



Black Cod Almanac

MESA Program, Auke Bay Laboratories, NMFS, Juneau, AK

January 2015

Greetings!

We hope this New Year finds you in good health and thinking about the upcoming fishing season. To help improve communication and increase dialogue between scientists and members of the industry, we have started this newsletter. We hope to include any relevant research, links to new literature, summarized highlights of both Groundfish Plan Team and the North Pacific Fishery Management Council (NPFMC) meetings, and general news that may be of interest to those involved with the sablefish fishery. Please feel free to pass on, or send us email addresses of others who may appreciate receiving these newsletters.



Crew member on the longline survey gaffing a sablefish to be lengthed.

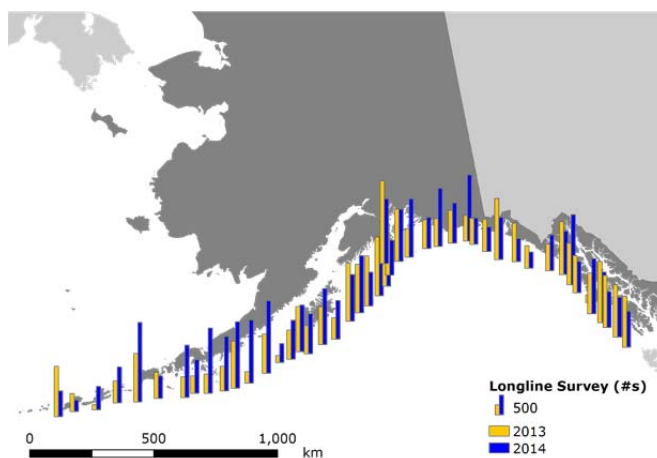
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- December 2014 NPFMC meeting summary
- New research
- New rules concerning required ID for entry into AFSC Sandpoint facility
- Calendar of station locations for the 2015 LL Survey

2014 NMFS Longline Survey

The 2014 NMFS longline survey sampled waters throughout the entire Gulf of Alaska (GOA) and the Aleutian Islands, from June 2014 – August 2014. During the survey catch is recorded, a subset of sablefish otoliths are collected for age reading, sablefish are lengthed, and a subset of sablefish are tagged for movement research. The results of this survey are the most important data source used in the sablefish assessment model, which estimates spawning biomass and is used to set harvest limits.

- LL Survey Relative Population Numbers (RPNs; area weighted measures of the numbers of fish) were up from 2013 in the western GOA, the Aleutian Islands and the Bering Sea combined, and the eastern GOA. The central GOA was stable.



Catch in number of fish at each slope station of the longline survey in the GOA for years 2013 and 2014.

- Killer whale depredation was down in the Aleutian Islands and sperm whale presence was down in the Gulf of Alaska
- Total tagged fish: 2,735 sablefish, 738 shortspine thornyhead, 5 Greenland turbot, and 43 sablefish with pop-off satellite tags

This information has not been formally disseminated by the National Marine Fisheries Service and should not be construed to represent any agency determination or policy.

2014 November Groundfish Plan Team Meeting Highlights

<http://www.npfmc.org/fishery-management-plan-team/goa-bsai-groundfish-plan-team/>

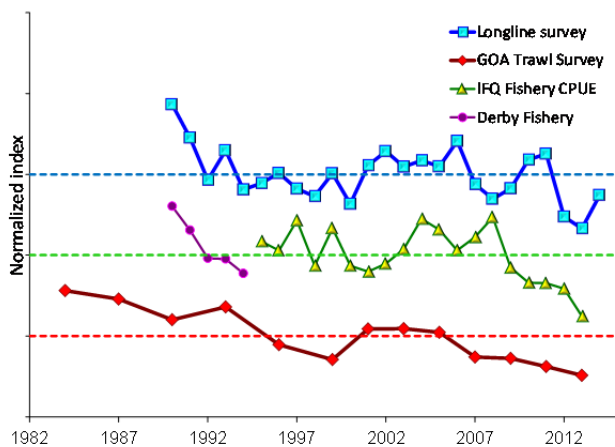
Dana Hanselman presented the sablefish assessment during the November 2014 NPFMC Groundfish Plan Team meeting that was held at the Alaska Fisheries Science Center in Seattle, WA, November 17 – 21, 2014.

