

July 2, 2009

F/V *Alaskan Leader*
Cruise Report AL-08-01
Longline Survey of the Gulf of Alaska and Eastern Aleutian Islands
June 3-September 1, 2008

Prepared by

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On September 1, 2008, the Alaska Fisheries Science Center (AFSC) completed the thirtieth annual longline survey of Alaska sablefish (*Anoplopoma fimbria*) resources of the upper continental slope (Figure 1). This survey was designed to continue the time series (1979-94) of the Gulf of Alaska portion of the Japan-U.S. cooperative longline survey that was discontinued after 1994. The National Marine Fisheries Service (NMFS) has surveyed the Gulf of Alaska annually since 1987, the eastern Aleutian Islands biennially since 1996, and the eastern Bering Sea biennially since 1997. The Gulf of Alaska and eastern Aleutian Islands were sampled in 2008.

OBJECTIVES

1. Determine the relative abundance and size composition of the most commercially important species: sablefish, shortspine thornyhead (*Sebastolobus alascanus*), Greenland turbot (*Reinhardtius hippoglossoides*) and rougheye and shortraker rockfishes (*Sebastes aleutianus* and *S. borealis*).
2. Determine the relative abundance and size composition of other groundfish species caught during the survey: Pacific cod (*Gadus macrocephalus*), arrowtooth flounder (*Atheresthes stomias*), grenadiers (Macrouridae), and Greenland turbot .
3. Tag and release sablefish, shortspine thornyhead, and Greenland turbot throughout the cruise to determine migration patterns.
4. Implant Greenland turbot and ling cod (*Ophiodon elongates*) with electronic tags that record water temperature, depth, and time.
5. Collect sablefish otoliths to study the age composition of the population.
6. Conduct auto/hand bait gear experiment.

VESSEL AND GEAR

Survey operations were conducted using the F/V *Alaskan Leader*, a chartered U.S. longline vessel. The 46 m (150 ft) long vessel carried standard longline hauling gear and was equipped with radios, radars, GPS receivers, a processing line, three sets of plate freezers, and refrigerated holds. Vessel personnel consisted of a captain, an engineer, a cook, a quality-control technician, two contract biologists, six fishermen and five processors.

Gear configuration was unchanged from that of the 1988-2007 surveys. Units of gear (skates) were 100 m (55 fm) long and contained 45 size 13/0 Mustad¹ circle hooks. Hooks were attached to 38 cm (15 in) gangions that were secured to beackets tied into the groundline at 2 m (6.5 ft) intervals. Five meters (16 ft) of groundline were left bare at each end. Gangions were constructed of medium lay #60 thread nylon, becket material was medium lay #72 thread nylon, and groundline was medium lay 9.5 mm (3/8 in) diameter nylon.

A set of gear consisted of a flag and buoy array at each end followed sequentially by varying lengths by depth of 9.5 mm diameter nylon buoyline, a 92 m (50 fm) section of 9.5 mm polypropylene floating line, a 16 kg (35 lb) piece of chain (to dampen the effect of wave surge on the buoyline), 92 m of 9.5 mm nylon line, a 27 kg (60 lb) halibut anchor, and 366 m (200 fm) of 9.5 mm nylon line. The groundline was weighted with 3.2 kg (7 lb) lead balls at the end of each skate. Hooks were hand baited with chopped squid (*Illex*) at a rate of about 5.7 kg (12.5 lb) per 100 hooks. Squid heads and tentacles were not used for bait.

Total groundline set each day was 16 km (8.6 nmi) long and contained 160 skates and 7,200 hooks except in the eastern Bering Sea where 180 skates with 8,100 hooks are set. Two eighty-skate groundlines laid end to end were set at each station along the upper continental slope. A single groundline of eighty skates was set at each station in the gullies except Amatuli Gully station 87 that consists of 160 skates.

OPERATIONS

The charter began on June 3 at Unalaska, Alaska, and ended on September 1 at Unalaska. The charter period was divided into seven legs. During leg 1, the stations along the upper continental slope of the eastern Aleutian Islands were sampled. During leg 2 stations in the Gulf of Alaska were sampled near the western end of Umnak Island and extending eastward to Sand Point. Leg 3 began near Dixon Entrance and continued north and westward to Yakutat. During leg 4 the hook-baiting experiment was conducted in the Yakutat vicinity. During leg 5, the area between Yakutat and Cordova was sampled, and

¹ Citation of the above brand name does not constitute U.S. government endorsement.

during leg 6 the area from Cordova to Kodiak was sampled. During leg 7, the area from Kodiak to Sandpoint was sampled.

