska and Yakutat Bay, and waters within three miles of shore along the outer coast. In addition, a provision in the Gulf of Alaska Federal Groundfish Fisheries Management Plan (FMP) authorizes the state to execute inseason management of Demersal Shelf Rockfish (DSR) in both state and federal waters in the SEO district (outer coastal waters east of 140° W. longitude). Lingcod (*Ophiodon elongatus)* and black (*Sebastes melanops*) and blue (*S. mystinus*) rockfishes are under state jurisdiction in both state and federal waters because they are not defined as a groundfish under the FMP.
In addition to having direct management responsibility for certain groundfish species, the Region I Groundfish Project provides harvest information and other resource data from the adjacent Exclusive Economic Zone (EEZ) to the National Marine Fisheries Service (NMFS) and North Pacific Fishery Management Council (NPFMC) under the terms of a cooperative agreement with NMFS. Under this agreement, ADF&G staff has the responsibility of collecting, editing, and entering all fish tickets from the domestic harvest of groundfish in Alaska waters. The state is also involved in the management of groundfish in the EEZ through the groundfish project leader's participation on the Gulf of Alaska Groundfish Plan Team.

This document details information on reported harvest, effort, and management for the state-managed groundfish fisheries in Southeast for the period 1999 through 2001. There is no at-sea observer coverage so data on at-sea discards is not available. Catch and effort data included in this document detail the DSR, black rockfish, and lingcod harvest for the entire EGO and all groundfish species harvested in NSEI and SSEI. The primary state-managed fisheries within the region include sablefish (*Anoploploma fimbria*), rockfish, lingcod, and Pacific cod (*Gadus macrocephalus*). By regulation, sablefish can be fished only with longline and pot gear, and state-managed rockfish and lingcod fisheries are restricted to hook and line gear in the Southeast District. Fisheries targeting sablefish or demersal shelf rockfish almost exclusively use longline gear and directed lingcod fisheries use primarily dinglebar troll gear. Flatfish are harvested with beam trawl gear in limited areas of NSEI and SSEI.

A 3.2 nm square area surrounding the Cape Edgecumbe pinnacles was closed to all removals of groundfish by the BOF in 1998 and to all halibut and groundfish by the NPFMC in 1999. This represents the first no-take groundfish marine reserve in Alaska.

Harvest of state-managed groundfish reported in commercial groundfish and halibut fisheries in Southeast Alaska totaled 6,715,210 lbs in 1999, 6,314,907 round lbs in 2000 and 4,842,760 round lbs in 2001 (Table 1). The estimated exvessel value of $9.9 million in 1999 increased to $10.6 million in 2000 before declining to $7.3 million in 2001 (Table 1). The decline in value of groundfish landings in 2001 is due primarily to a decline in AHO in the NSEI sablefish fishery.

LINGCOD

Lingcod are the largest member of the greenling family, attaining a maximum length of 5 feet. This cold-water species occurs from the intertidal to depths of 270 fm from northern Baja, California to the Bering Sea. Adults tend to be resident although they exhibit some seasonal movement related to spawning and individual fish occasionally move great distances. Females attain a greater size and age than males. Lingcod live to a maximum age of at least 20 years; maximum age estimated for SE is 35 years[2]. Greenlings have an unusual reproductive strategy. Male lingcod move into nearshore rocky areas in the fall and set up territories. Females move into this area just prior to spawning in the winter. The females lay large egg masses and the males, after fertilizing the eggs, guard the egg mass from predation until hatching, generally from 7 to 11 weeks. During the nest guarding period males are particularly susceptible to harvest.

Fisheries Development and History

Prior to 1987, lingcod taken in the Southeast District were landed incidentally in fisheries targeting other species (Gordon 1994). Lingcod are a significant bycatch in the longline fishery for DSR. In some areas and seasons, bycatch rates of lingcod taken in the DSR fishery have exceeded 50%, by weight, of the DSR catch. Lingcod have also been taken as bycatch in the salmon troll and halibut longline fisheries.

The directed lingcod fishery has developed steadily since its inception in 1987 when a small fleet using dinglebar gear harvested 159,000 lbs of lingcod from the NSEO and the northern portion of CSEO. In 1991, the directed fishery catch of 501,098 round lbs accounted for almost half of the total catch (Table 2). The directed fishery occurred primarily out of Sitka with major fishing grounds off the outer coasts of Baranof, Chichagof, and Kruzof islands. In 1995 there was a major expansion of the directed fishery to the EYKT, primarily the Fairweather Ground. The peak directed fishery harvest occurred in 1995, with 656,551 round lbs taken. The total harvest of lingcod was highest in 1991, with 1,057,118 round lbs landed by all gears (Table 2).

Current fisheries for lingcod include allocations for directed fishing (dinglebar gear), sport fishing, and bycatch in the longline and salmon troll fisheries.

Regulation Development

The Board of Fisheries (BOF) first addressed Southeast Alaska lingcod management at its 1989 meeting when they implemented a size limit of 27" for lingcod in an attempt to prevent harvest of sexually immature females. In 1991 a guideline harvest limit of 300,000 to 500,000 lbs was established for the Southeast District (east of 137° W. longitude) based on catch histories in the CSEO fishery. In addition, a winter closure inside the surf line was implemented from January 1 through May 31 in an attempt to protect nest-guarding males.

[2] Unpublished data, Kristen Munk, ADF&G Age Determination Unit, Juneau, Alaska.

In 1994, the department met with industry representatives, including directed fishers, longliners, and trollers, and developed a lingcod management plan to present to the BOF. The board adopted an interim management strategy for Southeast lingcod in 1994. Using a habitat-based approach, GHL ranges were set between 0.25 mt/nm^2 and 0.50 mt/nm^2 of rocky habitat for each management area. Seasonal and area allocations were also set for the directed and troll fisheries in CSEO and NSEO. The seasonal closure in waters of Alaska was changed to December 1 through April 30 and the closure line was extended out to three miles offshore. A mandatory logbook program was established and legal gear types were defined as hook and line only.

In 1997, the BOF imposed additional gear restrictions, changed bycatch levels, and created year-round closures in two small areas. Longline gear was prohibited in the directed fishery and the percent bycatch in the DSR longline fishery was increased from 20 to 35%. The Sitka Sound area was closed to the retention of lingcod except in the halibut longline fishery and the pinnacle area off of Cape Edgecumbe was permanently closed to the taking of lingcod by all users. Beginning in 1997, the winter closure of the waters of Alaska was extended until May 16 by emergency order to further protect nest-guarding males.

In 2000, the BOF took significant actions regarding lingcod fishery management including AHO reductions, inclusion of the sport harvest in the total AHO, and allocation of lingcod between fishing sectors and areas (Table 4 and 5). They also defined an additional subdistrict (Icy Bay), and two sectors in the Southeast District. The western boundary of the Eastern Gulf of Alaska (Southeast District) was extended from 140° W. longitude to 144° W. longitude. The new Subdistrict, Icy Bay, comprises all waters between 140° and 144° W. longitude including Yakutat Bay three-miles seaward of a line from Ocean Cape at 59°30' W. latitude. The two sectors redefine the Southern Southeast area as follows: 1. Southern Southeast Outer Coast (SSEOC)-all waters of the Southern Southeast Outside Section and all waters of the Southern Southeast Inside Subdistrict that are south of 56° N. latitude, and west of Prince of Wales Island, or, if south of 54°43' N. latitude, that are west of 132° W. longitude (2) Southern Southeast Internal Waters (SSEIW) Sector- all waters of the Southern Southeast Inside Subdistrict not included in the Southern Southeast Outer Coast Sector (Figure 2).

Other lingcod regulations adopted by the BOF at the 2000 meeting:

1. In the directed lingcod fishery, the vessel owner or the owner's agent must register the vessel with the department before directed fishing for lingcod.
2. Trip limits may be imposed in the directed lingcod fishery by emergency order to promote an orderly fishery and to conserve the stocks.
3. Lingcod may be taken in a directed lingcod fishery only from May 16 through November 30.
4. Lingcod may be taken in a directed lingcod fishery only by mechanical jigging machines, dinglebar troll gear, and hand troll gear.
5. Lingcod may only be taken as bycatch with hook and line gear (no pots, trawls or other net gears).
6. Trollers may only retain lingcod from May 16 through November 30.

Stock Assessment and Management

The department is not currently able to reliably estimate lingcod biomass or abundance. Lacking abundance estimates, and given the complex life history and behavior of lingcod, impacts to lingcod populations from fishing are difficult to assess. The directed commercial fishery data are indicative of stock declines and

serial depletion. Analysis of catch per unit effort data (CPUE), in terms of fish per hook-hour for 1988–1998, show that CPUE had declined between 21 to 62% in areas where a directed fishery has developed. There appears to be some serial depletion in the CSEO and NSEO and the commercial fleet has moved into the EYKT and SSEO. For these reasons the AHOs for lingcod were reduced in all areas in action taken at the 1999 BOF meeting. Commercial logbook data shows an increase in CPUE in 2000 in all areas, with some decline in 2001.

Research surveys to obtain catch per unit effort independent of the fishery have been conducted seasonally since 1993. Because the movement of local stocks of lingcod in Southeast Alaska is not well understood, a tagging study was launched in the spring of 1996. To date, over 7,910 lingcod have been tagged and 206 tags have been recovered in commercial fisheries. Catch per unit effort data from these surveys indicates a moderate increase in 2002 in CSEO.

In addition to the tagging research, the department is a participant in a cooperative project with the California Sea Grant Program to use ultrasonic telemetry techniques to investigate the utility of marine reserves for protection of lingcod stocks. This project began in 1999 and data was collected through 2001. Eighty-three lingcod caught in the Cape Edgecumbe pinnacle marine reserve area, were implanted with sonic tags. Submersible receivers placed on the ocean floor monitored their movements. These data are being analyzed for estimation of natural mortality and emigration rates of lingcod in the reserve. Eight of the 83 sonically tagged fish have been caught in fisheries occurring outside the reserve.

1999, 2000, and 2001 Season Summary

In the Southeast District the total reported commercial harvest of lingcod declined approximately 30% between 1999 and 2001, from 539,580 round lbs to 355,603 rounds lbs (Table 2). Significant AHO reductions occurred in the commercial fishery due to BOF action taken in 2000 During the 2000 directed fishery, AHOs were exceeded in several areas, notably EYKT, where 161,000 round lbs were taken (Table 6). The 2001 directed fishery in EYKT was reduced by 40,000 round lbs from 1999 catch levels with directed landings totaling 89,000 round lbs. The 2001 NSEO directed fishery was down 10,000 round lbs from 1999 catch levels with directed landings totaling 18,000 round lbs. Significant declines in harvest occurred in the 2001 directed fishery in SSEOC and CSEO however these reductions were not due to AHOs as much of the directed commercial AHO was left unharvested in 2001 in these areas. Longline catch in the CSEO was down 28%, to 46,000, 10,000 round lbs less than the AHO (Table 6). Lingcod bycatch landed by salmon trollers increased in the EYKT and IBS.

2002 Outlook

The 2002 lingcod harvest through October 2002, exceeded the 2001 total harvest with increases in the directed catch and salmon troll catch (Table 6). The halibut longline fishery is ongoing and the fall DSR longline fishery opens November 16 so additional catches are expected in longline fisheries as well. Catch rates in the directed fishery and the ADF&G lingcod survey improved in 2002. Research surveys in the SEO continued with additional emphasis on tag and release of fish.