The 2015 assessment included the following new data:

- **Catch:** updated historical catches from 2005 – 2013, new 2014-2016 estimates
- **Relative abundance:** 2013 longline fishery, 2014 longline survey
- **Ages:** 2013 longline survey, 2013 fixed gear fishery
- **Lengths:** 2013 longline fishery, 2014 longline survey, and 2013 trawl fishery

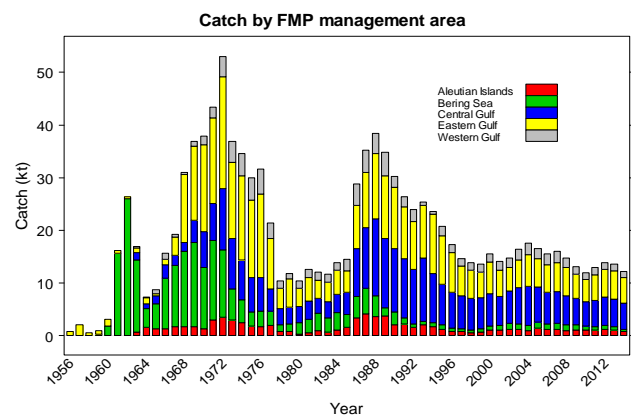
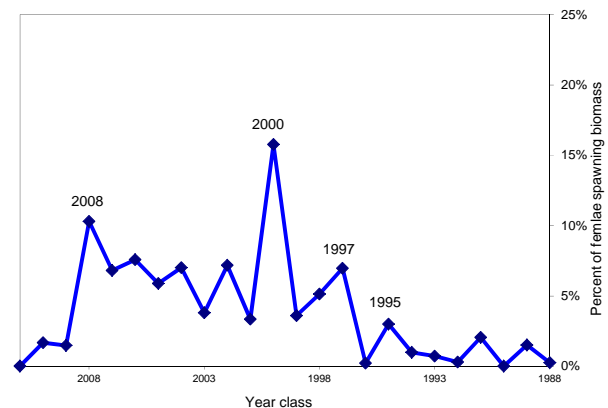
Summarized results:

- **Abundance indices:** The fishery abundance index decreased 13% from 2012 to 2013 (lowest value ever); and following a 25% decrease from 2011 to 2013 the longline survey abundance index increased 15% from 2013 to 2014.

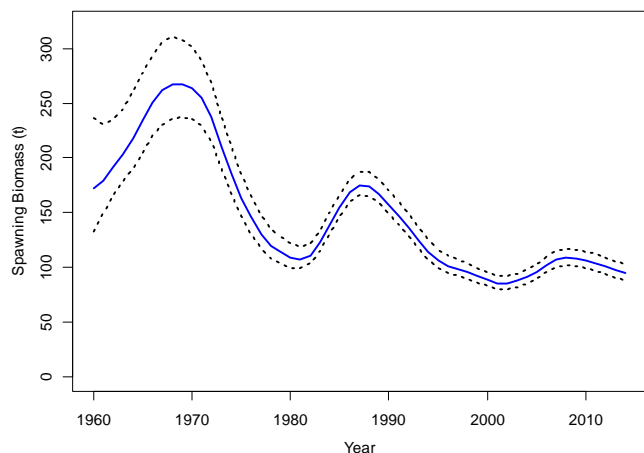


- With the exception of the 2008 year class, **year classes** between 2001 and 2010 have been **below average, which contribute to the low abundance levels**. The former heavily contributing 1997 year class is predicted to compromise < 7% of the 2015 spawning biomass, the 2000 year class 16%, and the 2008 year class 10% even though it's only 60% mature. See the following figure.

Plan Team cont.



- **Model results:** spawning biomass is projected to decline through 2018 and then increase; **author recommended 2015 ABC (quota) was 13,657 t, stable from 2014.**



- The Plan Teams recommended following the authors' continued approach for apportionment of ABC as an interim measure (-0.5% across all areas to reduce overall ABC variability).

December 2014 NPFMC Meeting Highlights

The December NPFMC meeting was held in Anchorage, AK, December 8-10, 2014.

