

Aleutian Islands trawl survey biomass summary

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The tables below represent summaries of survey data by species. For the western area, mean biomass estimates were derived from the 2002, 2004, and 2006 surveys to show the variability in proportions (Table 1) and in absolute tonnages (Table 2). Assuming these estimates hold over time and management actions to reduce Pacific cod and Atka mackerel fishing (closing these directed fisheries), then the projected values from the mean survey estimates indicate that a 20% increase in overall biomass would be achieved in about 20 years (Table 3).

Extending this for the central area, mean biomass estimates show a different ranking in proportions (Tables 4 and Table 5). As above, assuming these estimates hold over time and management actions to reduce Pacific cod and Atka mackerel fishing (here assuming the fishery will be reduced by 50% of the maximum permissible), then the projected values from the mean survey estimates indicate only about a 7% increase in overall biomass would be achieved in about 20 years (Table 6). Results for 542 with no fishing are proportionally a little bit higher compared to results seen for 543 (i.e., about 24% increase in 20 years).

For comparative purposes, biomass estimates for this period for the Eastern Aleutian Islands (area 541) are shown in Tables 7 and 8.

Western area only (543)

Table 1. Summer bottom-trawl survey estimates of groundfish biomass proportions by year and average for the Aleutian Islands region 543.

Groundfish species	2002	2004	2006	Average
Pacific ocean perch	29%	25%	48%	34%
Atka mackerel	36%	43%	17%	32%
Northern rockfish	19%	17%	17%	18%
Pacific cod	3%	1%	3%	3%
Arrowtooth flounder	2%	2%	2%	2%
Northern rock sole	1%	1%	2%	2%
Walleye pollock	2%	1%	1%	1%
Shortraker rockfish	1%	2%	0%	1%
Shortspine thornyhead	1%	1%	2%	1%
Other	6%	7%	7%	7%

Table 2. Summer bottom-trawl survey estimates of groundfish biomass (t) by year and average for the Aleutian Islands region 543.

Groundfish species	2002	2004	2006	Average
Pacific ocean perch	202,124	212,639	281,946	232,236
Atka mackerel	255,115	376,414	100,693	244,074
Northern rockfish	134,519	146,179	101,276	127,324
Pacific cod	23,802	9,637	19,734	17,724
Arrowtooth flounder	14,343	17,400	13,343	15,029
Northern rock sole	10,575	10,434	12,768	11,259
Walleye pollock	12,442	6,605	6,514	8,520
Shortraker rockfish	3,947	16,333	2,471	7,584
Shortspine thornyhead	8,246	12,002	11,116	10,454
Other	40,026	59,387	43,170	47,528
Total	705,139	867,029	593,030	721,733

Table 3. Average Pacific cod and Atka mackerel Aleutian Islands bottom-trawl survey biomass estimates projected from the BSAI-wide and Aleutian Islands-wide (respectively) models under no fishing. The other species groundfish biomass (kt) values are set equal to their averages. Data are from the 2002, 2004 and 2006 surveys for region 543.

Groundfish species	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Pacific ocean perch	232.2	232.2	232.2	232.2	232.2	232.2	232.2	232.2	232.2	232.2	232.2	232.2
Atka mackerel	244.1	222.9	240.5	259.3	279.1	298.1	316.7	332.7	343.9	352.3	358.7	362.2
Northern rockfish	127.3	127.3	127.3	127.3	127.3	127.3	127.3	127.3	127.3	127.3	127.3	127.3
Pacific cod	17.7	20.1	25.3	29.5	32.8	34.1	36.1	37.0	37.9	38.5	38.5	38.8
Arrowtooth flounder	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0
Northern rock sole	11.3	11.3	11.3	11.3	11.3	11.3	11.3	11.3	11.3	11.3	11.3	11.3
Walleye pollock	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5
Shortraker rockfish	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6
Shortspine thornyhead	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5
Other	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5	47.5
Total	721.7	702.9	725.7	748.7	771.8	792.1	812.7	829.6	841.7	850.7	857.2	861.0
Relative %	100%	97%	101%	104%	107%	110%	113%	115%	117%	118%	119%	119%

Central area only (542)

Table 4. Summer bottom-trawl survey estimates of groundfish biomass proportions by year and average for the Aleutian Islands region 542.