ROCKFISHES AND THORNYHEADS

More than 30 species of rockfishes from two genera (*Sebastolobus* and *Sebastes*) are landed in Region I groundfish fisheries. Shortspine thornyhead rockfish (*Sebastolobus alascanus*) inhabit the continental slope in waters as deep as 6,000 feet. The *Sebastes* rockfishes are divided into three assemblages for management purposes because cohabitating species groups are generally caught together. The assemblages are based on habitat preference and behavior:

The Demersal Shelf Rockfish assemblage is comprised of seven species of nearshore, bottom-dwelling species and includes yelloweye rockfish (*S. ruberrimus*).

The Pelagic Shelf Rockfish (PSR) assemblage is comprised of five nearshore schooling species including black rockfish and dusky rockfish (*S. ciliatus*).

The Slope rockfish assemblage is found along the edge of the continental shelf and on the continental slope in depths as great as 400 fm. This group contains all remaining species of rockfish. Rougheye rockfish (*S. aleutianus*), shortraker rockfish (*S. borealis*), and redbanded rockfish (*S. babcocki*) are the predominant commercial species in this group.

DEMERSAL SHELF ROCKFISHES

The assemblage definition for DSR has changed three times since its inception as a result of new information. The current DSR assemblage comprises seven species including yelloweye rockfish, quillback rockfish (*S. maliger*), tiger rockfish (*S. nigrocinctus*), china rockfish (*S. nebulosus*), canary rockfish (*S. pinniger*), copper rockfish (*S. caurinus*), and rosethorn rockfish (*S. helvomaculatus*).

Yelloweye rockfish, the dominant species in the DSR assemblage (in terms of catch and biomass), occur in nearshore waters to 200 fm (although commonly to 100 fm) from northern Baja California to the Aleutian Islands. These fish are habitat specific, occurring on rocky reefs, ridges, and pinnacles. They attain a maximum length of 36 inches and maximum reported age of 118 years (O'Connell and Funk 1986) although a yelloweye from SSEI was recently aged at 121 years (O'Connell et al. 2002). They are slow growing, late maturing, and ovoviviparous or viviparous (Adams 1980, Gunderson 1980, Archibald et al. 1981, Boehlert and Yoklavich 1984, Boehlert et al. 1986).

Fishery Development and History

DSR have been the target of a directed shore-based longline fishery in Southeast Alaska since the late 1970s. The fishery began in the Sitka Sound area as a small family-run, fresh-fish business, catching primarily black rockfish using skiffs and automatic jigging machines. By 1982 longline gear had replaced jigging machines and with the change in gear type the dominant species caught became yelloweye and

quillback rockfish. Harvest increased six-fold in five years with total catch exceeding one million round lbs in 1986. Prior to 1984 well over half of the total Southeast Alaska rockfish landings were reported from CSEO. Management action was limited to CSEO and as effort and harvest continued to increase much of the effort shifted into SSEI followed by a shift in the late 1980s to SSEO. A directed DSR fishery developed in EYKT in 1991, primarily targeting yelloweye on the Fairweather Ground. The majority of the DSR harvested in Southeast Alaska continues to be in EYKT, CSEO, and SSEO, with little effort and harvest in the inside waters (Figure 3). The state has not opened the directed fishery in NSEO since 1994 when the stock assessment survey in that area indicated a low abundance of fish. Table 7 lists harvest, value, and effort for the DSR fishery from 1987 through 2001.

Prior to the implementation of management for this fishery, there was a general trend toward high effort close to port followed by a period of fishing further and further from port. This is significant for several reasons. DSR are habitat specific, and tend to be resident, preferring rocky reefs, ridges, and pinnacles and consequently are susceptible to localized depletion. The market for DSR is primarily a high quality, round fish, fresh market. This means that fish may not be delivered to the plant more than four days after capture, limiting the feasible travel distance to fishing grounds. The increase in travel distance was almost certainly due to localized pressure causing declines in abundance. Imposition of regulations and inseason management action combined seems to have provided some stabilization.

Regulation Development

The DSR fishery has been intensively managed since 1989 (O'Connell 2001). Prior to 1989, the fishery occurred primarily in CSEO where a 1.3 million pound harvest cap was placed in 1984. In 1987 a draft management plan was written and AHOs were set for five management areas. A portion of Sitka Sound was closed, by emergency order, to directed commercial fishing after public testimony underscored the concern regarding localized stock depletion.

The department, concerned about the rapid increase in catch and effort, co-sponsored an industry workshop with the Commercial Fisheries Entry Commission (CFEC) and the Pacific States Marine Fisheries Commission (PSMFC), exploring management options for this fishery. The workshop was funded through PSMFC. Several recommendations for management actions came from this working group and were implemented at the 1989 BOF meeting.

In the 1980s the fishery was managed with an October 1 start date. In 1989 regulations were passed to retain the small boat, fresh-product nature of the fishery. These regulations included providing for a three-period, split season to facilitate marketing of fresh product over an extended portion of the year, and imposing a trip limit of 7,500 round lbs per five-day period. Legal gear for DSR was defined as hook and line only. Annual guideline harvest limits were reduced substantially in all areas and closures to directed commercial fishing were implemented for areas surrounding the ports of Sitka, Craig, and Ketchikan. In addition, logbooks were required by fishers directed fishing for DSR. A DSR directed fishery CFEC permit card for Southeast Alaska was introduced in 1990. Fishers making directed landings from EYKT did not use this card until 1991 when EYKT was included in the SEO district.

The directed fishery season was curtailed in the summer of 1990 and again in the summer and fall of 1991 when the prohibited species cap for halibut (halibut mortality cap in non-halibut fisheries) was met. In 1991 the NPFMC set aside a separate allocation of halibut mortality for the DSR fishery that prevents the directed DSR fishery from being impacted by excessive halibut bycatch in other Gulf of Alaska fisheries.

Bycatch and wastage of DSR in other fisheries is a concern because these species often die when brought to the surface, making release ineffective. Consequently, a regulation was passed that allowed for unlimited retention of all DSR landed incidental during the halibut fisheries. This was to minimize wastage of bycatch that occurred during the historic 24-hour halibut fisheries. Additionally, fishers may no longer target DSR while fishing for bait, and no more than 10% by weight of bait catch may be DSR.

In 1991 the NPFMC extended the SEO, and the State's management authority for DSR, from 137° W. longitude to 140° W. longitude. Further regulation changes were made at the 1993 meeting, largely drafted by the Sitka Rockfish Working Group to reflect changes in the nature of the fishery. Reapportionment of DSR by season was made to allow for more product to be taken in the winter season when the price was best. New, lower guideline harvest limits were adopted for DSR and a directed fishery harvest limit for DSR in EYKT was implemented. Trip limits were set at 12,000 round lbs for EYKT and reduced from 7,500 to 6,000 round lbs in the other management areas.

Allowable biological catch levels (ABC) and total allowable catch levels (TAC) are now set annually for the SEO as part of the NPFMC Fishery Evaluation and Stock Assessment process. These levels do not specify directed fishing levels. With the implementation of IFQ management for halibut, several major changes have occurred in management of rockfish. First, because the season for halibut is now open for eight months, the regulation that had allowed for unlimited retention of DSR during halibut fishing could easily result in exceeding the TAC for DSR, particularly when the price for DSR is high and there is an incentive to increase bycatch of these species. Therefore the directed season for DSR is limited to the non-IFQ months (January 1–March 15 and November 16–December 31) and bycatch during the halibut fishery is limited to 10%, by weight, of all halibut on board. Second, seasonal apportionment of DSR is now based on these two open periods with most of the production occurring in winter. Third, bycatch needs for other fisheries are estimated first (including an estimate of unreported mortality) and taken off the TAC prior to setting directed fishing levels in SEO.

In 1997, the BOF changed the DSR directed fishery season by regulation to reflect the way the fishery had been managed since the implementation of the halibut IFQ fishery. Sixty-seven percent of the annual TAC was allocated to the winter season and 33 percent to the fall season. In addition, the board set the lingcod bycatch to 35% in the longline fisheries, set opening and closing time to daylight hours, added dinglebar troll gear as legal gear for targeting DSR, clarified trip limits, and changed the directed fishery AHO for SSEI and NSEI to 50 mt in each area.

In 2000, the BOF adopted regulations requiring full retention of DSR in all state waters of SE. A CFEC permit holder must retain, weigh, and report all DSR taken. All DSR in excess of the allowable bycatch limits shall be reported as bycatch overage on the fish ticket. If the fish are sold, proceeds from the sale of fish must be forfeited to the State of Alaska. During the directed DSR fishery fishermen are also required to retain, weigh and report all DSR. Proceeds from the sale of fish in excess of trip limits of DSR will go to the State.

Stock Assessment and Management

The state is conducting a multi-year stock assessment survey for DSR in the SEO District. Biomass is estimated as the product of density/km^2 collected during line transect surveys, the area of rocky habitat within the 100 fm contour, and the average weight by management area (O'Connell and Carlile 1993, O'Connell et al. 2001). The NPFMC system requires that ABC and overfishing levels be set based on a

six-tier system. DSR falls under the fourth tier, where a reliable point estimate of B (biomass), $F_{30\%}$ (fishing mortality rate, F, equal to 30% of the biomass per recruit), and $F_{40\%}$ (F equal to 40% of the biomass per recruit) are available. Allowable biological catch for the SEO Subdistrict is set by multiplying the lower bound of the 90% confidence interval of biomass for yelloweye rockfish by the natural mortality rate (0.02) and adjusting for the 10% of other species landed in the assemblage. This is more conservative than using the $F_{40\%}$. The overfishing level is set using a rate of $F_{30\%}$. There is no stock assessment information available for NSEI and SSEI and these harvest levels are set at 55,125 round lbs each.

Habitat mapping and line transect surveys continued in 1999 through 2002. In 2001, line transect surveys using a submersible submarine were conducted in NSEO and CSEO. In 1999, line transect surveys were performed in SSEO and EYKT. In 2001 multi-beam mapping was conducted in the vicinity of Cape Ommaney and Hazy Islands. Multi-beam equipment was also used to map habitat on the Fairweather Grounds in EYKT in 2002.

1999, 2000, and 2001 Season Synopsis

The total DSR harvest in the Southeast District declined from 969,777 round lbs in 1999 to 786,706 round lbs in 2000, before increasing to 860,958 round lbs in 2001 (Table 1). The estimates of habitat area were revised in 2000, resulting in a reduction in TAC. The TAC was 1,345,050 in 1999, 859,950 in 2000, and 837,900 in 2001. Directed fishery AHOs, set after accounting for total mortality of DSR in other fisheries, totaled 674,730 in 1999 and 2000, and 546,840 in 2001 (Table 8). The exvessel value in the directed fishery decreased from $727,855 in 1999 to $706,842 in 2000 and $670,823 in 2001. Maximum price per pound continues to increase. The number of directed fishing permits decreased to 83 in 1999 and to 51 in 2001 (Table 7).

Management actions included area AHOs, seasonal allocations, and inseason small area closures to distribute effort. The directed fishery in CSEO continued to close within the first month of the winter and fall season. The concentrated effort and short season in CSEO is due primarily to the close proximity of good fishing grounds to Sitka, a primary port of landing. The pace of the fishery in other areas varied. In EYKT, inclement weather often prevented the AHO from being taken by the close of the season. Market conditions in SSEO continue to be unstable, influencing the pace in which the AHO was reached each year and season. Occasionally the AHO in the inside areas closed before the end of the season due to concentrated effort by a few boats. No directed fishing was allowed in NSEO.