<http://www.npfmc.org/wp-content/PDFdocuments/newsletters/news1214.pdf>

2015/2016 GOA Groundfish Specifications

The Council concurred with the author's recommended final catch specifications for the 2015 groundfish fisheries. Sablefish overfishing limits (OFL), acceptable biological catches (ABC), and total allowable catches (TAC) by area for 2015 are below:

Area	OFL (t)	ABC/TAC (t)
Gulf of Alaska	12,425	10,522
Western		1,474
Central		4,658
W. Yakutat		1,708
SE Outside		2,682
Bering Sea	1,575	1,333
Aleutians	2,128	1,802

GOA Sablefish Longline Pots

The Council refined alternatives for an action that may allow longlined pot gear in the GOA sablefish IFQ fishery. The option to use pot gear could be granted for all GOA areas or only for the GOA areas specified at final action. This analysis is now available to the public for review.

The Council refined elements of the action alternative, with a focus on managing the potential grounds preemption and gear conflict challenges associated with adding pot gear to existing hook-and-line areas. The following will be analyzed:

- A range of per-vessel pot limits (limit of 60 to 400 pots).
- The efficacy and cost of gear tracking measures
- Pot gear retrieval requirements

NPFMC cont.

Additional information of whale deterrence efforts that stakeholders have undertaken will be provided.

Final action is scheduled for April 2015.

Halibut and Sablefish Vessel IFQ Caps

The Council chose to take no action on the issue of vessel IFQ caps.

2014 SABLEFISH TAG PROGRAM RECAP

2014 NUMBER OF TAGS RETURNED:

- 600 sablefish
- 20 shortspine thornyheads
- 1 Greenland turbot



Photo of tagged Greenland turbot.

OF THOSE SABLEFISH TAGS:

- Greatest time at liberty: 13,056 days (~36 yrs)
- Shortest time at liberty: 7 days
- Greatest distance traveled: 1,998 nmi (tagged off the West Coast and recovered in the WGOA)

Don't forget to get those tags turned in for the 2014 Sablefish Tag Reward drawing, to be held in March. Look at the end of the newsletter for an address and information requested.



Photo credit Kari Fenske

Ongoing Research

Movement/Tagging:

1. Sablefish movement model with annual movement rates published:
http://www.nrcresearchpress.com/doi/abs/10.1139/cjfas-2014-0251#.VLhVJyvF_OE
2. A Ph.D. student at UAF is using a sablefish spatial model to evaluate **apportionment strategies** which will consider spawning biomass, catch variability, and economic yield. **Industry input on apportionment objectives to consider is wanted.**
3. Preliminary results are expected to be presented in September 2015.

Whale Depredation Research:

1. Better estimates of sperm whale effect on **survey** catch rates: a **12% average reduction** when sperm whales are **present** at a station (publication coming)
2. Sensitivity of assessment results to depredation (in 2014 SAFE)
3. Whale depredation estimates for sperm whales in the **fishery** are in progress

Maturity Research:

1. Validating utility of summer visual scans versus winter histological data
2. First evidence of skip spawning recorded
3. Use of satellite tags to determine if spawning aggregations/locations exist



Photo of a typical pair of ovaries seen on the summer LL survey. This maturity state would be classified as "maturing," and is not a good indicator of whether this fish would be spawning that year or not.



Photo of a pair of ovaries collected from a sablefish in late December when fish should be preparing to spawn. Eggs are visible.

Sablefish Satellite Tagging Recap

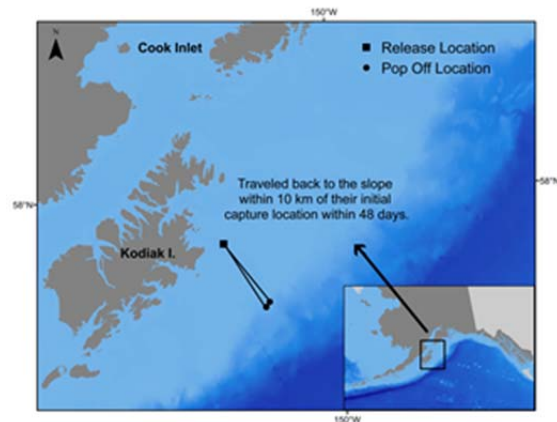
Sablefish have been tagged with pop-off satellite tags since 2012 on the longline survey, and during a 2011 winter maturity study cruise. These tags are being used to help determine if and where spawning aggregations occur for sablefish. Tags are programmed to release from the fish during the spawning season in the winter, and archived data (including geolocation) are received by passing satellites.