From 1988 to 1990 the survey period was from June 26 to September 12. The survey periods in 1991 through 1994 were 2-1/2 weeks later than in 1988 through 1990. The 1991-1994 surveys were delayed to avoid the commercial fishery that started 45 days later than in 1988 through 1990. Starting in 1995, the survey period was moved back to near the 1988-1990 time periods because of the extensive increase in length of the fishing season resulting from the implementation of the Individual Fishing Quota (IFQ) system in the sablefish and Pacific halibut longline fisheries. Beginning in 1998 the order in which the stations were sampled was changed to avoid conflicting with an early July rockfish fishery in the central Gulf of Alaska. Instead of continuing to sample in an easterly direction from Sand Point to Dixon Entrance the survey vessel transited to Dixon Entrance during early July and resumed sampling in a westerly direction going from Dixon Entrance to Sand Point.

Survey Operations

A total of 14 stations along the upper continental slope of the eastern Aluetian Islands and 45 stations along the upper continental slope of the Gulf of Alaska were sampled at a rate of one station per day (Figure 1). Surveyed depths ranged from approximately 200 to 1,000 m, although at some stations, depths less than 150 m or more than 1,000 m were sampled (Table 1). In addition, twenty-seven stations were sampled in gullies at the rate of one to two stations per day. The sampled gullies were Shelikof Trough, Amatuli Gully, W-grounds, Yakutat Valley, Spencer Gully, Ommaney Trench, and Dixon Entrance. One station (42) was sampled on the continental shelf off Baranof Island.

The gear was set from shallow to deep and was retrieved in the same order, except on occasions when groundlines parted or sea conditions dictated that it be pulled from the opposite direction. Setting began about 0630 hours Alaska Daylight Time. Retrieval began about 0930 hours and was completed by about 1930 hours.

Data Collection

Catch data were recorded on a hand-held electronic data logger. During gear retrieval a scientist recorded the species of each hooked fish, the condition of each unoccupied hook (absent, broken, or tangled), and whether bait remained on the hook. Time of day was recorded constantly from an internal clock; and depth was entered when the first and last skates came aboard at the beginning of each fifth skate, and when crossing into a new depth interval (0-100 m, 101-200 m, 201-300 m, 301-400 m, 401-600 m, 601-800 m, 801-1,000 m and 1,001-1,200 m).

Length frequency data were collected with a bar code based measuring board and a bar code reader/data storage device. Length was measured by depth interval for sablefish, Pacific cod, grenadiers, arrowtooth flounder, rockfish, and thornyheads. Lengths of

sablefish and Pacific cod also were recorded by sex. Pacific halibut were counted and released at the rail without measuring. Catch and length frequency data were transferred to a computer and electronic backup media twice a day. As in the previous surveys, the charter vessel was allowed to retain most of the catch once the scientific data were recorded.

Hook Baiting Experiment

A gear experiment was conducted near Yakutat July 25-26 to test the differences in catching efficiencies between auto-bait gear and standard hand-baited survey gear. Auto-bait machines have increased in popularity among the fleet in Alaska and are now commonly used by many vessels as the preferred baiting method. With the increase in vessels using auto-bait gear, experienced hand-bait vessels may be more difficult to find to conduct surveys. Additionally, auto-bait machines use a different gear than what is currently used on the survey. The groundline is typically different, gangions are different lengths, swivels are used on auto-bait gear, and hooks are straight rather than offset. Conducting the survey using auto-bait gear may sacrifice the time series without statistical calibration studies whereas maintaining hand-baiting may become more difficult as more vessels switch to auto-bait gear. To ensure the future of the survey time series, we plan to conduct a series of experiments which will test the fishing effectiveness of auto-bait gear side-by-side with hand-bait gear.

In 2008, two sets were made daily for a total of two stations using the *F/V Alaskan Leader*. Each day, the gear used during the first set consisted of standard survey gear that was hand-baited. For the second set, autoline gear was used that was baited and set using a Mustad auto-baiter system. Chopped squid was used as bait for both gear types. Bait used on the autoline gear was slightly smaller (1-1.75 in) than the squid (1.5-2 in) used on the survey gear and included the head and legs because it was fed through an auto-baiting machine. Seven pound lead balls were attached to each skate for the survey gear but no additional weight was attached to the autoline gear. Hooks and hook attachments were identical to what was done in 2007 for both gear types. However, in this experiment hook spacing and the total number of hooks set per gear type were different. The hook spacing used for survey gear was 2m, whereas spacing on the autoline gear was 1.2m. Survey gear consisted of 80 skates (3,600 hooks) per station, whereas 125 skates (6,300 hooks) were used in autoline gear stations.

Preliminary results indicate standard survey gear outfished auto-bait gear. Sablefish catch rates were lower on autoline gear than standard survey gear on all sets. Giant grenadier catches, however, were variable between gear types. These results indicate the potential of different catching efficiencies between the two gear types. To better understand differences in catch rates further studies will likely be done during future surveys to test the effects of hook size, gangion length, gangion swivels, and differences in groundline.