2002 Season Outlook

As of October 31, 2002, 34 directed fishery permit holders landed 240,736 round lbs with an exvessel value of $376,779. An additional 403,720 round lbs, valued at $327,527 were landed as bycatch in other fisheries (Table 7).

The directed fishery AHO for DSR in the SEO district decreased to 396,750 rounds lbs in 2002 because the directed fishery was pre-empted by the halibut fishery in the EYKT Subdistrict. IPHC catch data indicates 12% of the area 3A halibut quota was taken in EYKT. Using the proposed 2002 halibut quota for

3A, the associated DSR mortality in EYKT is estimated to be 216,090 round lbs which is 11,000 round lbs greater than the area-specific TAC for this management area (O'Connell 2001). The total directed allocations by management area were 154,300 round lbs in CSEO, 132,200 round lbs in SSEO, and 55,125 round lbs each for NSEI and SSEI (Table 8). The winter season for the CSEO closed January 4, 2002. SSEO was closed to directed fishing on January 25, 2002, SSEI closed February 16 and NSEI closed February 8. Early closures were expected with the lower AHOs for the outside waters. The fall fishery opened November 16 with 63,945 round lbs in CSEO, 55,125 round lbs in SSEO, and 17,600 round lbs in SSEI and NSEI. CSEO closed in 31 hours, on November 16.

PELAGIC SHELF, SLOPE ROCKFISHES, AND SHORTSPINE THORNYHEADS

Fishery Development and History

The PSR group includes black rockfish, dusky rockfish, widow rockfish, yellowtail rockfish, and blue rockfish. Pelagic shelf rockfish are taken as bycatch in longline and troll fisheries in NSEI and SSEI (Table 9). A small black rockfish directed fishery developed in the early 1980s but was short lived. A new directed fishery using mechanical jigging machines developed rapidly in Southeast in 1992 and peaked in 1997 before declining to low levels due to low effort in 1998 (Figure 4). In 1999, the NPFMC removed black and blue rockfish from the FMP. The State of Alaska now has sole management and assessment responsibilities for these species in state and federal waters.

Slope rockfish include all deepwater species of rockfish not included in the DSR and PSR assemblages. Shortspine thornyhead catches are included with this group although they are not rockfish. Slope rockfishes and thornyheads are taken as bycatch in longline fisheries for sablefish, halibut, and DSR with the majority of the catch associated with the SSEI and NSEI sablefish fisheries (Table 10). In addition to the bycatch landings, there are a few longline fishermen who target slope rockfish in the NSEI fishery. Shortspine thornyhead accounts for nearly half of the landed catch, followed by shortraker rockfish, rougheye rockfish, and redbanded rockfish.

Regulations

All non-DSR rockfish are managed under an annual guideline harvest limit of 1,100,000 rounds lbs. This includes all non-DSR in NSEI and SSEI and, beginning in 1999, black and blue rockfishes for SEO.

Rockfishes are limited to hook and line gear and longline gear is not a legal gear for directed fishing for PSR.

Full retention regulations passed at the 2000 BOF meeting require that all rockfish caught be weighed and accounted for on fishtickets. Proceeds of sales in excess of legal landing limits are forfeited to the State of Alaska.

Stock Assessment and Management

The directed fishery for black rockfish focuses on fishing in nearshore, shallow water rock "reef" habitat, an area traditionally very difficult to assess. In 1999, the department conducted a pilot study to evaluate the feasibility of a combination depletion experiment/mark-recapture survey for assessing nearshore black rockfish stocks. The pilot study focused on developing appropriate field methods, including the use of underwater cameras. Based on experiences in 1999, a revised study was conducted in 2000. The department concentrated effort on two areas with high black rockfish abundance. A total of 2,483 black rockfish were tagged and released during the 2000 field season. Additionally, 20 tagged fish were recaptured, 17 had been released in 1999, and three had been released in 2000. During 2002, the department conducted additional black rockfish stock assessment surveys. Three separate trips were made, two for the purpose of locating and sampling unfished stocks of black rockfish, and one trip to locate schools of fish in water deeper than is customarily fished with mechanical jigging machines. In addition, historical catch data will be integrated with logbook and fish ticket data into a GIS application to estimate the number of removals in specific locations within the study area (Tydingco and Brylinsky 1999).

There are no assessment surveys for slope rockfishes and thornyheads although they are caught as a bycatch on the annual longline surveys. Data on length and age are collected for these species.

1999, 2000, and 2001 Season Summary

The non-black component of the PSR reported catch remained at low levels with just over 4,000 round lbs reported in each of the years 1999–2001. Black rockfish catches from the Southeast Region were 45,484 in 1999, 39,877 in 2000, and 18,528 in 2001 (Table 9). The majority of catches came from CSEO and were from the directed fishery (Figure 4).

In recent years, total catch of slope rockfishes and thornyheads has declined from 733,227 round lbs in 2000 to 487,317 round lbs in 2001 (Table 10). This decrease can be attributed to a 31% decrease in the NSEI sablefish harvest between 1999 and 2001.

2002 Season Outlook

The 2002 catch of black rockfish through October showed a dramatic increase over 2001 landings with 93,560 rounds lbs reported, 91,507 of which was taken on mechanical jigging gear. For the first time, inseason management was taken in the directed black rockfish fishery. Two statistical areas in the CSEO closed inseason in an effort to prevent local over harvest and disperse effort.

In 2002, a total of 339,116 round lbs of slope rockfish and thornyhead was landed through October.

SABLEFISH

Sablefish occur only in the Bering Sea and the North Pacific Ocean and adjacent waters from Hokkaido, Japan to Baja California with the greatest abundance in the Gulf of Alaska. Adult sablefish inhabit the deep-water areas of the continental shelf, the slope, and the deep-water coastal fjords. Most adults live in depths of 200 to 500 fm although they have been found in less than 100 fm and greater than 1,000 fm (Allen and Smith 1988). In NSEI the average age from survey samples of this long-lived species is estimated at 15 years, with a range of 1-88 years of age (Carlile et al. 2002).

Sablefish is one of the most valuable finfish in Southeast Alaska. The exvessel value of sablefish continued to increase in 1999 and 2000, peaking at an average price of $2.30 per round lb in 2000 before declining to an average of $2.08 in 2001 (Table 1). These numbers are likely underestimates of price-per-pound as retroactive payment information is not included in these calculations.

Fishery Development and History

Sablefish have been harvested in the internal waters of Southeast Alaska since the early 1900s. The fishery is split into two areas: NSEI, where fishing occurs primarily in Chatham Strait, and SSEI, where fishing occurs primarily in Clarence Strait and the adjacent waters of Dixon Entrance.

Prior to the 1940s, sablefish were primarily landed as bycatch in the halibut fishery. Halibut longline gear was modified in the late 1940s to target sablefish. Until the 1970s, harvest levels fluctuated widely due to low price and better opportunities in other fisheries. Pot gear was first introduced in 1970 in the SSEI and Dixon Entrance areas, and accounted for 33% of the harvest in the early 1970s. By 1979, pot gear accounted for less than 5% of the catch.

Season limitations were first imposed in 1945 for NSEI, and in 1982 for SSEI (Bracken 1983). Seasons were shortened as effort escalated in the 1970s and 1980s. Guideline harvest ranges (GHR) based on historic catches were established for both areas in 1980. Fleet effort and efficiency continued to increase dramatically and in NSEI the season was reduced to five days by 1984 (Table 11). In 1985, a limited entry program was implemented for the sablefish fishery in both NSEI and SSEI. However, the number of vessels and overall operating efficiency of the longline fleet increased significantly after the limited entry program was implemented. In order to stay within GHRs, the department continued to reduce the number of fishing days in both areas. In NSEI, the number of fishing days fell from 76 in 1980 to one in 1987. A one-day opening continued through 1993. In that year, the fleet harvested 3,640,000 dressed lbs, 2,140,000 lbs over the upper bounds of the 1,500,000 dressed lbs GHR. In an effort to improve management, the BOF adopted an equal quota share system (EQS) for NSEI in 1994. This system had been recommended by a working group of industry representatives and state fisheries managers. In SSEI, the number of fishing days declined from 200 days in 1980 to two days in 1996 (Table 12). In 1997, at industry's request, the BOF adopted a similar EQS system for SSEI. In addition to minimizing the risk of overharvest and loss of gear, the EQS allowed the five limited-entry pot permits to re-enter the fishery. These pot permits had been functionally excluded due to the short season in recent years.

Regulations

Management regulations, including guideline harvest ranges, fishing seasons, and gear specifications, are defined separately for the NSEI and SSEI sablefish fisheries. The EQS system requires the department to divide the AHO equally among the CFEC permits eligible for each fishery. The guideline harvest range (GHR) for NSEI is 1.59 to 4.8 million round lbs and the GHR for SSEI is 400,000 to 790,000 rounds lbs. Only longline gear can be used to take sablefish in the NSEI fishery. Both longline and pot gear are legal in the SSEI fishery and pot gear may be longlined. There is no sablefish fishery in the state-managed 0-3 mile zone in outside coastal waters of Southeast.

The NSEI fishery is open between September 1 and November 15. The SSEI fishery is open for longline gear between June 1 and August 15, and for pot gear from September 1 to November 15. The SSEI seasons are split to avoid possible gear conflicts.

Stock Assessment and Management

In 1988, the department began annual longline research surveys in both NSEI and SSEI to assess the relative abundance of sablefish over time. Previous research indicates some movement of sablefish into and out of NSEI and substantial movement into and out of SSEI. The extent of movement in unknown, therefore, department surveys are conducted a few weeks prior to the start of each fishery to examine stock condition of sablefish near the time of these fisheries. Fixed sampling stations were randomly assigned within statistical areas in both Chatham and Clarence Strait, where the majority of fleet fishing effort is focused. Once established, the same stations are fished in a similar manner each year to estimate change in relative abundance over time. A general linear multivariate model (GLMM) has been used to detect significant CPUE trends over time. Biological data collected during the surveys include length, weight, sex, stage of maturity and otoliths (aging structures). This data is used to describe the age and size structure of the populations and detect recruitment events.

In 1997, the department changed the survey design (Cartwright 2000). Prior to this year, the survey gear was retrieved one hour after it was deployed. There were concerns that a 1-hour soak in certain depths and tidal/current conditions might not adequately represent relative abundance. Therefore, a 3 to 11 hour soak time for longline survey gear was implemented beginning in 1997. At the same time, we standardized our survey methods with the National Marine Fisheries Service (NMFS) survey (3-hour minimum soaks, squid bait, and 70" hook spacing). In 2000 the department constructed and purchased survey gear to ensure standardization between survey vessels.

In 1997 and 1998, a mark-recapture study was conducted to estimate absolute abundance in NSEI (single event-Petersen method). We tagged and released over 5,000 sablefish in the NSEI survey each year and a small proportion of the tags were recaptured in the fishery. Preliminary results suggested “hook shyness” might be present which may result in overestimates of abundance. In 2000 the department began using pot gear for initial capture and tagging, to reduce the chance of hook shyness and thereby promote more accurate estimates of abundance (Richardson 2001). Preliminary results indicate that hook-shyness has decreased with this new approach. Tags may also be useful to estimate an annual exploitation rate and to describe movement patterns of sablefish between the internal waters of Alaska, the Gulf of Alaska, and British Columbia. Application of an age-structured model (ASA) using fishery and survey data is also being explored to estimate abundance of sablefish. The NMFS uses an ASA for the Bering Sea and Gulf

of Alaska sablefish assessment. However, several assumptions necessary to use an ASA appear to be violated with the NSEI sablefish data (Carlile et al 2002).

