Regional Information Report No. 1J20-10

2020 Southern Southeast Inside Subdistrict Sablefish Fishery Management Plan

by
Rhea Ehresmann,
Andrew Olson,
and
Jane Sullivan

May 2020

Alaska Department of Fish and Game
Division of Commercial Fisheries
## Symbols and Abbreviations

The following symbols and abbreviations, and others approved for the Système International d'Unités (SI), are used without definition in the following reports by the Divisions of Sport Fish and of Commercial Fisheries: Fishery Manuscripts, Fishery Data Series Reports, Fishery Management Reports, Special Publications and the Division of Commercial Fisheries Regional Reports. All others, including deviations from definitions listed below, are noted in the text at first mention, as well as in the titles or footnotes of tables, and in figure or figure captions.

### Weights and measures (metric)
- centimeter cm
- decimeter dL
- gram g
- hectare ha
- kilogram kg
- kilometer km
- liter L
- meter m
- milliliter mL
- millimeter mm

### Weights and measures (English)
- cubic feet per second ft³/s
- foot ft
- gallon gal
- inch in
- mile mi
- nautical mile nmi
- ounce oz
- pound lb
- quart qt
- yard yd

### Time and temperature
- day d
- degrees Celsius °C
- degrees Fahrenheit °F
- degrees kelvin K
- hour h
- minute min
- second s

### Physical and chemistry
- all atomic symbols
- alternating current AC
- ampere A
- calorie cal
- direct current DC
- hertz Hz
- horsepower hp
- hydrogen ion activity (negative log of) pH
- parts per million ppm
- parts per thousand ppt
- volts V
- watts W

### Mathematics, statistics
- alternate hypothesis H_a
- base of natural logarithm e
- catch per unit effort CPUE
- coefficient of variation CV
- common test statistics (F, t, χ², etc.)
- confidence interval CI
- correlation coefficient (multiple) R
- correlation coefficient (simple) r
- covariance cov
- degree (angular) °
- degrees of freedom df
- expected value E
- greater than >
- greater than or equal to ≥
- harvest per unit effort HPUE
- less than <
- less than or equal to ≤
- logarithm (natural) ln
- logarithm (base 10) log
- logarithm (specify base) \log_a,
- minute (angular) ’
- not significant NS
- null hypothesis H_0
- percent %
- probability P
- probability of a type I error
- probability of a type II error
- hypothesis when true \alpha
- hypothesis when false \beta
- standard deviation SD
- standard error SE
- variance
- population Var
- sample var
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2020 SOUTHERN SOUTHEAST INSIDE SUBDISTRICT SABLEFISH
FISHERY MANAGEMENT PLAN

By
Rhea Ehresmann
Alaska Department of Fish and Game, Division of Commercial Fisheries, Sitka

Andrew Olson
Alaska Department of Fish and Game, Division of Commercial Fisheries, Douglas

and

Jane Sullivan
Alaska Department of Fish and Game, Division of Commercial Fisheries, Juneau

Alaska Department of Fish and Game
Division of Commercial Fisheries, Publications Section
802 3rd, Douglas, Alaska, 99824-0020

May 2020
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Rhea Ehresmann  
Alaska Department of Fish and Game, Division of Commercial Fisheries,  
304 Lake Street, Room 103  
Sitka, AK 99835

Andrew Olson  
Alaska Department of Fish and Game, Division of Commercial Fisheries,  
802 3rd St.,  
Douglas, AK, 99824 USA

and

Jane Sullivan  
Alaska Department of Fish and Game, Division of Commercial Fisheries,  
1255 W. 8th Street  
Juneau, AK 99801

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ABSTRACT
This report provides an overview of the harvest strategy and regulations effective for the 2020 Southern Southeast Inside (SSEI) sablefish, *Anoplopoma fimbria*, commercial fishery. The SSEI sablefish commercial fishery is scheduled to open June 1 and close November 15 with legal gear restricted to longline or pots. The 2020 SSEI sablefish commercial fishery annual harvest objective (AHO) is 572,639 round pounds and is allocated among the 19 limited entry Commercial Fisheries Entry Commission (CFEC) longline/pot (C61C) and three pot (C91C) permits through an equal quota share (EQS) system, resulting in a 2020 EQS of 26,029 round pounds for each permit holder.

Key words: sablefish, black cod, *Anoplopoma fimbria*, annual harvest objective, AHO, catch per unit effort, CPUE, Southern Southeast, Clarence Strait, SSEI

INTRODUCTION

AREA DESCRIPTION
The Southern Southeast Inside (SSEI) Subdistrict management area consists of all waters as defined in 5 AAC 28.105 (a)(1) (Figure 1).