RESULTS

One hundred fifty-two longline hauls were completed (Table 1). Sablefish was the most frequently caught species, followed by giant grenadiers, shortspine thornyhead, arrowtooth flounder, and other species (Table 2). A total of 77,823 sablefish, with an estimated total round weight of 254,381 kg (560,814 lb), was taken during the survey (Table 3). The highest total sablefish catch was observed at station 73 in the central Gulf of Alaska (Table 3). Station 99 in eastern Gulf of Alaska had the largest average length sablefish (Table 3).

A total of 3,168 sablefish, and 505 shortspine thornyhead were tagged and released during the survey. Electronic tags were implanted in 31 Greenland turbot and 49 lingcod. Length-weight data and otoliths were collected from 2,306 sablefish.

Killer whales depredating on the catch occurred at 3 stations in the eastern Aleutian Islands and 2 stations in the western Gulf. Whale depredation at stations 35, 37, 61, 63, and 64, was extensive enough to preclude their use in the survey analysis.

SCIENTIFIC PERSONNEL

Leg I (June 3 - June 18)
 Larry Haaga, RACE
 Jason Wright, Contract Biologist
 Ken Orwig, Contract Biologist

Leg II (June 18- July 3)
 Dave Csepp, ABL
 Jason Wright, Contract Biologist
 Ken Orwig, Contract Biologist

Leg III (July 8 - July 24)
 John Karinen, ABL
 Doris Alcorn, ABL
 Jason Wright, Contract Biologist
 Ken Orwig, Contract Biologist

Leg IV (July 24 - July 27)
 Chris Lunsford, ABL
 Dana Hanselman, ABL
 Jason Wright, Contract Biologist
 Ken Orwig, Contract Biologist

Leg V (July 27 - August 7)
Kalei Shotwell, ABL
Cindy Tribuzio, ABL
Jason Wright, Contract Biologist
Ken Orwig, Contract Biologist

Leg VI (August 8- August 20)
Nancy Maloney, ABL
Jason Wright, Contract Biologist
Ken Orwig, Contract Biologist

Leg VII (August 20 - September 1)
Larry Haaga, Field Party Chief, RACE
Jason Wright, Contract Biologist
Ken Orwig, Contract Biologist

ABL - Auke Bay Laboratory

RACE - Resource Assessment and Conservation Engineering Division

For further information contact either

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Table 1.--Haul number (set), pre-assigned station number, starting and ending positions and associated depths for the 2008 NMFS longline survey of the Aleutian Islands region and Gulf of Alaska, June 3 - September 1, 2008.

Haul Number	Station Number	Start Latitude (ddmm.m)	Start Longitude (dddmm.m)	End Latitude (ddmm.m)	End Longitude (dddmm.m)	Start Depth (m)	End Depth (m)
Aleutian Islands Region							
1	35	5301.70	17006.03	5301.80	17006.38	174	175
2	35	5303.30	17011.43	5305.20	17016.14	175	532
3	37	5216.80	17329.56	5220.30	17329.57	142	606
4	37	5221.10	17329.87	5224.50	17331.70	625	741
5	38	5215.20	17450.75	5218.70	17447.06	183	677
6	38	5219.20	17446.23	5220.50	17540.55	496	777
7	39	5207.90	17534.08	5208.80	17539.39	109	509
8	39	5209.00	17540.13	5210.50	17545.65	493	787
9	40	5158.20	17627.17	5201.80	17625.92	106	550
10	40	5202.20	17623.68	5204.00	17618.84	565	845
11	54	5145.90	17809.78	5144.70	17815.42	90	487
12	54	5143.80	17823.39	5144.20	17817.31	482	522
13	42	5146.60	17858.10	5143.50	17855.21	174	467
14	42	5139.90	17851.43	5143.20	17854.31	487	696
15	53	5124.40	17837.09	5121.30	17832.72	168	490
16	53	5122.30	17826.07	5121.10	17831.88	519	825
17	55	5135.40	17737.63	5132.80	17742.31	203	509
18	55	5132.80	17743.21	5131.60	17748.57	590	922
19	57	5144.00	17559.91	5139.50	17600.42	183	390
20	57	5139.10	17600.90	5135.70	17602.40	409	748
21	58	5151.60	17507.86	5147.60	17508.01	167	309
22	58	5146.40	17506.31	5142.40	17506.90	377	745
23	59	5152.70	17420.06	5149.40	17424.62	116	383
24	59	5149.30	17425.51	5146.40	17431.05	290	990
25	60	5155.00	17329.94	5152.50	17336.22	122	364
26	60	5152.30	17336.78	5151.70	17343.92	471	700
27	61	5226.40	17018.83	5223.90	17024.58	245	522
28	61	5220.20	17027.85	5224.30	17024.92	519	820
Gulf of Alaska							
29	64	5311.70	16651.66	5307.30	16653.39	216	320
30	64	5307.00	16654.23	5303.40	16657.76	319	871
31	62	5239.30	16859.66	5236.70	16906.08	200	527
32	62	5236.90	16907.08	5233.80	16912.65	296	671
33	63	5257.90	16808.03	5254.60	16812.57	109	351
34	63	5259.80	16813.14	5251.00	16815.04	149	525
35	65	5335.00	16540.59	5331.10	16543.13	122	258
36	65	5330.40	16544.04	5326.90	16547.29	309	438
37	66	5344.10	16428.15	5341.00	16433.19	138	290
38	66	5340.80	16433.70	5338.20	16438.66	306	561
39	67	5357.80	16316.29	5353.80	16320.44	132	580
40	67	5353.60	16321.42	5351.20	16327.93	354	780