In the past, the department set the AHOs for the sablefish fisheries after the survey was completed, just prior to the opening of the fishery. Because the tagging and the age structure data cannot be analyzed until after the NSEI fishery has been prosecuted, the department will set the overall AHO for a given year prior to the survey, using the survey and fishery data from the previous years.

In February of 2002 the Alaska Department of Fish and Game convened a multi-agency panel to conduct an independent review of the stock assessment program for the NSEI sablefish fishery. A report detailing past stock assessment and management programs was prepared and given to the review committee in advance of the panel meeting (Carlile et al. 2002). The panel met with ADF&G staff to discuss the stock assessment report and to gain further insight into the details of the fishery and assessment. They then convened privately to draft recommendations for consideration (Leaman et al. 2002). Based, in part, on this review and on additional assessment data available in 2002, the department took a new approach for setting the AHO for NSEI sablefish. The AHO was set based on a harvest rate applied to an estimate of biomass. A Peterson estimator applied to mark-recapture data from tail-clipped fish was calculated (Seber 1982). Previous AHOs have been set based on historical catch levels and evaluation of fishery and survey data.

SSEI is assessed for change in relative abundance of sablefish using survey and fishery CPUE data as well as age and length frequency distributions. Sablefish appear to move in and out of this area which violates assumptions of a closed population. Consequently Peterson mark-recapture estimates of abundance or exploitation rate are not possible for this fishery.

1999, 2000, and 2001 Season Summary

The total reported sablefish landings from both state-managed fisheries were 3,704,697, 3,672,579, and 2,793,052 round lbs in 1999, 2000, and 2001 respectively (Table 1). The average exvessel price per round pound of sablefish increased from $2.12 per round lb in 1999 to $2.33 per round lb in 2000 and declined to an average of $2.08 per round lb in 2001 (Table 1).

NSEI

The NSEI sablefish fishery continued to stay within the 4.8 million round lbs GHR in 1999-2001 under the EQS system (Table 11, Figure 5). The Commercial Fisheries Entry Commission (CFEC) issued 112, 111, and 111 permanent and interim-use permits for the fishery in 1999, 2000, and 2001 respectively (Table 11). The AHO was set at 3,120,000 round lbs for 1999 and 2000 and 2,184,000 round lbs for 2001. This decrease was based on fishery CPUE and a mark-recapture-based estimate of exploitation rate that suggested the exploitation rate for the 2000 fishery was higher than previously thought (Richardson and O'Connell 2002). The EQS increased slightly from 28,000 round lbs in 1999 to 28,600 round lbs in 2000, and decreased to 19,600 round lbs in 2001. The total reported catch was 3,043,273 rounds lbs in 1999, 3,082,159 round lbs in 2000, and 2,142,617 round lbs in 2001.

During this reporting period, the AHO was determined by using the fishery and survey performance data (CPUE), the survey biological data and the tag return information. The survey CPUE in round lbs per hook was similar in 1999 and 2000, (1.78 vs. 1.81) and increased to 2.43 in 2001. The commercial catch rates,

standardized to hook spacing, in NSEI were fairly stable over the same time period at about 0.54 to 0.50 round lbs per hook.

SSEI

The SSEI sablefish fishery was managed within the AHO of 696,000 round lbs in each of the years from 1999 through 2001. The EQS was 24,000 round lbs during this reporting period. The total reported catch for all gears in the SSEI sablefish fishery was 661,424 round lbs in 1999, 590,420 round lbs in 2000, and 650,435 round lbs for 2001 (Table 12; Figure 5). The number of permits fished decreased from 29 to 28 between 1999 and 2000 due to the elimination of a interim-use longline permit (Table 12).

During this reporting period, the survey CPUE in round lbs per hook was similar between 1999 and 2000 (0.91 vs. 0.95) but decreased significantly in 2001, to 0.77 rounds lbs per hook. The longline catch rates, standardized to hook spacing, in SSEI declined between 1999 and 2001, from 0.45 to 0.31 round lbs per hook.

2002 Season Outlook

NSEI

The Peterson estimate yielded a biomass point estimate of 23 million round lbs with a lower 90% confidence limit of 21.5 million round lbs (Carlile in preparation)[3]. The lower 90% confidence limit was used to establish exploitable biomass. This approach is consistent with ADF&G management of DSR and other species (e.g. urchins, cucumbers, and geoducks) and is a way to account for uncertainty. A conservative approach is especially appropriate due to concerns of low stock levels.

A harvest rate of $F_{40\%}$ (0.101) was applied to the lower 90% confidence limit to yield a total allowable catch (TAC) of 2,171,500 round lbs for all fisheries in NSEI. The harvest rate $F_{40\%}$ refers to the harvest rate that would provide for an equilibrium level of spawning per recruit equal to 40% of the equilibrium level of spawning per recruit in absence of any fishing.

Before setting the directed fishery AHO for 2002, estimates of mortality associated with all other fisheries and discard mortality associated with the directed fishery must be removed. This was a difficult number to estimate, as there was little information available. It is currently based on International Pacific Halibut Commission survey and department survey data. We anticipate that refinements will be made to these estimates annually as more information becomes available.

The 2002 NSEI sablefish AHO is 2,005,000 round lbs. There are 109 permits allowed to fish this year, and the EQS is 18,400 round lbs. Fish ticket data reports 109 permits landed 2,009,254 round lbs, including overages. Forty permit holders landed catch above their EQS, totaling 17,333 round lbs. The exvessel average price per pound was $2.40, yielding an exvessel value near five million dollars. Preliminary data suggests that the commercial CPUE has improved slightly this year with overall CPUE at 0.63 round lbs per hook. The 2002 survey CPUE was 2.30 round lbs per hook, slightly lower than 2001, but above the 1999 and 2000 survey results.

[3] Details of the stock assessment will be available in a Regional Information Report: D. Carlile. 2002. 2002 Chatham Sablefish Assessment. This report is currently in preparation for publication.

SSEI

The 2002 AHO was 696,000 round lbs. The EQS for each of the 29 permit holders was 24,000 round lbs. The longline fishery was closed August 15, 2002 and preliminary data suggests that the commercial catch per unit effort has improved over recent years. The 24 participants in the longline fishery took 554,074 round lbs of sablefish, worth an exvessel value of $1,074,904. The pot fishery in SSEI opened September 1 and closed November 15, 2002. A total of 96,265 round lbs worth $203,938 were landed by four permits.

PACIFIC COD

Pacific cod are found from the northern Yellow Sea in China through the Bering Sea as far north as the Chukchi Sea, and south along the Gulf of Alaska and the coast of North America to Monica Bay, California (Love 1991; Westrheim 1996). Pacific cod inhabit the waters of the continental shelf and the upper continental slope waters (Bakkala et al. 1984; Westrheim 1996).

Fishery Development and History

It is difficult to piece together the true catch history of the directed Pacific cod fishery in the inside waters of southeast Alaska, because there are limited landing records for the fishery. Much of the catch is used as bait in other fisheries and fishticket reporting compliance of bait catch has been poor. There have only been a limited number of vessels participating in the directed fishery for the past 12 years, and to date, the AHO has never been achieved. A five-year average shows 35 vessels have participated in the NSEI directed Pacific cod fishery per year (Coonradt 2002). Of these 35 vessels, 11 vessels take approximately 281,000 round lbs per year, which accounts for 55 percent of the total reported directed catch in NSEI. In SSEI there have been an average of two vessels participating in the directed fishery (Coonradt 2002).

Longline gear is the primary gear used in the directed Pacific cod fishery, which takes place in the internal waters of SE, although pots and other hook and line gear such as jig and dinglebar are also legal. The directed fishery for Pacific cod has remained open year round in state waters since the adoption of the GHR in 1993.

Regulations

In 1991, the BOF implemented a regulation setting a guideline harvest range for Pacific cod at 750,000 to 1,250,000 round lbs round weight. In 2000 the BOF limited lawful gear for the harvest of Pacific cod to longline, dinglebar troll gear, hand troll, gear, mechanical jigging machines, and pots.

Stock Assessment and Management

There are no stock assessment surveys for Pacific cod. Landed Pacific cod are sampled for biological data including length, sex, maturity, and otoliths. Aging of Pacific cod is problematic and estimated ages are not yet used for assessing stock condition.

The department sets the AHO at 1,000,000 round lbs the mid-point of the GHR. The reported landings of Pacific cod from NSEI and SSEI have varied widely over the past ten years with a low of 309,919 round lbs reported in 1990 to a high of 962,434 round lbs in 1993. The increase in catch in the early 1990s was due to the development of a food market for Pacific cod. This market has been supplied in recent years by catches in the Central and Western Gulf. No management action has been taken in this fishery during the reporting period.

A large portion of the Pacific cod taken in Southeast is used for bait in other fisheries, and is not reported on fishtickets. The implementation of additional bait regulations, including the requirement that a fish ticket be submitted to the department detailing bait catches, have largely been unsuccessful in increasing the reporting of bait taken for personal use.

1999, 2000, and 2001 Season Synopsis

Pacific cod landings have steadily decreased in the last three years, decreasing from 808,175 round lbs reported in 1999 to 592,568 round lbs in 2001. As in the past, the majority of the harvest (95%) was taken in NSEI.

2002 Season Outlook

Reported catches of Pacific cod through October 2002 were 219,731 round lbs, the lowest reported harvest in the past 20 years (Table 13).

FLATFISH

Starry flounder (*Platichthys stellatus*) are the primary species targeted in the beam trawl fishery for flatfish in SE. They occur in soft-bottomed, shallow water estuaries generally shallower than 100 m, from the Beafort Sea to Southern California and from the East Siberian Sea south to the Sea of Okhotsk and to the Sea of Japan off Korea (Mecklenburg et al 2002).

Fishery Development and History

There is relatively limited estuarine habitat in Southeast Alaska where trawl fisheries are likely to target flounder. A trawl fishery for flatfish was already established in the inside waters of Southeast Alaska by 1960 when landings of flatfish began to be documented. Between 1960 and 1965 approximately 40,000 round lbs of flatfish were harvested annually from Port Camden and delivered to the Yukon Fur Farm on Kupreanof Island for use as mink food. ADFG reporting records beginning in 1970, show a substantial increase from this annual harvest to just under 1 million round lbs by 1973 with the harvest dropping substantially by 1980. The harvest in these early years came primarily from Port Camden, Level Island, and the Stikine Flats. These fish were primarily delivered south, often in chill-vans, which kept the product live. The fishery again escalated from very minimal reported landings in the early 1980s to landings approaching nearly 800,000 round lbs, consisting primarily of starry flounder and some rocksole (*Lepidopsetta spp).* All the flatfish harvested in 1996 and 1997 were processed in Southeast Alaska, a significant change from previous years. Harvests remained high for few years and then fell substantially to less than 10,000 round lbs by 1992 and since that time have remained less than 20,000 round lbs per season (Table 14). The GHRs are low in all areas due to limited habitat and high bycatch of crab, shrimp, and halibut (Bracken et al. 1990).

Trip limits of 20,000 round lbs were implemented by the BOF in 1993. These trip limits made it uneconomical for large trawl vessels traveling south from the Western Gulf to make a season end trip to SE, something they had historically done. Since that time the fishery has remained a small local fishery with very few participants. Much of the recent harvest has been used locally in Wrangell and not all catches have been reported.