A sablefish tagged with a pop-off satellite tag on the longline survey.

Initial findings from Dec 2011 tagging:

Initial results from the winter tagging indicate that **site fidelity may exist** with some sablefish. Two fish were tagged and released on the shelf in Amatuli Gully, at an approximate depth of 155 m. These specimens remained within 1 km of their tagging location after 35 days. Two fish were captured on the Kodiak slope at an approximate depth of 400 m, but released that same day approximately 75 km (great circle distance) northwest on the shelf. These fish traveled back to the slope within 10 km of their initial capture location within the 48 day period.



CONTACTS

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CALENDAR OF EVENTS

SABLEFISH TAG REWARD DRAWING

TED STEVENS MARINE RESEARCH INSTITUTE, JUNEAU, AK
MARCH 4, 2015 @ 10:00 AM

Drawing held from all of the 2014 sablefish tag returns for cash rewards: 1st place - \$1,000; 2nd place - \$500; 3rd and 4th place - \$250. Do not need to be present to collect reward.

NORTH PACIFIC FISHERY MANAGEMENT COUNCIL MEETING

SEATTLE, WA

FEBRUARY 2-10, 2015

NORTH PACIFIC FISHERY MANAGEMENT COUNCIL MEETING

ANCHORAGE, AK

APRIL 6-14, 2015

TOOLS AND STRATEGIES FOR ASSESSMENT AND MANAGEMENT OF DATA-LIMITED FISH STOCKS: 30TH LOWELL WAKEFIELD FISHERIES SYMPOSIUM

HOTEL CAPTAIN COOK

ANCHORAGE, AK

MAY 12-15, 2015

NORTH PACIFIC FISHERY MANAGEMENT COUNCIL MEETING

SITKA, AK

JUNE 1-9, 2015

ATTENTION

Starting January 19, 2015 **public visitors to AFSC in Seattle for meetings** (Sand Point) will require one of the following forms of identification:

- State issued Real ID Compliant Driver's Licenses and Identification Cards (**Washington is not**)
- Enhanced Driver's License, and Identification Cards from the states of Washington, Minnesota, and New York
- U.S. Passport
- U.S. Passport Card
- **Alaska driver's license** will be accepted until October, 2015.

For more info see:

<http://www.wrc.noaa.gov/NewIdRequirements.htm>

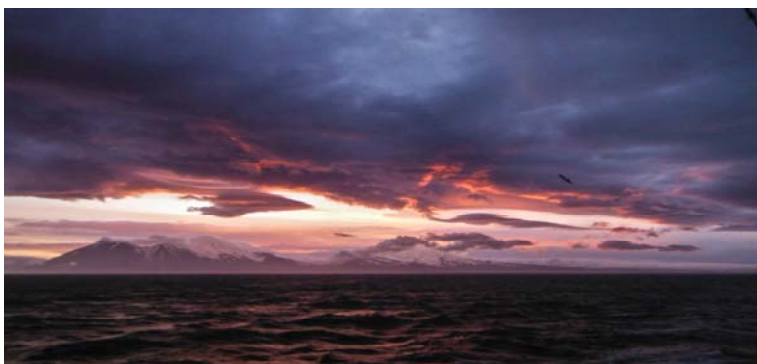


Photo credit Kari Fenske

REWARD

FOR TAGGED SABLEFISH



The U.S. National Marine Fisheries Service Auke Bay Laboratory in Juneau, AK tags sablefish (blackcod) in the Gulf of Alaska, Bering Sea and Aleutian Islands in order to study distribution and migration.

Tags may be yellow, red, or orange and are usually located below the first dorsal fin on the left side of the fish. In addition, sablefish are being tagged with $\frac{3}{4}$ inch diameter x 2 $\frac{1}{4}$ inch long electronic tags placed inside the fish with a 3 inch long fluorescent green and pink tag located near the dorsal fin of the fish. The external tag reads – “Reward for Depth Sensor Inside Fish.” These electronic tags are worth monetary rewards of up to \$500 if returned.