Table 1. Continued

Haul Number	Station Number	Start Latitude (ddmm.m)	Start Longitude (dddmm.m)	End Latitude (ddmm.m)	End Longitude (dddmm.m)	Start Depth (m)	End Depth (m)
41	68	5407.70	16138.72	5405.00	16144.62	136	358
42	68	5405.20	16146.07	5403.40	16152.85	559	942
43	69	5419.00	16103.74	5415.60	16109.10	164	396
44	69	5415.30	16110.17	5412.40	16115.31	438	825
45	70	5421.90	16014.95	5417.90	16018.13	142	316
46	70	5417.70	16018.55	5413.70	16021.09	309	603
47	71	5430.80	15915.35	5426.60	15919.21	135	274
48	71	5426.70	15919.71	5423.30	15924.72	268	525
49	72	5437.90	15835.24	5437.90	15838.76	125	361
50	72	5433.80	15839.54	5429.90	15843.43	328	813
51	73	5451.20	15744.67	5447.60	15749.42	174	332
52	73	5447.40	15749.59	5443.30	15752.23	345	520
53	74	5514.10	15641.46	5510.10	15644.95	177	306
54	74	5510.10	15645.37	5505.70	15646.49	277	709
55	75	5538.30	15550.92	5533.90	15551.65	148	209
56	75	5533.60	15551.76	5529.90	15548.46	213	216
57	148	5438.70	13250.75	5435.70	13256.54	150	382
58	149	5435.80	13301.66	5436.10	13309.25	394	417
59	108	5427.90	13355.47	5429.80	13401.25	258	567
60	108	5429.80	13400.63	5433.60	13403.46	348	800
61	107	5459.00	13417.12	5457.70	13421.16	222	670
62	107	5457.90	13421.97	5501.40	13426.35	458	838
63	106	5520.90	13444.29	5523.40	13450.89	372	675
64	106	5523.80	13450.14	5523.40	13457.66	498	835
65	105	5533.40	13458.12	5534.60	13503.00	246	562
66	105	5535.00	13503.39	5537.70	13507.80	500	905
67	144	5555.90	13454.19	5600.70	13454.83	202	367
68	145	5602.10	13455.95	5605.50	13501.29	360	391
69	104	5559.00	13526.31	5601.70	13531.03	343	606
70	104	5601.70	13532.66	5605.20	13537.89	641	887
71	103	5623.00	13520.84	5623.00	13529.33	153	189
72	103	5622.80	13529.89	5622.00	13538.06	189	319
73	102	5651.10	13559.93	5654.10	13605.71	224	696
74	102	5654.30	13606.09	5658.50	13658.47	662	935
75	101	5711.30	13614.29	5712.80	13620.24	220	605
76	101	5713.00	13620.75	5717.10	13623.44	632	1077
77	142	5754.90	13700.00	5755.20	13708.57	393	444
78	143	5758.00	13704.15	5758.10	13704.35	243	422
79	100	5737.20	13632.40	5736.90	13639.73	208	805
80	100	5737.00	13640.07	5739.70	13645.91	680	951
81	99	5752.70	13733.97	5753.00	13730.98	212	700
82	99	5753.20	13730.76	5753.70	13738.73	638	900
83	98	5808.50	13843.98	5809.20	13851.50	219	822