Regulations

The trawl fishery for flatfish is limited to four areas: the Stikine Flats, Level Island, Port Camden, and Anita Bay, although Stikine Flats has been closed to directed fishing since 1989. The beam trawl fishery targets pre-spawning concentrations of flatfish, hence fishing is productive over only a portion of the year. Fishing seasons are October 1 through April 15 for the Anita Bay area and October 15 through November 15 and February 15 through April 15 in the Port Camden and Level Island Fisheries. This split season is intended to reduce gear conflicts with the winter tanner crab fishery.

In 1993 the BOF implemented a 20,000 round lbs weekly trip limit that is intended to prevent overharvest of the small AHOs in this fishery. In 1997, the BOF rejected a proposal to increase the weekly trip limit to 35,000 lbs. Legal gear for directed flatfish fishing in Southeast was limited to beam trawl gear during the 2000 BOF meetings.

Department-issued permits are required to participate in the directed beam trawl flatfish fishery. The conditions of this permit require the operator to keep a detailed logbook. Open areas, gear restrictions, and reporting requirements are outlined in the individual permits. Permits are issued for 30 days and are renewable at the department's discretion. The department may also require on-board observer coverage.

Stock Assessment and Management

There are no stock assessment surveys for flatfish. Previously on-board observers collected information on CPUE and biological characteristics of the stock. Samples collected in 1988 indicated that the mature flatfish stock in the Stikine Flats area was in very poor condition and the fishery was in danger of recruitment overfishing (Bracken et al. 1990). Consequently, this area was closed to directed fishing in 1989 and has remained closed. There is no current onboard observer coverage of this fishery given the very low levels of effort in recent years.

The most recent management action for the flatfish fishery occurred in April of 1998 when the department closed the Anita Bay area to directed trawl fishing when the area AHO had been met.

1999, 2000, and 2001 Season Synopsis

The AHOs were set at the low end of the GHR: 100,000 round lbs for Level Island, 20,000 round lbs for Anita Bay, 0 for Stikine Flats, and 100,000 for Port Camden. There was only one directed trawl landing of flatfish in the 1998-1999 season and there were no landings in the 1999-2000 and 2000-2001 seasons (Table 14).

2002 Season Outlook

No vessels have registered to fish in the 2002-2003 season as of November 15, 2002.

OTHER SPECIES

Landings of other groundfish species in NSEI and SSEI continue to be low. The majority of other species are discarded at sea and not reported on fishtickets. During the reporting period pollock (*Theragra chalcogramma*) was the dominant bycatch species in the groundfish fisheries reported catch (Table 15). Over 17,000 round lbs of pollock was landed in 1999 and 4,349 round lbs of pollock were landed in 2000 with only trace amounts landed in 2001 and 2002. Skates (Rajidae) and arrowtooth flounder (*Atheresthes stomias*) were reported in each year, although total landings were inconsistent between years. Highest reported catch during the reporting period are as follows: arrowtooth landings totaled 2,562 round lbs in 1999 and skate landings totaled 6,352 round lbs in 2000. No bycatch of spiny dogfish (*Squalus acanthias*) were reported in the groundfish fisheries, however 35,881 round lbs of dogfish were reported landed in the Yakutat Bay salmon set-net fishery in 2000 and 91,411 round lbs were reported for 2001.

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Table 1. Round lbs or reported catch and exvessel value for state-managed commercial groundfish taken in groundfish and halibut fisheries, Region I, 1993-2001.[a]

Species Group	Lingcod	Flatfish[b]	Rockfish Demersal Shelf	Pelagic Rockfish[c]	Slope Rockfish	Pacific Cod	Sablefish	Total
Area Managed	Southeast District (SE)	NSEI/SSEI	Southeast District (SE)	NSEI/SSEI <1999 SE 1999-2001	NSEI/SSEI	NSEI/SSEI	NSEI/SSEI	
1993 Round Wt.	950,562	23,259	1,563,811	18,092	175,694	962,434	6,619,985	10,313,837
1993 Value	$390,836	$4,652	$834,344	$5,605	$66,764	$394,598	$6,437,864	$8,136,378
1994 Round Wt.	786,766	11,375	1,619,214	16,920	331,568	402,475	5,580,340	8,748,658
1994 Value	$346,177	$2,389	$858,680	$4,907	$192,309	$148,916	$10,210,439	$11,763,591
1995 Round Wt.	829,629	22,016	747,872	9,237	426,904	339,312	5,221,110	7,596,080
1995 Value	$481,185	$4,403	$781,092	$2,771	$273,219	$115,366	$9,045,576	$10,703,612
1996 Round Wt.	755,771	1,185	1,008,417	8,365	510,210	639,343	5,176,160	8,099,451
1996 Value	$377,886	$273	$923,641	$3,011	$321,432	$326,065	$10,807,647	$12,761,352
1997 Round Wt.	612,950	5,614	913,492	15,105	622,581	778,033	5,478,464	8,426,239
1997 Value	$330,993	$1,067	$973,727	$3,927	$397,774	$326,774	$13,153,151	$15,188,026
1998 Round Wt.	581,364	14,631	953,538	6,740	905,127	647,940	5,266,064	8,375,404
1998 Value	$308,881	$2,634	$919,950	$2,022	$534,025	$233,258	$8,316,809	$10,317,579
1999 Round Wt.	515,291	12,968	969,777	49,833	654,469	808,175	3,704,697	6,715,210
1999 Value	$319,632	$2,464	$1,019,155	$16,770	$412,315	$282,861	$7,838,126	$9,891,323
2000 Round Wt.	481,034	4,418	786,706	44,375	733,227	592,568	3,672,579	6,314,907
2000 Value	$327,726	$499	$959,146	$16,110	$445,289	$235,067	$8,570,766	$10,554,603
2001 Round Wt.	330,569	1,392	860,958	22,579	487,317	346,893	2,793,052	4,842,760
2001 Value	$148,653	$0	$945,150	$5,143	$264,396	$106,804	$5,806,356	$7,276,502

[a] Region I is defined as all waters in the Southeast District. Data are from the groundfish fish-ticket database. Values are preliminary and do not reflect additional adjustments to processor prices.

[b] The flatfish fishery data is compiled from October 1–September 30 and is listed under the year.

[c] Beginning in 1999 this includes black and blue rockfishes from all areas to 144° W., and pelagic rockfish in NSEI & SSEI.

Table 2. The Southeast District lingcod reported harvest (round lbs) for commercial groundfish and salmon troll fisheries, by gear, 1990- through October, 2002.

Year	Jig-type Gear	Salmon Troll	Longline	Total
1990	331,138	110,647	357,988	799,773
1991	501,098	93,751	462,269	1,057,118
1992	453,007	67,288	460,265	980,560
1993	493,661	71,788	465,386	1,030,835
1994	416,324	94,768	378,886	889,978
1995	656,551	89,219	189,068	934,838
1996	525,488	49,771	235,755	811,014
1997	421,035	42,508	213,261	676,804
1998	385,060	39,365	196,304	620,729
1999	275,678	30,220	233,682	539,580
2000	307,660	43,326	173,374	524,360
2001	137,474	27,753	190,376	355,603
2002 thru Oct.	178,867	56,766	145,105	380,737

Table 3. The Southeast District lingcod reported harvest effort, and value, for lingcod taken in commercial groundfish and halibut fisheries 1987-through October 2002.[a]

Year	Directed Harvest Round Wt. (lb.)	Directed Value	Directed Permits	Total Harvest Round Wt. (lb.)	Total Value	Total Permits
1987	163,938	$70,493	35	464,169	$194,951	435
1988	258,368	$118,849	59	595,542	$250,128	562
1989	196,030	$94,094	40	535,598	$208,865	602
1990	314,595	$157,298	46	678,517	$278,192	635
1991	492,742	$231,589	57	960,378	$393,755	646
1992	452,047	$194,380	61	907,957	$317,785	680
1993	486,639	$248,730	64	930,562	$392,551	577
1994	415,454	$216,110	72	786,766	$345,951	603
1995	653,228	$405,392	83	829,629	$481,185	474
1996	524,136	$262,068	101	755,771	$379,283	462
1997[b]	411,960	$234,817	60	612,950	$331,606	442
1998	385,060	$213,784	52	581,364	$308,881	429
1999	275,019	$191,051	39	515,291	$319,632	478
2000	306,659	$229,968	35	481,034	$327,726	427
2001	137,288	$65,892	25	330,569	$148,652	421
2002 through October	177,856	$125,139	28	323,971	$188,295	370

[a] Salmon troll bycatch data is not included.
[b] Directed catches of lingcod were landed on an “M” gear card until 1997 when a directed lingcod permit, “I” gear card, was issued.

Table 4. Lingcod guideline harvest limits and allocation between fishing sectors.

	Icy Bay	East Yakutat	NSEO	CSEO	SSEOC	SSEIW	NSEI
GHL	0-100,000	0-200,000	0-40,000	0-240,000	0-167,000	0-52,000	0-32,000
Directed Fishery	0%	43%	43%	40%	37%	0%	0%
Sport Fishery	33%	2%	22%	30%	44%	92%	50%
Longline Bycatch	33%	47%	27%	23%	17%	4%	30%
Salmon Troll Bycatch	33%	8%	8%	7%	2%	4%	20%

Table 5. Lingcod annual harvest objectives by fishery, management area, and year, 1999–2001.

	2001			**2000**			**1999**		
Management Area	**longline**	**directed**	**salmon troll**	**longline**	**directed**	**salmon troll**	**longline**	**directed**	**salmon troll**
IBS	33,330	0	33,330	33,330	0	33,330		0	0
EYKT	94,000	86,000	16,000	94,000	86,000	16,000		150,000	0
NSEO	10,800	17,200	3,200	10,800	17,200	3,200	77,000	50,000	19,000
CSEO	55,200	96,000	16,800	55,200	96,000	16,800	128,000	100,000	31,000
SSEOC	28,390	63,500	3,340	28,390	63,500	3,340		0	0
NSEI	9,600	0	6,400	9,600	0	6,400		0	0
SSEIW	2,080	0	2,080	2,080	0	2,080		0	0
Total	233,400	262,700	81,150	233,400	262,700	81,150	205,000	300,000	50,000

Total quota for SSEIW, SSEOC, and NSEI was 100,000 round lbs in 1999.

Table 6. The Southeast District lingcod reported harvests (round lbs) for commercial groundfish, halibut fisheries, and salmon troll fisheries by groundfish management area and gear type, 1999–October 2002.[a]

Management	2002 (through October)			2001			2000			1999		
Area	longline	directed	salmon troll	longline	directed	salmon troll	longline	directed	salmon troll	longline	directed	salmon troll
IBS	18,821	0	2,137	21,746	0	536	12,506	221	1,217	17,466	842	156
EYKT	39,980	93,172	29,249	70,662	88,688	15,352	68,760	160,744	12,201	94,330	129,513	7,475
NSEO	16,440	16,258	9,393	14,917	17,593	4,991	13,662	18,188		22,584	28,150	
CSEO	41,469	58,131	13,472	45,976	24,041	4,397	41,392	65,424	25,497	63,510	63,447	17,361
SSEOC	18,361	10,261	684	24,756	6,966	1,095	22,237	62,083	1,690	19,450	47,182	1,781
NSEI	7,130	34	1,787	10,757	0	1,307	7,745	0	1,933	14,063	5,886	3,246
SSEIW	2,904	0	44	1,562	0	75	7,072	0	788	2,279	0	201
Total	145,105	177,856	56,766	190,376	137,288	27,753	173,374	306,660	43,326	233,682	275,020	30,220

[a] Troll landings for NSEO and CSEO combined prior to 2001.