OVERVIEW
The Alaska Department of Fish and Game (department) evaluates stock status and establishes the SSEI annual harvest objective (AHO) using commercial fishery and longline survey catch per unit of effort (CPUE) data, fishery and survey biological data (age, weight, length), and stock status trends of sablefish in surrounding geographic areas, which are summarized below. No abundance estimate is obtained for the SSEI stock.

SSEI SABLEFISH SEASON

2020 ANNUAL HARVEST OBJECTIVE
The 2020 SSEI AHO is 572,639 round lb, a 3% reduction from the 2019 AHO (Table 1, Figure 2). Indirect indices of abundance (fishery and survey CPUE data and biological data) are reviewed to determine the percent change in the AHO for a given year as no abundance estimate or population model exists for this stock. There are several negative indicators for sablefish in SSEI including declines in both the longline survey and fishery CPUE indices from 2018 to 2019, truncation of population age structure in the recent decade, and concerns over suppressed spawning stock biomass. Sablefish have approximately a 30% chance of moving out of Clarence Strait waters after 1 year of occupancy, generally moving into the eastern Gulf of Alaska (GOA) and British Columbia, Canada (BC) waters (Hanselman et. al 2014). However, the lack of large fish in Clarence Strait, particularly the older fecund females, cannot be fully explained by movement and migration given historical patterns in the age data. Despite positive signs in recruitment (2014 age class) in other fisheries and geographic areas, the overall magnitude of the projected increase in spawning stock biomass is uncertain (Hanselman et al. 2019) and to what extent this projected increase may benefit SSEI is unknown. Therefore, the recommended decrease in the AHO will reduce the fishing pressure, while providing fishery stability and sustainability. For the 2020 SSEI fishery, there are 19 Commercial Fisheries Entry Commission (CFEC) longline/pot (C61C) and three pot (C91C) permits, resulting in a 2020 Equal Quota Share (EQS) of 26,029 round lb for each permit holder (Table 1).

The following points summarize stock indices in SSEI based on survey and fishery data, and also provides an update on trends in sablefish stocks in adjacent waters, as SSEI is geographically adjacent and opens to GOA and BC waters:
• SSEI longline survey CPUE (number of fish per hook) decreased 10.7% from 0.17 in 2018 to 0.15 in 2019, but the 2019 survey CPUE is 4.9% greater than the 10-year mean (Figure 3). Due to exceptional survey conditions in 2019 (the loss of a survey vessel at sea prior to the start of the survey), fewer stations were surveyed. An error was corrected in last year’s analysis code, and survey CPUE values have been updated using current methods;

• SSEI longline fishery CPUE (round lb per hook) decreased 11.3% from 0.39 in 2018 to 0.35 in 2019, and the 2019 fishery CPUE is 2.9% less than the 10-year mean (Figure 4). Because the department allows healthy discards of sablefish [5 AAC 28.170 (g)], a decrease in fishery CPUE could be attributed to a high abundance of small fish or it could be explained by a decrease in the availability of larger, more valuable sablefish;

• SSEI longline fishery and survey length distributions show some signs of recruitment with the 2014 year class maturing (Figures 5 and 6);

• Age compositions from the SSEI longline fishery and survey indicate that catch is comprised of predominately younger individuals (<10 years), that older individuals (>10 years) are caught less commonly in recent years, and that the 2014 year class is maturing (Figures 7 and 8);

• NSEI longline survey CPUE (number of fish per hook) decreased 11% from 0.21 in 2018 to 0.19 in 2019, though NSEI survey CPUE has been relatively stable since 1997;

• Federal longline survey abundance index increased 47% from 2018 to 2019. The recommended federal acceptable biological catch (ABC) for 2020 is 25% higher than 2019 but 57% below the maximum ABC due to concerns for overestimating the magnitude of the 2014 and 2016 year classes and the lack of older fish contributing to the spawning biomass (Hanselman et al. 2019);

• The Department of Fisheries and Oceans (DFO) Canadian sablefish stock assessment showed an increase of 10% in CPUE (kg/trap) from their annual pot survey and an increase of 7% in estimated biomass from 2018 to 2019 (Brendan Connors, DFO Canada, personal communication). Regulations require two 3.5-inch escape rings on pot gear and a 55 cm minimum size limit for sablefish in all Canadian waters.