Table 1. Continued

Haul Number	Station Number	Start Latitude (ddmm.m)	Start Longitude (dddmm.m)	End Latitude (ddmm.m)	End Longitude (dddmm.m)	Start Depth (m)	End Depth (m)
84	98	5809.40	13851.82	5810.70	13858.87	574	903
85	97	5828.10	13928.30	5827.40	13937.22	191	510
86	97	5827.60	13937.23	5825.30	13943.69	439	1100
91	138	5925.10	14056.35	5925.60	14105.57	205	298
92	139	5924.70	14110.07	5921.10	14115.60	319	327
93	96	5843.80	14048.75	5845.60	14056.82	248	750
94	96	5843.90	14053.95	5841.60	14048.19	539	767
95	95	5902.80	14120.75	5902.70	14129.97	330	606
96	95	5903.00	14129.60	5903.00	14138.55	546	900
97	94	5923.30	14209.80	5925.40	14217.25	229	453
98	94	5925.60	14217.31	5929.20	14223.00	401	890
99	93	5933.00	14233.85	5935.40	14240.98	129	601
100	93	5935.50	14240.98	5934.40	14241.88	567	644
101	137	5940.10	14324.28	5943.30	14330.65	293	315
102	136	5944.60	14334.88	5945.90	14343.55	153	298
103	92	5933.20	14340.02	5933.90	14348.87	225	800
104	92	5934.00	14348.74	5935.50	14356.98	503	850
105	91	5931.00	14442.64	5929.00	14450.25	186	498
106	91	5929.20	14450.30	5929.20	14457.75	470	810
107	90	5930.10	14532.82	5931.20	14541.69	158	800
108	90	5931.40	14541.29	5931.00	14550.21	425	720
109	89	5916.00	14650.83	5913.30	14658.10	200	555
110	89	5913.50	14658.59	5910.30	14704.83	458	810
111	134	5936.70	14659.20	5932.90	14703.81	211	218
112	135	5931.40	14709.01	5926.90	14709.09	217	226
113	88	5909.70	14736.97	5905.70	14736.93	215	498
114	88	5905.00	14737.49	5900.50	14737.64	510	900
115	87	5907.90	14838.92	5903.50	14839.02	151	189
116	87	5902.40	14838.91	5858.10	14839.07	227	247
117	132	5904.70	14924.78	5902.10	14902.08	184	225
118	133	5856.80	14934.05	5855.00	14939.47	236	241
119	130	5846.30	14903.90	5844.10	14911.75	185	218
120	131	5850.90	14854.42	5848.40	14901.95	230	260
121	86	5841.50	14819.78	5836.60	14820.08	268	493
122	86	5836.50	14820.25	5831.70	14820.37	496	950
123	85	5817.70	14836.83	5813.00	14839.36	224	539
124	85	5812.30	14839.99	5808.50	14842.27	515	838
125	84	5758.50	14909.72	5754.70	14915.26	163	496
126	84	5754.70	14915.69	5751.00	14921.17	490	903
127	83	5738.30	14954.96	5733.60	14956.86	375	559
128	83	5733.80	14957.37	5929.20	14959.31	553	900
129	82	5724.10	15034.40	5719.50	15035.44	209	508
130	82	5719.60	15035.94	5715.00	15035.88	496	750

Table 1. Continued

Haul Number	Station Number	Start	Start	End	End	Start	End
		Latitude (ddmm.m)	Longitude (dddmm.m)	Latitude (ddmm.m)	Longitude (dddmm.m)	Depth (m)	Depth (m)
131	128	5758.80	14959.33	5759.80	14950.46	222	267
132	129	5805.00	14954.54	5803.90	15002.46	292	304
133	81	5707.10	15113.23	5702.70	15116.23	250	558
134	81	5702.70	15116.78	5658.20	15116.78	560	835
135	80	5629.10	15212.80	5625.20	15217.88	134	536
136	80	5625.20	15218.32	5620.60	15221.26	470	900
137	79	5618.30	15304.59	5615.70	15311.81	238	574
138	79	5615.90	15312.11	5612.60	15317.84	520	750
139	78	5558.90	15401.45	5545.20	15401.46	265	581
140	78	5554.20	15402.18	5550.00	15403.96	584	1000
141	77	5602.70	15433.92	5558.20	15433.94	231	550
142	77	5558.20	15434.64	5553.70	15434.56	546	883
143	76	5546.10	15508.17	5541.90	15510.50	158	317
144	76	5541.70	13510.67	5538.00	15515.19	325	585
145	126	5721.00	15502.30	5721.00	15510.96	234	240
146	127	5720.90	15515.00	5719.50	15523.58	245	256
147	124	5659.60	15504.37	5659.60	15512.80	179	234
148	125	5700.10	15518.32	5702.90	15524.66	251	262
149	122	5611.20	15557.82	5611.00	15605.95	193	240
150	123	5613.90	15607.90	5615.70	15615.90	245	265
151	120	5547.30	15603.63	5545.70	15612.49	229	238
152	121	5545.10	15612.25	5543.90	15620.10	239	251

Table 2. Catch in number by species for the 2008 NMFS longline survey of the Aleutian Islands region and the Gulf of Alaska, June 3 - September 1, 2008. SF = sablefish, PC = Pacific cod, GR = giant grenadiers, PH = Pacific halibut, ATF = arrowtooth flounder, GT = Greenland turbot, RF = rougheye and shorttraker rockfish, ST = thornyheads, SK = skate, OS = other species.