Table 7. The Southeast District demersal shelf rockfish reported harvest, effort, and value for DSR taken in commercial groundfish and halibut fisheries, 1987–October 2002.[a]

Year	Directed Harvest Round Wt. (lb.)	Directed Value	Directed Permits	Total Harvest Round Wt. (lb.)	Total Value	Total Permits
1987[b]	2,745,762	$1,427,763		3,300,563	$1,650,282	646
1988[b]	1,555,607	$777,804		1,935,895	$1,065,043	819
1989[b]	997,388	$498694		1,400,966	$768,302	833
1990[b]	690,253	$403,752	144	1,122,095	$600,190	789
1991[c]	1,147,267	$734,251	136	1,484,328	$777,496	862
1992[c]	1,087,554	$626,336	149	1,591,020	$768,960	919
1993[c]	976,368	$657,066	122	1,563,811	$834,344	834
1994[c]	982,745	$680,863	133	1,619,214	$858,680	847
1995[c]	398,401	$442,783	66	747,872	$781,092	811
1996[d]	782,776	$787,585	125	1,008,417	$923,641	736
1997[d]	651,346	$828,122	105	913,492	$973,727	718
1998[d]	622,289	$749,599	88	953,538	$919,950	733
1999[d]	593,638	$727,855	83	969,777	$1,019,155	851
2000[d]	473,385	$706,842	59	786,706	$959,146	774
2001[d]	457,980	$670,823	51	860,958	$945,150	775
2002[d] through October	240,736	$376,779	34	644,456	$706,306	727

[a] Directed fishery permit was implemented in 1990 in all areas but EYKT (1992) used M cards with >40% DSR for target prior to Y permits; dinglebar gear card was implemented in 1997.

[b] Demersal Shelf Rockfish assemblage includes: Bocaccio, Canary, China, Copper, Quillback, Redstripe, Rosethorn, Silvergray, Tiger, Yelloweye, and Unspecified DSR.

[c] Demersal Shelf Rockfish assemblage includes: Canary, China, Copper, Quillback, Redbanded, Rosethorn, Tiger, Yelloweye, and Unspecified DSR.

[d] Demersal Shelf Rockfish assemblage includes: Canary, China, Copper, Quillback, Rosethorn, Tiger, Yelloweye, and Unspecified DSR

Table 8. Directed fishery allocation and catch of DSR by management area and year, 1999 through October 2002.

	2002 through October		2001		2000		1999	
Management Area	**allocation**	**catch**	**allocation**	**catch**	**allocation**	**catch**	**allocation**	**catch**
EYKT	0	0	222,705	109,238	167,580	125,685	167,580	160,965
NSEO	0	0	0	0	0	0	0	0
CSEO	154,300	90,938	183,015	141,572	156,555	138,915	242,550	233,730
SSEO	132,200	77,282	176,400	128,300	149,940	138,915	154,350	138,915
NSEI	55,125	35,351	55,125	27,820	55,125	28,665	55,125	28,665
SSEI	55,125	37,164	55,125	51,050	55,125	28,665	55,125	30,870
Total	396,750	240,735	692,370	457,980	584,325	460,845	674,730	593,145

Table 9. The pelagic shelf rockfish reported harvest, effort, and value landed from NSEI and SSEI, for commercial groundfish and halibut fisheries, 1987–October 2002.[b] In 1999[b] the State of Alaska assumed management of black and blue rockfish in the Gulf of Alaska. Beginning with 1999 black rockfish from IBS, EYKT, NSEO, CSEO, and SSEO are included in this table. Black rockfish reported harvest in parentheses.

Year	Area and species included	Directed Harvest Round lbs	Directed Value	Directed Permits	Total Harvest Round lbs	Total Value	Total Permits
1987	PSR from NSEI and SSEI	confidential	confidential	1	7,206	$3,243	36
1988	PSR from NSEI and SSEI	11,144	$3,009	7	17,989	$5,397	44
1989	PSR from NSEI and SSEI	1,106	$387	5	9,532	$2,764	57
1990	PSR from NSEI and SSEI	1,021	$276	6	5,220	$1,357	67
1991	PSR from NSEI and SSEI	confidential	confidential	1	9,906	$3,170	58
1992	PSR from NSEI and SSEI	9,870	$2,764	10	26,315	$7,105	83
1993	PSR from NSEI and SSEI	4,868	$1,363	7	18,092	$5,605	57
1994	PSR from NSEI and SSEI	3,846	$1,115	7	16,920	$4,907	53
1995	PSR from NSEI and SSEI	2,124	$786	6	9,237	$2,771	46
1996	PSR from NSEI and SSEI	4,359	$1,221	13	8,365	$3,011	57
1997	PSR from NSEI and SSEI	8,528	$2,132	6	15,105	$3,927	61
1998	PSR from NSEI and SSEI	confidential	confidential	3	6,740	$2,022	58
1999[b]	PSR (NSEI, SSEI) Black (SEO)	35,968	$12,468	10	49,833 (45,484)	$16,770	148
2000[b]	PSR (NSEI, SSEI) Black (SEO)	32,944	$12,610	9	44,375 (39,877)	$16,110	142
2001[b]	PSR (NSEI, SSEI) Black (SEO)	10,441	$2,231	5	22,579 (18,528)	$5,143	116
2002[a,b]	PSR (NSEI, SSEI) Black (SEO)	89,791	$31,107	8	95,297 (93,560)	$33,066	82

Table 10. Other rockfish and shortspine thornyhead reported harvest, value, and effort landed in the NSEI and SSEI Subdistrict groundfish and halibut fisheries, 1985–October 2002.

Year	Directed Harvest Round lbs	Directed Value	Miscellaneous Finfish Permits	Total Harvest Round lbs	Total Value	Total Permits
1985	13,937	na	20	24,318	na	61
1986	30,669	$13,187.67	22	56,321	$21,965.19	50
1987	16,901	$7,436.44	42	52,181	$25,568.69	127
1988	15,108	$6,798.60	43	77,685	$35,735.10	146
1989	18,459	$7,014.42	42	102,053	$37,759.61	189
1990	11,347	$3,744.51	28	91,045	$39,149.35	192
1991	40,801	$16,728.41	30	147,386	$66,323.70	232
1992	35,914	$11,851.62	46	153,449	$56,776.13	249
1993	52,359	$19,372.83	58	175,694	$66,763.72	243
1994	73,198	$46,114.74	48	331,568	$192,309.44	247
1995	150,625	$88,868.75	91	426,904	$273,218.56	369
1996	271,250	$160,037.50	136	510,210	$321,432.30	452
1997	369,785	$218,173.15	156	622,581	$379,774.41	504
1998	531,426	$292,284.30	161	905,127	$534,024.93	597
1999	365,389	$219,233.40	170	654,469	$412,315.47	628
2000	494,703	$285,803.02	159	733,227	$445,289.45	575
2001	268,346	$140,110.00	128	487,317	$264,396.00	545
2002 through October	143,448	$62,136.00	75	339,116	$186,081.00	401

[a] 1987-1990 slope complex includes: POP, darkblotched, sharpchin, thornyhead ,greenstripe, northern, rougheye, shortraker, redbanded and unspecified slope.
1991-1995 slope complex includes POP, darkblotched, sharpchin, thornyhead, greenstripe, northern, rougheye, shortraker, silvergray, redstripe, bocaccio and unspecified slope.
1996-2001 slope complex includes: POP, darkblotched sharpchin, thornyhead, greenstripe, northern, rougheye, shortraker, silvergray, redstripe, bocaccio and unspecified slope.

Table 11. The sablefish annual harvest objective, equal quota share, reported harvest, value and effort in the NSEI Subdistrict, 1985 through November 15, 2002. Annual harvest objective 1985-1996 adjusted to round lbs from dressed lbs using 0.63.[a]

Year	Annual Harvest Objective (round lbs)	Equal Quota Share	Directed Fishery (round lbs)	Exvessel Value	No. of Permits	No. of Days
1985	2,380,952		2,951,056	$2,005,394	105	3
1986	2,380,952		3,874,269	$2,866,959	138	2
1987	2,380,952		3,861,546	$3,514,006	158	1
1988	2,380,952		4,206,509	$4,543,029	149	1
1989	2,380,952		3,767,518	$2,900,988	151	1
1990	2,380,952		3,281,393	$3,543,904	121	1
1991	2,380,952		3,955,189	$6,882,028	127	1
1992	2,380,952		4,267,781	$4,907,948	115	1
1993	2,380,952		5,795,974	$5,622,094	120	1
1994	4,761,905	38,889	4,713,552	$9,144,290	121	30
1995	4,761,905	38,889	4,542,348	$7,721,991	121	30
1996	4,761,905	38,889	4,673,701	$9,908,246	121	61
1997	4,800,000	39,300	4,753,394	$11,550,747	122	76
1998	4,800,000	41,700	4,688,008	$7,360,172	116	76
1999	3,120,000	28,000	3,043,273	$6,634,335	112	76
2000	3,120,000	28,600	3,082,159	$7,394,890	111	76
2001	2,184,000	19,600	2,142,617	$4,563,774	111	76
2002	2,005,000	18,400	2,009,254	$4,814,718	109	76

Table 12. The sablefish Annual harvest objective, equal quota share, reported harvest, value and effort for the SSEI sablefish fisheries, 1985 through November 15, 2002.

			Longline Fishery				Pot Fishery			
Year	Annual Harvest Objective	Equal Quota Share	Round lbs Reported	Exvessel Value	No. of Permits	No. of Days	Round lbs reported	Exvessel Value	No. of Permits	No. of Days
1985	790,000		511,617	$322,319	43	7				
1986	790,000		554,121	$260,436	22	7	Confidential	Confidential	2	7
1987	790,000		435,501	$291,785	22	5	Confidential	Confidential	1	5
1988	790,000		712,787	$719,914	26	5	Confidential	Confidential	1	5
1989	790,000		952,231	$714,173	31	5	Confidential	Confidential	1	5
1990	790,000		758,663	$553,823	29	3			0	3
1991	790,000		679,623	$625,253	30	2.4	Confidential	Confidential	1	2.4
1992	790,000		936,811	$936,811	29	2.4	Confidential	Confidential	1	2.4
1993	790,000		824,011	$815,770	27	2.4			0	2.4
1994	790,000		866,788	$1,066,149	30	2.4			0	2.4
1995	790,000		678,762	$1,323,585	28	2.4			0	2.4
1996	790,000		502,459	$899,401	28	2			0	2
1997	790,000	23,200	608,789	$1,345,423	29	45	116,281	$256,981	5	76
1998	632,000	20,400	496,210	$699,656	27	45	81,846	$113,765	4	76
1999	696,000	24,000	565,190	$1,006,038	25	45	96,234	$193,430	4	76
2000	696,000	24,000	494,133	$988,804	24	76	96,287	$187,760	4	76
2001	696,000	24,000	554,247	$1,064,154	24	76	96,188	$184,679	4	76
2002	696,000	24,000	554,074	$1,074,904	24	76	92,265	$203,983	4	76

The data includes only data from the directed fishery and does not include fish taken during the testfish fishery, illegally as bycatch in other fisheries, or reported used as bait

Table 13. Pacific cod reported harvest, value, and effort, NSEI and SSEI Subdistrict groundfish and halibut fisheries, 1985–October 2002.