REGULATIONS

LEGAL GEAR

Sablefish may be taken in the directed SSEI sablefish fishery only by longline and pots. CFEC limited entry C61C permits can use both longline and pot gear while C91C permits are restricted to the use of pot gear only. Groundfish pot gear requires individual tunnel eye openings with perimeters 36 inches or less and a sidewall containing an escapement opening equal to or exceeding 18 inches in length that must be laced, sewn, or secured together by a single length of untreated, 100-percent cotton twine, no larger than 30 thread of which may be knotted at each end only and must be parallel to and within six inches of the bottom of the pot [5 AAC 39.145 (1)]. Pots must have at least two circular escape rings, with a minimum inside diameter of four inches, installed on opposing vertical or sloping walls of the pot. King and Tanner crab pots as described in 5 AAC 34.050 (2) and 5 AAC 35.050 (2) may not be used to take groundfish.

REGISTRATION AND LOGBOOK REQUIREMENTS

Fishermen must register prior to fishing [5 AAC 28.106 (b)] and keep a logbook during the fishery. Registration forms and logbooks will be available in mid-May; however, due to COVID-19 restrictions, the details for registration and logbook distribution will be announced in the
upcoming SSEI Advisory Announcement. Completed logbook pages must be attached to the ADF&G copy of the fish ticket at the time of delivery. Confidential envelopes for logbook pages may be requested when registering.

Permit holders will receive a personal quota share (PQS) tracking form at the time of registration. This form is used to record the total round weight landed for each delivery. Each permit holder must, upon request, provide the buyer with the total round weight of sablefish the permit holder has landed to date. The department requests that a copy of the completed PQS tracking form is included with the final fish ticket of the season for that permit.

Logbooks must include, by set, the date and time gear is set and retrieved, specific location of harvest by latitude and longitude in degrees and decimal minutes for start and ending positions, hook and pot spacing, amount of gear (number of hooks or pots), depth of set, estimated weight of the target and bycatch species retained or discarded. Indicate for each set if the target species was sablefish or halibut and if there was any lost gear [5 AAC 28.175 (a)].

**TAGGED SABLEFISH**

Fishermen are requested to watch for tagged sablefish. Please record tag number(s) and attach tags directly to the logbook with the corresponding set information. All persons who return an ADF&G sablefish tag will receive a tag reward (e.g., a hat or T-shirt). Tag returns with valid recovery information (date of recovery and latitude and longitude) are entered into a random drawing for cash prizes.

**FISH TICKET REQUIREMENTS**

Landed weights must be recorded on a fish ticket at the time of delivery. If a fisherman delivers fish in the round, the total round weight delivered must be recorded on the fish ticket. If a fisherman delivers dressed fish, the fish ticket must include the total landed dressed weight as well as the round weight equivalent, determined by using the standard 0.63 recovery rate. There is a 2% allowance for ice and slime when unrinsed whole iced sablefish are weighed. A fish ticket must be completed prior to the resumption of fishing and each permit holder must retain, on board their vessel, copies of all SSEI sablefish tickets from the current season and their updated PQS tracking form. When delivering fish out of state, a completed fish ticket must be submitted to ADF&G prior to transporting fish out of Alaska.

**POSSESSION AND LANDING REQUIREMENTS**

The holder of a CFEC permit or interim use permit for sablefish may not retain more sablefish in the directed fishery than the annual amount of sablefish EQS specified by the department [5 AAC 28.170 (g)]. However, if a permit holder’s harvest exceeds the permit holder's EQS for that year, by not more than five percent, the department shall reduce the permit holder's EQS for the following year by the amount of the overage. If a permit holder's harvest exceeds the permit holder's EQS by more than five percent, the proceeds from the sale of the overage in excess of five percent shall be surrendered to the state, and the permit holder may be prosecuted under AS 16.05.723. A permit holder may not knowingly exceed a quota share or exceed the EQS in an amount greater than five percent as such actions may be prosecuted under AS 16.05.722 or AS 16.05.723 [5 AAC 28.170 (j)].

If a permit holder’s harvest is less than the permit holder’s EQS for that year, the department shall increase the permit holder’s EQS only for the following year by the amount of the underage that
does not exceed five percent of the EQS [5 AAC 28.170 (k)]. For the 2020 SSEI sablefish fishery, five percent of the annual EQS equals 1,301 round pounds.

**SABLEFISH LIVE MARKET**

A permit holder may possess live sablefish for delivery as live product except that, upon request of a local representative of the department or law enforcement, a permit holder must present sablefish for inspection and allow biological samples to be taken [5 AAC 28.170 (l)].

**BYCATCH**

Allowable bycatch that may be legally landed on an SSEI sablefish permit is listed in Table 2 and is based on round weight for both target and bycatch species. CFEC permit holders fishing for groundfish or halibut must retain, weigh, and report all rockfish taken in SSEI [5 AAC 28.171 (f)]. The full retention regulation does not apply to thornyhead rockfish. All rockfish in excess of allowable bycatch limits shall be reported as bycatch overage on the fish ticket. Any proceeds from the sale of excess rockfish shall be surrendered to the state.