Station	SF	PC	GR	PH	ATF	GT	RF	ST	SK	OS
Aleutian Islands Region										
35*										
37*	253	63	352	46	78	68	0	3	77	35
38	781	176	801	55	206	62	64	458	43	75
39	231	286	1446	121	178	23	6	104	69	179
40	391	165	1208	90	97	19	25	113	90	170
42	224	433	719	82	64	1	65	12	350	325
53	624	86	1244	34	68	16	92	253	96	249
54	297	857	199	181	570	20	377	56	179	553
55	60	227	1159	120	98	2	106	138	97	206
57	152	115	1236	49	57	4	42	43	64	161
58	191	233	1187	92	111	1	146	186	141	52
59	172	628	1260	224	173	0	369	51	124	382
60	340	783	1242	128	40	0	812	21	42	240
61*	70	0	3	36	11	0	2	7	50	138
Gulf of Alaska										
62	759	64	1616	22	90	0	649	359	5	51
63*	31	431	2	129	33	0	76	110	51	132
64*	549	1	186	96	184	0	30	92	26	24
65	1011	206	1748	135	123	0	39	284	64	126
66	1771	106	1519	56	286	2	22	238	21	100
67	741	488	1462	338	120	0	178	71	35	205
68	1042	198	961	412	150	0	291	215	18	41
69	1233	13	1999	123	107	0	18	248	6	37
70	1080	407	750	230	105	0	41	146	37	293
71	940	431	1187	213	116	0	41	84	57	104
72	1818	171	1498	86	157	0	23	230	16	66
73	2199	38	246	86	180	0	57	188	69	63
74	1862	11	418	26	165	0	58	664	35	98
75	1134	340	0	383	404	0	4	1	69	99
76	1113	77	631	159	335	0	211	331	123	370
77	1484	0	1963	10	90	0	126	323	28	222
78	1460	0	1112	13	90	0	210	445	25	933
79	1987	0	1153	92	173	0	89	376	1	38
80	910	6	1473	225	131	0	227	292	2	71
81	1737	0	1196	86	193	0	36	213	5	331
82	1308	4	1226	31	88	0	58	180	5	105
83	1085	0	1847	8	31	0	25	240	3	217
84	1393	98	537	40	80	0	64	302	51	237
85	1545	1	448	10	270	0	158	370	17	127
86	378	0	1027	35	131	0	245	298	5	336
87	1096	26	0	83	112	0	8	97	62	89
88	809	6	773	42	70	0	163	355	26	206

Table 2.- Continued

Station	SF	PC	GR	PH	ATF	GT	RF	ST	SK	OS
89	1695	28	362	51	27	0	110	467	36	171
91	767	58	426	79	65	0	141	411	28	141
92	1,422	0	1,412	0	10	0	55	300	4	29
93	1,705	0	566	95	19	0	49	803	17	67
94	620	0	237	53	142	0	613	378	44	67
95	961	0	365	15	20	0	712	598	21	121
96	927	0	736	21	40	0	454	386	23	93
97	1,025	0	353	11	74	0	839	154	14	220
98	1,261	0	606	5	22	0	361	109	4	79
99	1,389	0	463	7	17	0	235	245	9	139
100	614	4	483	1	48	0	105	284	0	135
101	1,080	3	487	14	114	0	66	265	7	134
102	978	0	283	3	107	0	80	394	10	143
103	344	120	0	262	90	0	2	35	33	840
104	1,297	0	394	3	12	0	213	584	16	156
105	1,374	16	247	35	101	0	128	447	14	305
106	1,487	0	165	4	78	0	542	345	8	124
107	1,178	0	304	22	56	0	547	238	13	178
108	1,189	0	117	14	95	0	760	178	26	257
120	752	156	0	132	155	0	0	3	258	37
121	836	17	1	103	296	0	1	30	201	100
122	802	425	0	90	271	0	0	0	179	51
123	864	163	0	60	266	0	1	1	403	27
124	253	299	0	123	498	0	1	1	333	57
125	489	95	0	202	505	0	2	1	377	23
126	363	157	0	123	233	0	0	0	566	47
127	537	189	0	242	119	0	1	0	604	37
128	1,383	26	0	111	147	0	2	31	27	42
129	1,219	0	0	70	147	0	0	96	65	22
130	1,331	35	0	29	30	0	1	70	19	36
131	1,396	3	0	38	63	0	31	251	51	69
132	359	46	0	25	49	0	0	38	72	57
133	696	2	0	20	41	0	5	53	42	50
134	1,037	1	0	5	37	0	8	39	50	454
135	550	8	0	20	21	0	13	47	28	880
136	320	7	0	96	23	0	71	68	33	218
137	565	0	0	38	4	0	136	106	35	35
138	414	0	0	50	85	0	112	145	73	62
139	894	0	0	61	27	0	59	68	88	22
142	1007	0	226	13	45	0	36	181	11	510
143	1220	0	86	38	83	0	53	148	22	144
144	202	7	0	63	129	0	320	300	25	76
Total	77,823	9,110	48,806	7,021	10,383	218	12,694	17,358	,6438	15,122

* Station catch was entirely or partially impacted by killer whale depredation

Table 3. – Mean length, round weight, mean dressed weight, number and estimated total round weight of sablefish by station, for the 2008 NMFS longline survey of the Eastern Aleutian Islands region and Gulf of Alaska, June 3 – September 1, 2008.