Postage-paid envelopes are available in most areas. Please send tags with as much of the following information as possible:


Name of vessel
Location of recovery
Fork length (from tip of snout to fork in tail)
Depth fished

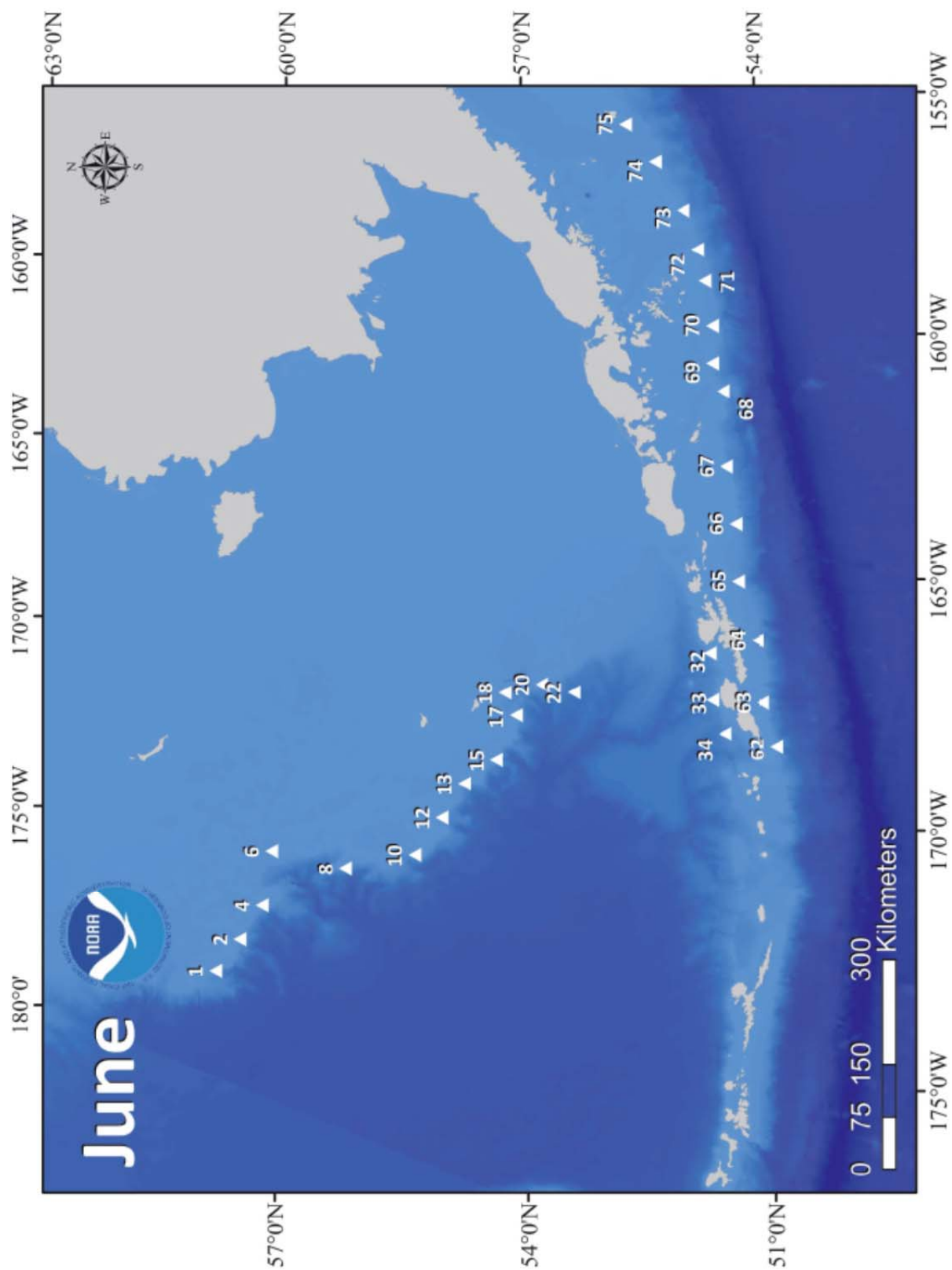
Date of recovery
Sex of the fish
Round weight
Type of gear