Groundfish species	2002	2004	2006	Average
Atka mackerel	43%	41%	39%	41%
Pacific ocean perch	19%	23%	24%	22%
Walleye pollock	15%	2%	3%	6%
Northern rockfish	5%	4%	10%	6%
giant grenadier	1%	9%	4%	5%
Pacific cod	3%	3%	3%	3%
northern rock sole	3%	3%	5%	4%
Kamchatka flounder	3%	3%	2%	2%
arrowtooth flounder	2%	3%	1%	2%
Other	6%	8%	8%	8%

Table 5. Summer bottom-trawl survey estimates of groundfish biomass (t) by year and average for the Aleutian Islands region 542.

Groundfish species	2002	2004	2006	Average
Atka mackerel	322,556	269,320	278,036	289,971
Pacific ocean perch	140,356	152,840	170,942	154,712
walleye pollock	108,244	11,627	18,482	46,118
northern rockfish	38,772	27,050	70,834	45,552
giant grenadier	7,818	57,304	29,672	31,598
Pacific cod	24,327	20,709	22,033	22,356
northern rock sole	22,935	22,343	37,159	27,479
Kamchatka flounder	20,088	19,255	12,263	17,202
arrowtooth flounder	12,950	18,426	8,312	13,230
Other	47,703	55,624	58,919	54,082
	745,747	654,496	706,650	702,298

Table 6. Average Pacific cod and Atka mackerel Aleutian Islands bottom-trawl survey biomass estimates projected from the BSAI-wide and Aleutian Islands-wide (respectively) models under fishing at half of maximum permissible rate. The other species groundfish biomass (kt) values are set equal to their averages. Data are from the 2002, 2004 and 2006 surveys for region 542.

Groundfish species	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Atka mackerel	290.0	264.8	264.0	269.6	280.1	292.0	304.6	314.9	321.3	325.2	326.9	326.2
Pacific ocean perch	154.7	154.7	154.7	154.7	154.7	154.7	154.7	154.7	154.7	154.7	154.7	154.7
Walleye pollock	46.1	46.1	46.1	46.1	46.1	46.1	46.1	46.1	46.1	46.1	46.1	46.1
Northern rockfish	45.6	45.6	45.6	45.6	45.6	45.6	45.6	45.6	45.6	45.6	45.6	45.6
Giant grenadier	31.6	31.6	31.6	31.6	31.6	31.6	31.6	31.6	31.6	31.6	31.6	31.6
Pacific cod	22.4	25.3	30.6	34.0	36.0	35.5	36.0	35.7	35.8	35.8	35.6	35.5
northern rock sole	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5
Kamchatka flounder	17.2	17.2	17.2	17.2	17.2	17.2	17.2	17.2	17.2	17.2	17.2	17.2
arrowtooth flounder	13.2	13.2	13.2	13.2	13.2	13.2	13.2	13.2	13.2	13.2	13.2	13.2
other	54.1	54.1	54.1	54.1	54.1	54.1	54.1	54.1	54.1	54.1	54.1	54.1
Total	702.3	680.1	684.5	693.6	706.0	717.4	730.5	740.6	747.1	750.9	752.5	751.7
Relative %	100%	97%	97%	99%	101%	102%	104%	105%	106%	107%	107%	107%

Eastern area (541)

Table 7. Summer bottom-trawl survey estimates of groundfish biomass proportions by year and average for the Aleutian Islands region 541.

Groundfish species	2002	2004	2006	Average
Atka mackerel	27%	28%	59%	38%
Pacific ocean perch	16%	16%	32%	21%
giant grenadier	29%	21%	26%	25%
walleye pollock	8%	13%	12%	11%
arrowtooth flounder	7%	5%	21%	11%
Pacific cod	4%	6%	7%	6%
Pacific halibut	3%	3%	3%	3%
Kamchatka flounder	3%	1%	3%	2%
northern rockfish	0%	1%	4%	2%
other	8%	7%	9%	9%

Table 8. Summer bottom-trawl survey estimates of groundfish biomass (t) by year and average for the Aleutian Islands region 541.

Groundfish species	2002	2004	2006	Average
Atka mackerel	190,817	244,043	350,206	261,689
Pacific ocean perch	109,795	137,112	190,752	145,886
giant grenadier	204,524	181,188	154,988	180,233
walleye pollock	54,634	112,040	69,996	78,890
arrowtooth flounder	49,105	42,263	126,923	72,764
Pacific cod	25,241	51,851	43,349	40,147
Pacific halibut	18,481	22,639	18,248	19,789
Kamchatka flounder	21,729	11,287	16,157	16,391
northern rockfish	3,242	10,375	22,982	12,200
Other	56,178	63,712	96,345	72,078
Total	733,745	876,511	1,089,946	900,067