Station	Mean Length	Mean Round Weight(kg) ¹	Mean Dressed Weight(lbs) ²	Number of Sablefish	Est. Total Round Weight(kg) ³
Aleutian Islands Region					
35*	n/a	n/a	n/a	n/a	n/a
37*	61.0	2.4	3.3	253	606
38	66.4	3.2	4.4	781	2,483
39	66.0	3.1	4.3	231	718
40	66.6	3.3	4.6	391	1,285
42	70.3	3.8	5.3	224	855
53	67.4	3.4	4.7	624	2,094
54	73.6	4.4	6.2	297	1,315
55	66.5	3.3	4.5	60	195
57	61.6	2.5	3.5	152	377
58	62.2	2.6	3.6	191	493
59	66.0	3.2	4.4	172	546
60	71.2	4.0	5.6	340	1,360
61*	64.6	3.0	4.2	70	210
Gulf of Alaska					
62	63.8	2.8	3.9	759	2,146
63*	63.7	2.8	3.8	31	85
64*	55.2	1.7	2.4	549	932
65	59.9	2.3	3.1	1,011	2,284
66	59.0	2.2	3.0	1,771	3,836
67	63.9	2.9	4.0	741	2,152
68	68.3	3.5	4.9	1,042	3,656
69	62.9	2.8	3.9	1,233	3,452
70	60.7	2.4	3.4	1,080	2,611
71	61.1	2.4	3.4	940	2,276
72	64.8	3.0	4.2	1,818	5,433
73	61.4	2.5	3.5	2,199	5,460
74	65.8	3.1	4.3	1,862	5,795
75	61.8	2.6	3.6	1,134	2,907
76	64.7	3.0	4.1	1,113	3,284
77	67.6	3.4	4.7	1,484	5,045
78	69.1	3.7	5.1	1,460	5,349
79	68.9	3.6	5.0	1,987	7,155
80	70.1	3.8	5.3	910	3,451
81	67.6	3.4	4.7	1,737	5,898
82	66.9	3.3	4.5	1,308	4,255
83	69.6	3.8	5.2	1,085	4,064
84	68.8	3.6	5.0	1,393	5,006
85	69.0	3.7	5.1	1,545	5,637
86	68.8	3.6	5.0	378	1,348
87	62.9	2.7	3.7	1,096	2,936
88	68.6	3.6	4.9	809	2,868
89	70.3	3.9	5.4	1,695	6,560

Table 3. - Continued

Station	Mean Length	Mean Round Weight(kg) ¹	Mean Dressed Weight(lbs) ²	Number of Sablefish	Est. Total Round Weight(kg) ³
90	69.8	3.8	5.2	887	3,346
91	69.0	3.6	5.0	767	2,775
92	68.7	3.6	5.0	1,422	5,093
93	70.0	3.8	5.3	1,705	6,517
94	68.6	3.6	5.0	620	2,226
95	69.1	3.6	5.0	961	3,480
96	74.5	4.7	6.6	927	4,386
97	71.1	4.1	5.6	1,025	4,163
98	73.6	4.6	6.4	1,261	5,832
99	74.9	4.8	6.7	1,389	6,698
100	69.4	3.7	5.1	614	2,273
101	70.4	3.9	5.4	1,080	4,220
102	70.9	4.0	5.6	978	3,924
103	64.0	3.0	4.1	344	1,022
104	68.1	3.5	4.9	1,297	4,558
105	70.6	4.0	5.5	1,374	5,441
106	68.9	3.7	5.1	1,487	5,444
107	69.3	3.7	5.2	1,178	4,407
108	69.3	3.7	5.1	1,189	4,404
120	64.6	2.9	4.0	752	2,177
121	65.4	3.0	4.2	836	2,512
122	61.1	2.4	3.3	802	1,922
123	62.4	2.6	3.6	864	2,234
124	62.7	2.7	3.7	253	672
125	59.5	2.2	3.1	489	1,084
126	57.6	2.0	2.7	363	716
127	60.4	2.3	3.3	537	1,257
128	64.5	2.9	4.0	1,383	3,942
129	66.4	3.2	4.4	1,219	3,883
130	67.3	3.3	4.6	1,331	4,418
131	69.4	3.7	5.2	1,396	5,173
132	62.4	2.7	3.7	359	958
133	63.9	2.8	3.9	696	1,954
134	52.3	1.5	2.1	1,037	1,545
135	52.3	1.5	2.1	550	836
136	64.1	3.0	4.2	320	959
137	67.6	3.4	4.7	565	1,919
138	63.2	2.9	4.0	414	1,196
139	69.1	3.7	5.1	894	3,282
142	65.2	3.1	4.2	1,007	3,067
143	66.2	3.2	4.4	1,220	3,859