A reward and information on the history of the fish will be sent for each tag returned to:

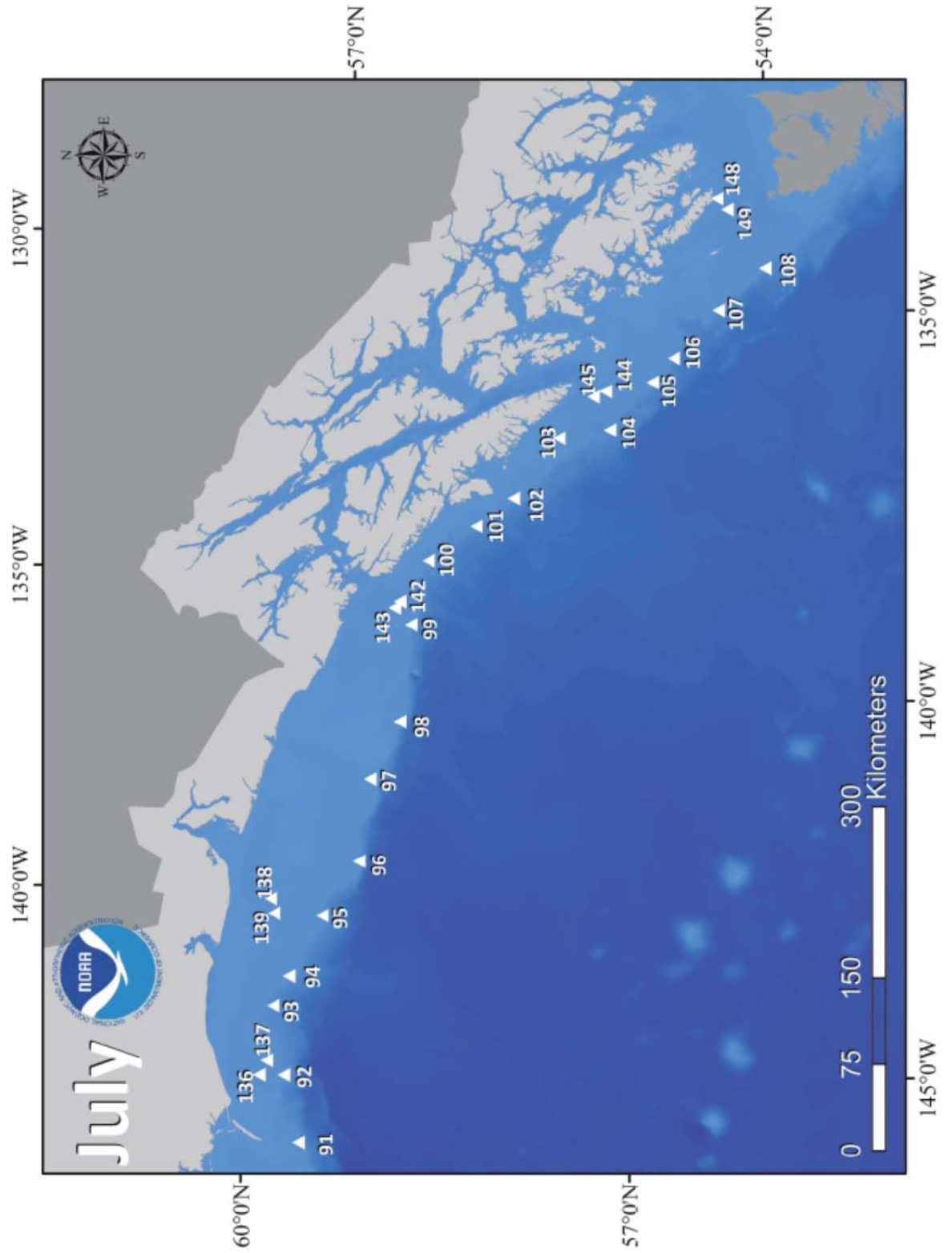



Sablefish Tag Program
NOAA/NMFS Auke Bay Laboratories
17109 Pt. Lena Loop Rd.
Juneau, AK 99801