When the directed Pacific cod fishery is open in SSEI, Pacific cod taken in excess of bycatch limits may be landed on the appropriate CFEC miscellaneous finfish permit.

**PROHIBITIONS**

A vessel or a person on board a vessel from which commercial, subsistence, or personal use longline fishing gear was used to take fish in the SSEI area during the 72-hour period immediately before the start of the commercial SSEI sablefish fishery, or from which that gear will be used during the 24-hour period immediately after the closure of the SSEI sablefish fishery, may not participate in the taking of sablefish in SSEI during that open sablefish fishing period [5 AAC 28.180 (a)]. The operator of a fishing vessel may not take sablefish in SSEI while sablefish from another area are on board the vessel. Also, the operator of a vessel taking sablefish in SSEI shall unload and submit a completed fish ticket to the department before taking sablefish in another area [5 AAC 28.170 (a) and (b)].

**REFERENCES CITED**


TABLES AND FIGURES
Table 1. – Annual harvest objective, equal quota share, reported harvest (round lb), ex-vessel value, and number of permits in the directed commercial SSEI sablefish fishery. Equal quota share was established in 1997. In 2017, pot gear became an allowable gear type for C61C permits.

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<th>Year</th>
<th>Annual harvest objective</th>
<th>Total harvest</th>
<th>Equal quota share</th>
<th>Ex-vessel value</th>
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<td>554,121</td>
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<td>475,466</td>
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<td>$1,800,122</td>
<td>23</td>
</tr>
<tr>
<td>2017</td>
<td>516,763</td>
<td>514,205</td>
<td>22,468</td>
<td>$1,959,865</td>
<td>24</td>
</tr>
<tr>
<td>2018</td>
<td>578,774</td>
<td>575,264</td>
<td>25,164</td>
<td>$1,560,221</td>
<td>23</td>
</tr>
<tr>
<td>2019</td>
<td>590,349</td>
<td>587,166</td>
<td>26,834</td>
<td>$1,280,022</td>
<td>22</td>
</tr>
<tr>
<td>2020</td>
<td>572,639</td>
<td>–</td>
<td>26,029</td>
<td>–</td>
<td>22</td>
</tr>
</tbody>
</table>
Table 2.—Allowable bycatch that may be legally landed on an SSEI sablefish permit. Percentage indicates amount of bycatch that may be sold on a SSEI sablefish permit and is based on the round weight of sablefish and bycatch species or species group on board the vessel. Demersal shelf rockfish (DSR) include yelloweye, quillback, canary, tiger, copper, China, and rosethorn rockfish.

<table>
<thead>
<tr>
<th>Species</th>
<th>Longline Gear</th>
<th>Pot Gear</th>
</tr>
</thead>
<tbody>
<tr>
<td>All rockfish, including thornyheads (longline gear only)</td>
<td>15% in aggregate, of which 1% may be DSR</td>
<td>N/A</td>
</tr>
<tr>
<td>Thornyheads (pot gear only)</td>
<td>N/A</td>
<td>5%</td>
</tr>
<tr>
<td>Lingcod</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Pacific Cod</td>
<td>20%</td>
<td>20%</td>
</tr>
<tr>
<td>Spiny Dogfish</td>
<td>35%</td>
<td>20%</td>
</tr>
<tr>
<td>Other groundfish</td>
<td>20%</td>
<td>20%</td>
</tr>
</tbody>
</table>
Figure 1.–NSEI and SSEI Subdistricts including restricted waters of Glacier Bay National Park and Preserve and Annette Islands Reserve.
Figure 2.—Southern Southeast Inside Subdistrict (SSEI) sablefish commercial harvest from 1986 to 2019 with equal quota share being implemented in 1997. The black dashed line represents the AHO trend over years.
Figure 3.—SSEI sablefish longline survey CPUE in sablefish per hook, 1998–2019. Error bars show +/-1 standard deviation in the data. Survey CPUE values have been updated since last year’s assessment to reflect a correction in the code.
Figure 4.—SSEI sablefish longline fishery CPUE in round pounds per hook, 1997–2019. Error bars show +/- 1 standard deviation in the data.
Figure 5.–SSEI sablefish longline fishery length distributions by sex from 2001–2019.
Figure 6.—SSEI sablefish longline survey length distributions by sex from 1998 to 2019, except 2005.
Figure 7.—SSEI longline fishery proportions-at-age by year and sex, 2001–2019.
Figure 8.–SSEI longline survey proportions-at-age by year and sex, 1988–2019, except 2005.