Year	Directed Harvest Round lbs	Directed Value	Directed Permits	Total Harvest Round lbs	Total Value	Total Permits
1985	132,915		42	142,405	$35,601	61
1986	318,312	$79,578	99	338,145	$84,536	123
1987	724,781	$231,930	179	781,487	$250,076	259
1988	474,359	$166,026	156	522,964	$177,808	278
1989	311,255	$124,502	102	380,070	$140,626	318
1990	218,120	$80,704	74	309,919	$102,273	338
1991	504,036	$191,534	88	589,376	$212,175	322
1992	780,265	$335,514	141	886,243	$354,497	377
1993	889,676	$382,561	133	962,434	$394,598	319
1994	346,663	$138,665	77	402,475	$148,916	220
1995	285,363	$105,584	92	339,312	$115,366	237
1996	592,090	$313,808	129	639,343	$326,065	281
1997	722,814	$310,810	138	778,413	$326,933	298
1998	585,573	$216,662	106	647,940	$233,258	301
1999	709,378	$255,376	131	808,175	$282,861	356
2000	528,147	$219,118	107	592,568	$235,067	305
2001	302,714	$87,787	77	346,893	$121,513	236
2002 through October	187,107	$74,356	41	219,731	$78,398	170

Table 14. Flatfish reported harvest, value, and effort, NSEI and SSEI, 1987-1988 through 2001-2002.

Year Oct. 1 –Sept. 30	Directed Trawl Harvest Round lbs	Directed Value	Directed Permits	Total Harvest Round lbs	Total Value	Total Permits
1987-1988	861,349	$215,337	7	863,679	$215,920	15
1988-1989	532,918	$138,559	4	533,333	$138,667	11
1989-1990	278,671	$66,881	2	283,006	$67,921	6
1990-1991	340,633	$78,346	7	341,061	$78,444	11
1991-1992	58,854	$8,240	5	59,118	$8,277	6
1992-1993	Confidential	Confidential	2	23,259	$4,652	8
1993-1994	Confidential	Confidential	1	11,375	$2,389	3
1994-1995	Confidential	Confidential	2	22,016	$4,403	14
1995-1996	0	0	0	1,185	$273	10
1996-1997	0	0	0	5,614	$1,067	14
1997-1998	Confidential	Confidential	1	14,631	$2,634	17
1998-1999	Confidential	Confidential	1	12,968	$2,464	12
1999-2000	0	0	0	4,418	$499	11
2000-2001	0	0	0	1,392	$0	13
2001-2002	0	0	0	2371	$38	7

Table 15. Other species catch reported in the NSEI and SSEI groundfish and halibut fisheries, 1999–November 22, 2002, in round lbs.

SPECIES	1999	2000	2001	2002	Total
Arrowtooth flounder	2,562	43	1,633	26	4,264
Dover sole	540	3,585		390	4,514
General skate	800	6,352	124	728	8,004
Pacific tomcod	259				259
Pollock, walleye	17,049	4,349	166	26	21,590
Spiny dogfish shark	288		203		491
Grand Total	21,498	14,329	2,126	1,169	39,123

Table 16. Groundfish bycatch (round lbs) reported in the Southeast Alaska salmon troll fishery and Yakutat salmon setnet fishery, 1999–November 22, 2002.

Year	DSR	Pelagic	Slope	Pacific cod	Lingcod	Spiny dogfish	Total Round lbs	Total Value	Total Permits
1981	27,657	0	0	1,637	27,525	0	56,819	$19,915	496
1982	5,236	0	0	1,176	38,658	0	45,070	$14,573	429
1983	2,380	Confidential	0	Confidential	17,522	0	19,902	$6,956	245
1984	3,734	Confidential	0	165	24,742	0	28,641	$12,428	323
1985	1,161	Confidential	0	Confidential	20,709	0	21,870	$6,130	316
1986	Confidential	Confidential	Confidential	0	3,984	0	3,984	$5,411	83
1987	6,839	900	Confidential	511	65,645	0	73,895	$24,817	542
1988	3,498	1,370	192	Confidential	69,695	0	74,755	$27,412	542
1989	2,195	694	Confidential	237	94,806	0	97,932	$33,222	533
1990	2,284	1,059	222	0	79,914	0	83,479	$26,869	520
1991	1,524	4,834	223	Confidential	66,898	0	73,479	$28,520	496
1992	1,099	5,368	553	Confidential	43,578	0	50,598	$16,226	432
1993	3,425	4,636	1,133	0	50,530	0	59,724	$17,362	394
1994	2,641	3,356	1,283	0	44,630	0	51,910	$18,625	318
1995	2,006	14,836	2,754	Confidential	63,903	0	83,499	$40,975	422
1996	1,162	9,205	1,232	0	36,600	0	48,199	$20,239	280
1997	1,864	13,573	1,208	Confidential	30,606	0	47,251	$19,394	314
1998	2,314	15,445	1,926	274	28,343	0	48,302	$18,868	310
1999	971	13,297	1,053	523	21,772	0	37,616	$15,643	277
2000	1,481	13,846	2,294	164	32,545	35,881	86,211	$27,518	376
2001	1,470	12,875	1,761	0	21,533	91,411	129,050	$21,071	278
2002	2,169	19,347	3,384	Confidential	45,936	1,256	72,092	$27,782	242

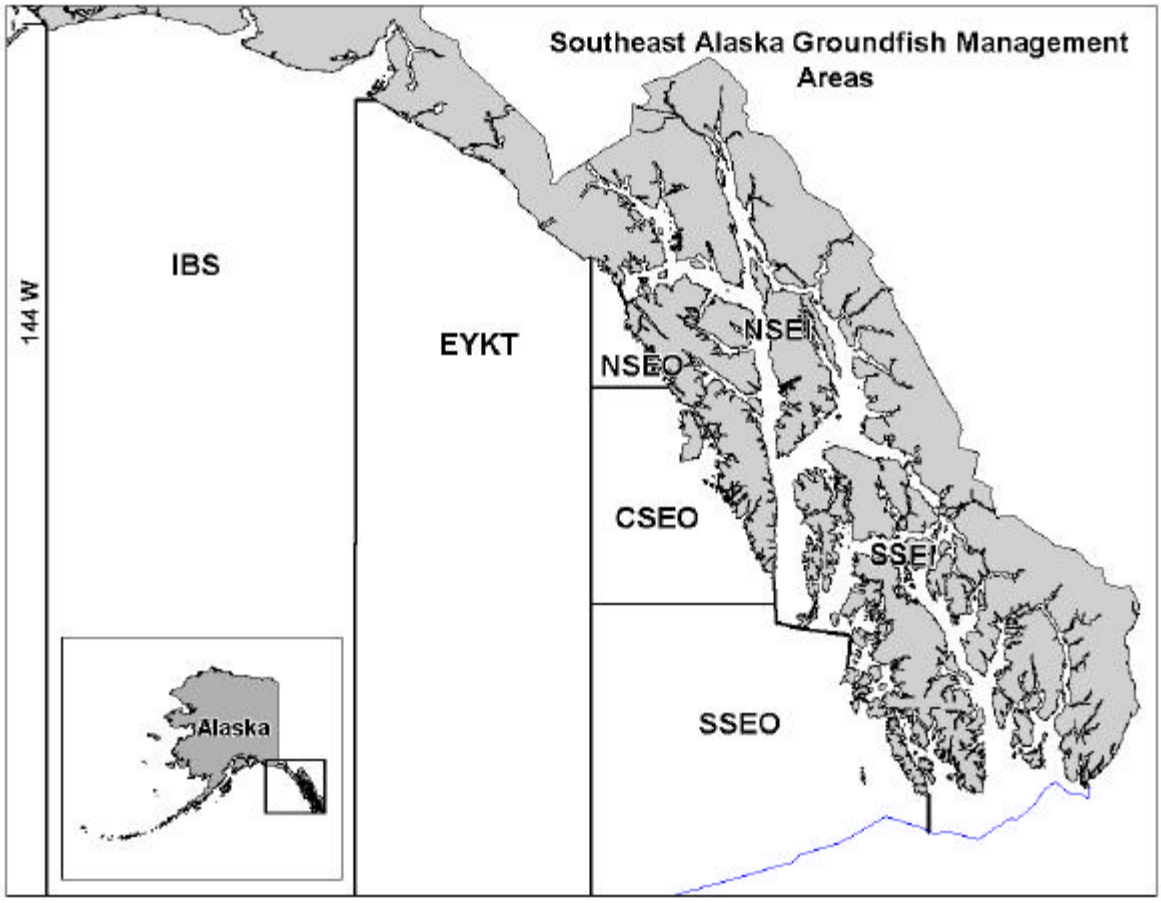

Figure 1. Southeast region groundfish management areas.

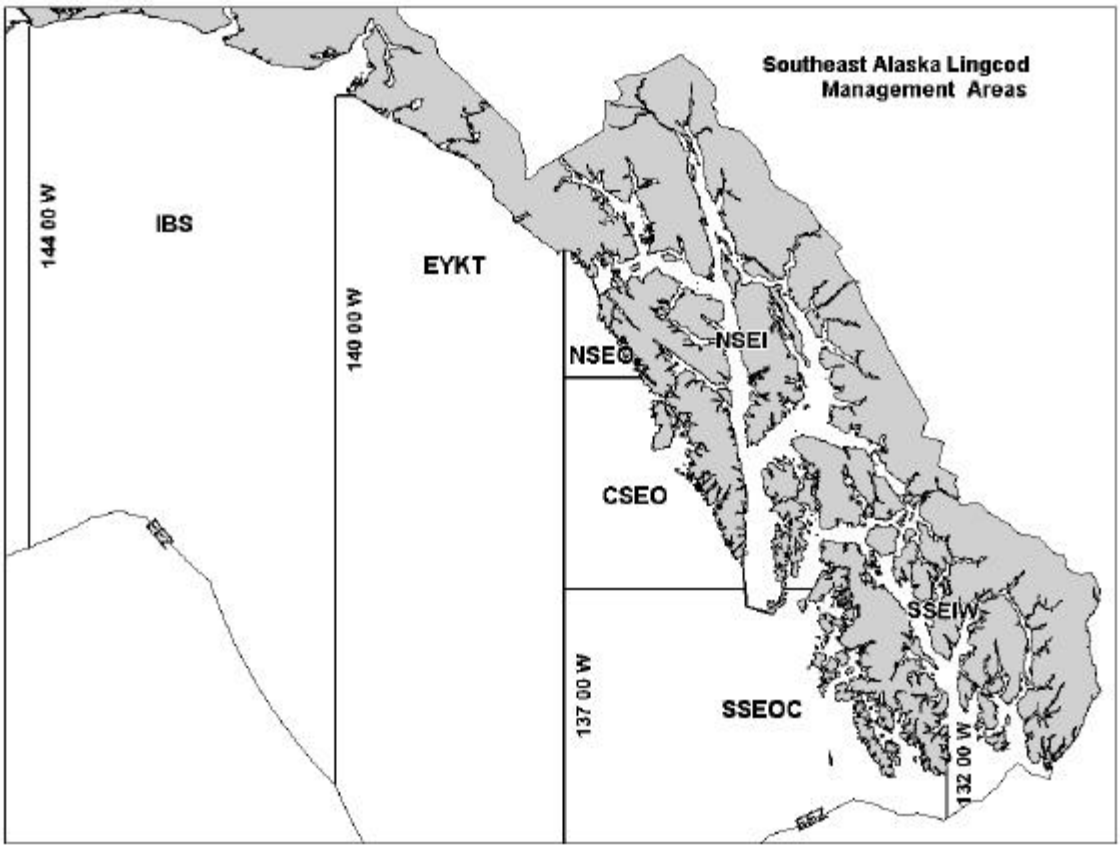

Figure 2. Southeast Alaska lingcod management areas.