May/June 2015						
Sun	Mon	Tues	Wed	Thurs	Fri	Sat
 31 May Station 2 58°37.2'x176°38.5' 58°33.2'x176°53.9'						30 May Station 1 58°46.7'x177°34.5' 58°54.4'x177°50.7'
7 Station 15 56°08.8'x170°43.9' 56°08.5'x170°42.9'	1 Station 4 58°29.8'x175°40.2' 58°30.2'x175°57.3'	2 Station 6 58°20.0'x174°18.7' 58°23.1'x174°27.2'	3 Station 8 57°37.7'x174°09.9' 57°46.2'x174°18.4'	4 Station 10 56°49.7'x173°22.7' 56°58.6'x173°28.9'	5 Station 12 56°37.6'x172°21.2' 56°29.1'x172°31.2'	6 Station 13 56°28.0'x171°27.1' 56°27.3'x171°43.8'
14 Station 34 53°18.3'x168°53.9' 53°18.1'x168°54.2'	8 Station 17 56°02.3'x169°37.1' 55°59.2'x169°50.2'	9 Station 18 56°14.6'x169°10.3' 56°07.6'x169°23.0'	10 Station 20 55°48.5'x168°48.1' 55°54.6'x169°00.9'	11 Station 22 55°27.5'x168°59.9' 55°23.5'x168°15.8'	12 Station 32 53°46.3'x167°19.8' 53°41.6'x167°30.3'	13 Station 33 53°36.7'x168°17.9' 53°37.8'x168°02.7'
21 Station 67 53°58.2'x163°15.8' 53°51.8'x163°24.1'	15 In Port Dutch Harbor	16 Station 62 52°39.6'x169°00.2' 52°34.0'x169°10.2'	17 Station 63 52°57.9'x168°08.1' 52°51.3'x168°12.6'	18 Station 64 53°11.5'x166°51.3' 53°03.0'x166°56.0'	19 Station 65 53°35.0'x165°41.1' 53°26.7'x165°46.8'	20 Station 66 53°44.2'x164°28.1' 53°37.6'x164°39.3'
28 Station 74 55°14.4'x156°40.4' 55°06.6'x156°44.6'	22 Station 68 54°08.0'x161°38.2' 54°03.5'x161°51.5'	23 Station 69 54°18.9'x161°03.6' 54°12.6'x161°13.2'	24 Station 70 54°21.9'x160°14.1' 54°13.9'x160°18.8'	25 Station 71 54°30.6'x159°15.3' 54°22.3'x159°25.9'	26 Station 72 54°38.0'x158°34.8' 54°29.5'x158°42.2'	27 Station 73 54°51.1'x157°44.2' 54°43.3'x157°51.6'
	29 Station 75 55°38.5'x155°50.9' 55°30.0'x155°50.0'	30 Travel to Ketchikan				



July 2015						
Sun	Mon	Tues	Wed	Thurs	Fri	Sat
			1 Travel to Ketchikan	2 Travel to Ketchikan	3 Travel to Ketchikan	4 In Port Ketchikan
5 Station 148 54°38.9'x 132°50.3' 54°36.0'x 132°56.0' Station 149 54°35.9'x 133°01.4' 54°35.8'x 133°09.4'	6 Station 108 54°27.0'x 133°55.8' 54°32.2'x 134°04.1'	7 Station 107 54°54.0'x 134°17.2' 55°00.8'x 134°27.1'	8 Station 106 55°20.8'x 134°44.1' 55°23.3'x 134°56.8'	9 Station 105 55°33.5'x 134°58.0' 55°37.5'x 135°07.8'	10 Station 144 55°55.8'x 134°54.1' 56°00.0'x 134°54.8' Station 145 56°02.0'x 134°55.6' 56°05.6'x 135°01.7'	11 Station 104 55°59.0'x 135°26.2' 56°04.8'x 135°38.0'
12 Station 103 56°23.0'x 135°20.9' 56°22.1'x 135°36.8'	13 Station 102 56°51.1'x 135°59.8' 56°57.4'x 136°06.2'	14 Station 101 57°11.3'x 136°14.1' 57°14.9'x 136°24.7'	15 Station 100 57°37.1'x 136°32.2' 57°38.5'x 136°44.1'	16 Station 142 57°54.9'x 137°00.6' 57°55.2'x 137°08.4' Station 143 57°58.0'x 137°04.6' 57°58.2'x 137°12.6'	17 Station 99 57°52.7'x 137°22.7' 57°53.4'x 137°37.4'	18 Station 98 58°08.4'x 138°43.8' 58°10.3'x 138°55.9'
19 Station 97 58°28.1'x 139°28.0' 58°24.9'x 139°42.5'	20 In Port Yakutat	21 Research experiment near Yakutat	22 Research experiment near Yakutat	23 In Port Yakutat	24 Station 138 59°25.0'x 140°56.2' 59°25.6'x 141°04.6' Station 139 59°24.8'x 141°10.1' 59°21.5'x 141°14.9'	25 Station 96 58°41.1'x 140°38.4' 58°43.4'x 140°52.4'
26 Station 95 59°03.0'x 141°20.6' 59°02.9'x 141°38.1'	27 Station 94 59°23.3'x 142°09.8' 59°28.1'x 142°24.3'	28 Station 93 59°33.0'x 142°33.8' 59°34.8'x 142°47.4'	29 Station 136 59°44.8'x 143°35.2' 59°45.7'x 143°42.3' Station 137 59°40.4'x 143°22.9' 59°43.1'x 143°29.8'	30 Station 92 59°33.3'x 143°39.1' 59°35.1'x 143°57.1'	31 Station 91 59°31.3'x 144°42.7' 59°26.8'x 144°57.5'	