Table 3. - Continued

Station	Mean Length	Mean Round Weight(kg) ¹	Mean Dressed Weight(lbs) ²	Number of Sablefish	Est. Total Round Weight(kg) ³
144	69.9	3.8	5.3	202	766
145	65.6	3.2	4.4	798	2,546
148	63.4	2.8	3.8	326	896
149	62.8	2.6	3.7	749	1,981
Total				77,823	254,381

* Station catch was entirely or partially impacted by killer whale depredation

¹ Mean weight was estimated by applying a length-weight relationship to the length frequency distribution from each station.

² Mean dressed weight was estimated using a recovery rate of 0.6 of round weight in pounds.

³ Estimated total round weight is the product of mean round weight and the number of hooked sablefish that came to the surface including a small percentage that were lost during landing.

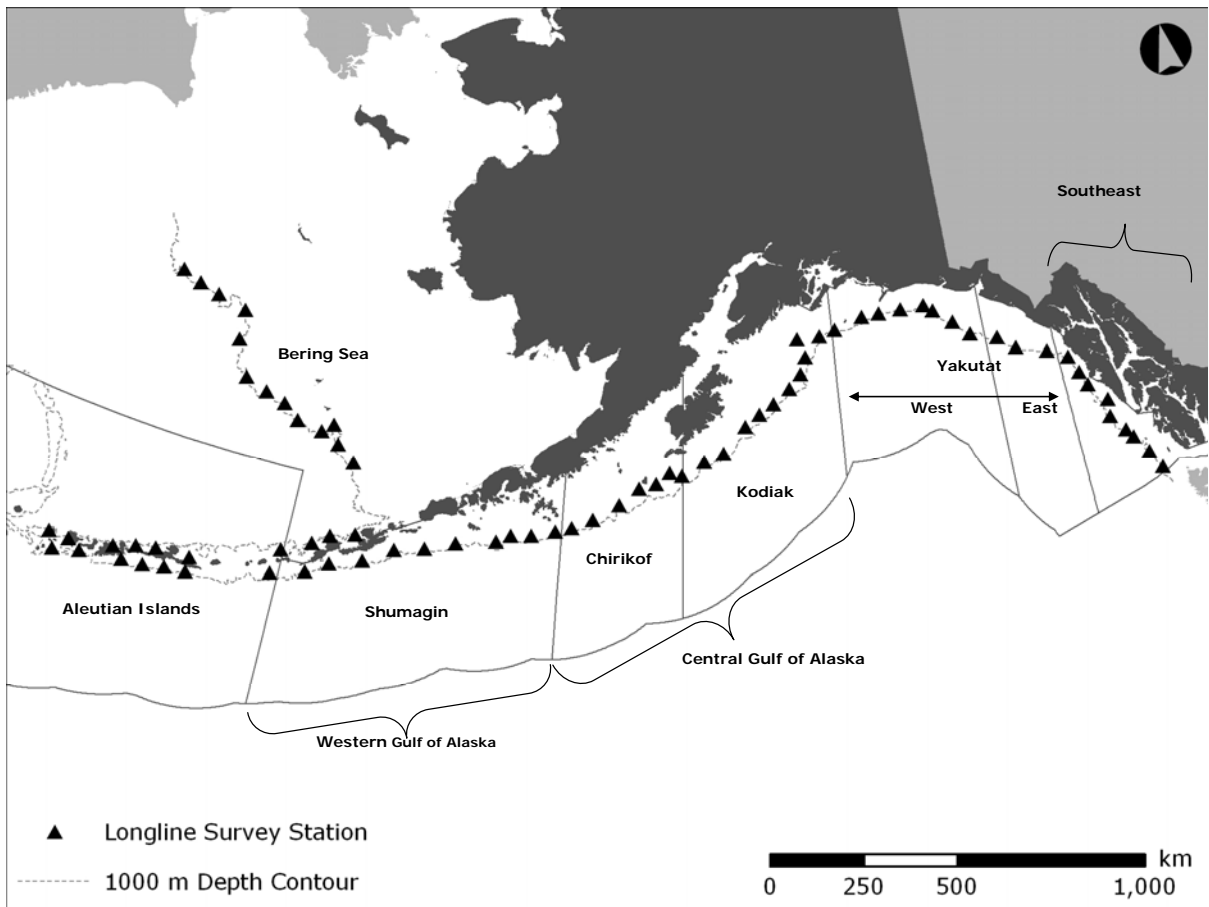


Figure 1. Map of NMFS longline survey station locations and corresponding management areas. Bering Sea stations are sampled in odd years; Aleutian Islands Region stations are sampled in even years; Gulf of Alaska stations sampled every year.