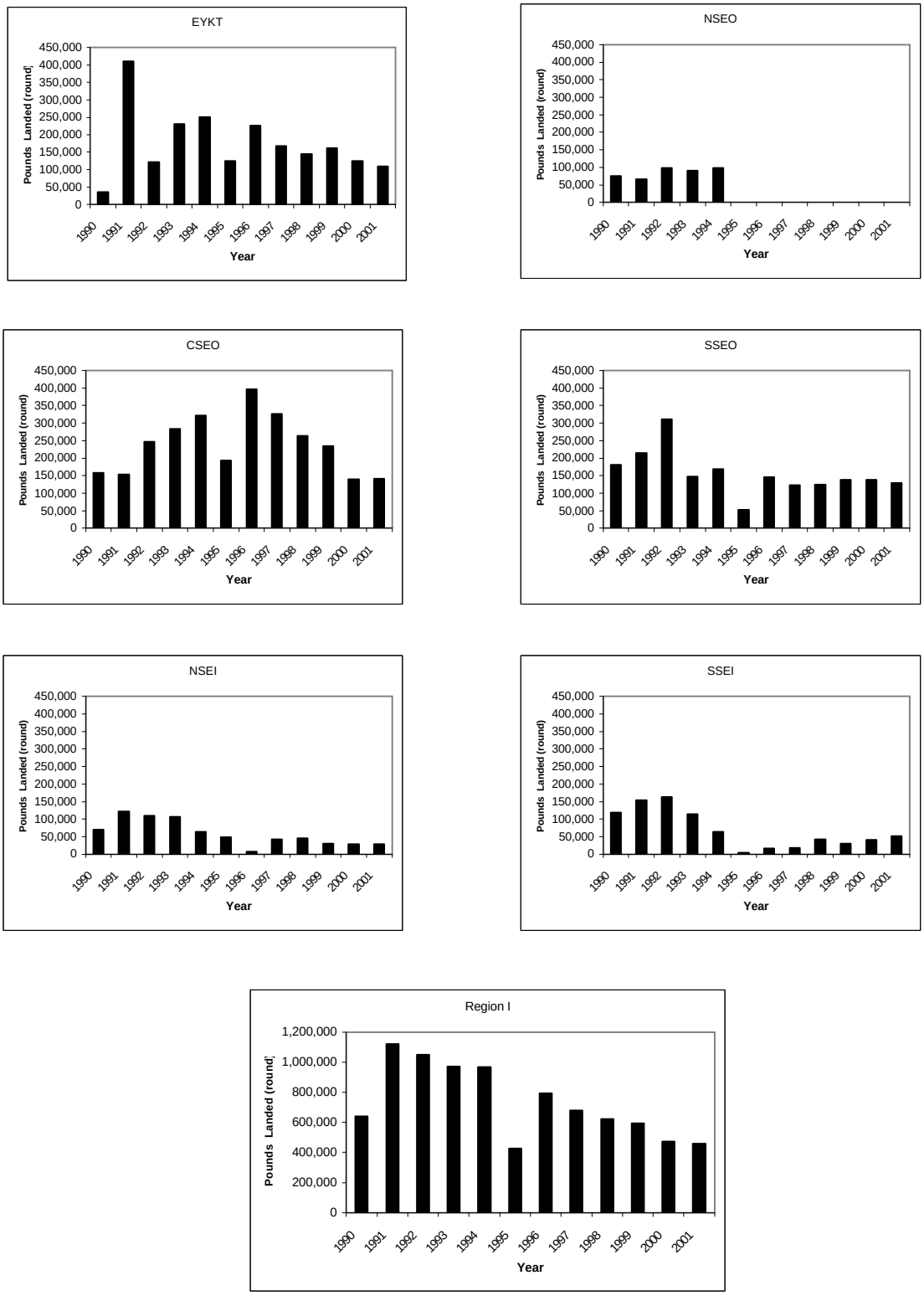

Figure 3. Directed DSR landings, round lbs, by management area by year, 1990-2001. Note that the scale is different in the Region I harvest graph.

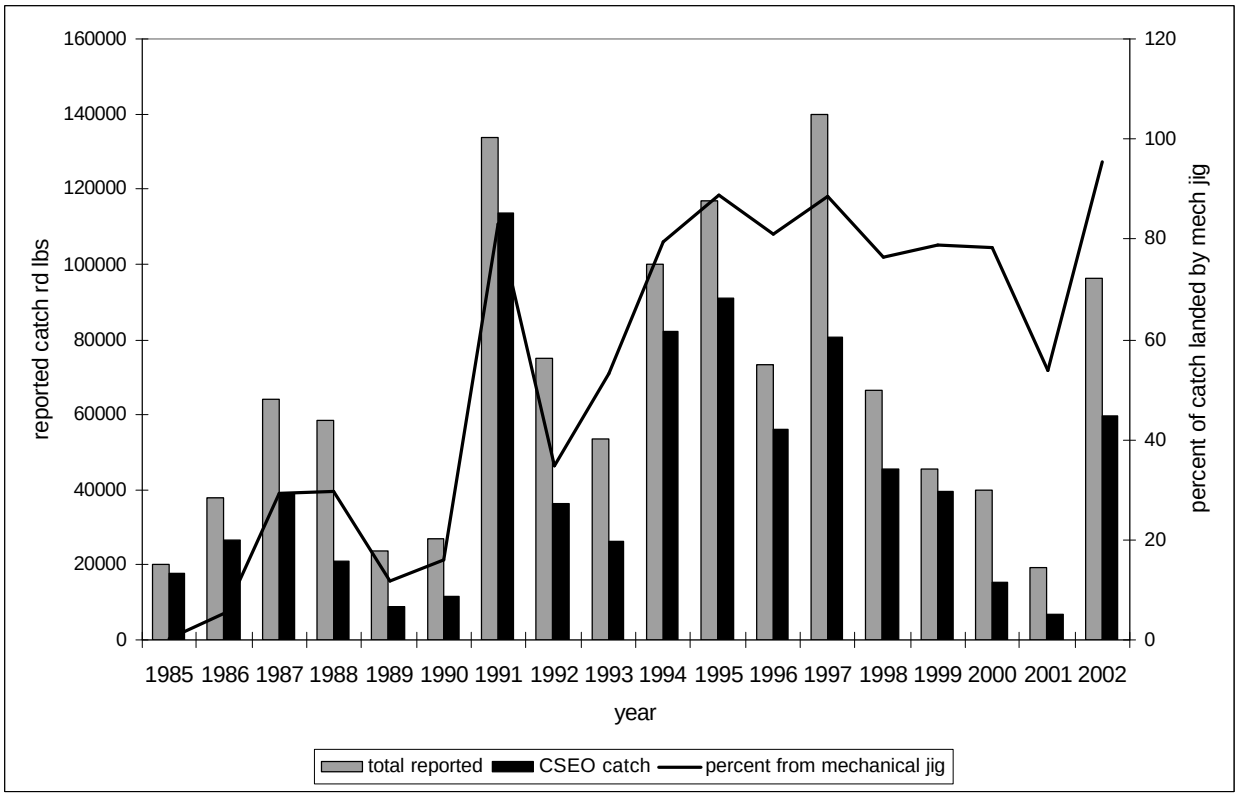

Figure 4. Reported catch of black rockfish from the Southeast District, 1985-October 2002, showing the harvest from the CSEO section and the percent taken by mechanical jigging machines.

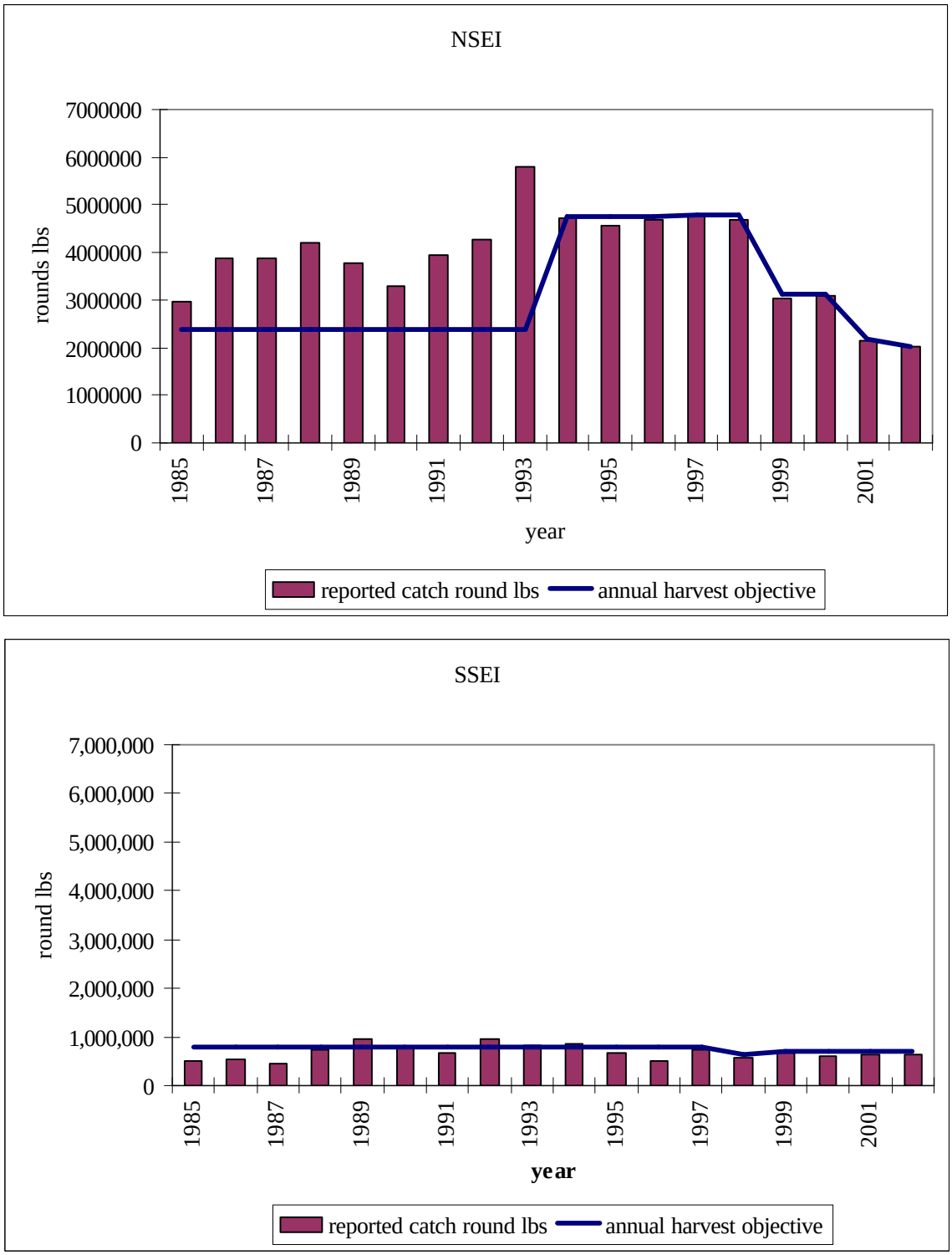

Figure 5. The total number of reported rounds lbs harvested in the Southeast Alaska sablefish fisheries NSEI (top) and SSEI (bottom) from 1985 to present. The bold line denotes the annual harvest objective.

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