August 2015						
Sun	Mon	Tues	Wed	Thurs	Fri	Sat
 Station 89 59°15.8'x 146°51.1' 59°09.7'x 147°04.5'	3 In Port Cordova	4 In Port Cordova	5 Station 134 59°36.9'x 146°58.0' 59°33.3'x 147°03.2' Station 135 59°30.9'x 147°09.2' 59°27.1'x 147°09.0'	6 Station 88 59°09.3'x 147°36.2' 58°59.6'x 147°37.8'	7 Station 87 59°07.6'x 148°39.0' 58°58.5'x 148°39.0'	1 Station 90 59°30.0'x 145°31.5' 59°30.2'x 145°49.7'
9 Station 130 58°43.6'x 149°11.8' 58°46.1'x 149°04.9' Station 131 58°48.1'x 149°02.9' 58°50.6'x 148°55.3'	10 Station 86 58°41.3'x 148°20.4' 58°32.5'x 148°19.0'	11 Station 85 58°17.6'x 148°37.0' 58°08.2'x 148°42.1'	12 Station 84 57°58.3'x 149°10.0' 57°50.9'x 149°20.0'	13 Station 128 58°00.0'x 149°50.5' 57°59.0'x 149°58.3' Station 129 58°05.0'x 149°54.5' 58°04.0'x 150°02.1'	14 Station 83 57°37.9'x 149°55.0' 57°28.0'x 149°59.0'	15 Station 82 57°24.1'x 150°34.4' 57°15.0'x 150°35.9'
16 In Port Kodiak	17 Station 81 57°07.1'x 151°13.3' 56°58.2'x 151°17.6'	18 Station 80 56°29.1'x 152°12.8' 56°21.1'x 152°21.0'	19 Station 79 56°18.2'x 153°04.6' 56°13.3'x 153°16.4'	20 Station 78 55°58.4'x 154°01.3' 55°49.9'x 154°01.9'	21 Station 77 56°02.5'x 154°34.0' 55°53.6'x 154°34.5'	22 Station 76 55°46.0'x 155°08.3' 55°37.9'x 155°15.7'
23 Station 122 56°11.2'x 155°57.8' 56°11.0'x 156°04.6' Station 123 56°13.9'x 156°07.8' 56°15.2'x 156°14.6'	24 Station 126 57°20.8'x 155°02.4' 57°21.0'x 155°10.2' Station 127 57°20.9'x 155°14.7' 57°19.6'x 155°22.9'	25 Station 124 56°59.3'x 155°03.8' 57°00.0'x 155°11.8' Station 125 57°00.1'x 155°18.2' 57°02.6'x 155°24.2'	26 Station 120 55°47.3'x 156°04.6' 55°45.8'x 156°11.9' Station 121 55°45.0'x 156°12.1' 55°43.8'x 156°20.0'	27 Travel to Dutch Harbor	28 Unload vessel Dutch Harbor	29

