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Alaska Flatfish Fishery – Bering Sea and Aleutian Islands

MSC 3rd Surveillance Review of Information Report

Prepared for:
Alaska Seafood Cooperative
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1 General Information

Fishery name	Bering Sea – Aleutian Islands Flatfish Fishery		
Unit(s) of Assessment (UoA)	Bering Sea – Aleutian Islands trawl fishing for flathead sole; northern rock sole; yellowfin sole, alaska plaice, arrowtooth flounder, kamchatka flounder		
Date certified	29 Oct 2015	Date of expiry	28 Oct 2020
Surveillance level and type	Surveillance level 1, Review of Information [see FCR v2.0 7.23.1-7.23.4]. No change in proposed surveillance level.		
Date of surveillance audit			
Surveillance stage	1st Surveillance		
	2nd Surveillance		
	3rd Surveillance	X	
	4th Surveillance		
	Other (expedited etc)		
Surveillance team	Lead assessor: Jodi Bostrom Assessor(s): Don Bowen, Jake Rice, Erin Wilson		
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2 Background

This report contains the findings of the third surveillance audit in relation to the Bering Sea and Aleutian Islands (BSAI) flatfish fisheries. The fisheries had no conditions or recommendations. No performance indicators were rescored.

2.1 Update on the fishery since the 2017 Surveillance Audit

Table 1a. Total Allowable Catch (TAC) and Catch Data – Yellowfin sole

TAC	Year	2017	Amount	154,000 MT
UoA share of TAC	Year	2017	Amount	154,000 MT
UoC share of TAC	Year	2017	Amount	154,000 MT
Total green weight catch by UoC	Year (most recent)	2017	Amount	143,000 MT
	Year (second most recent)	2016	Amount	130,500 MT

Table 1b. TAC and Catch Data – Flathead

TAC	Year	2017	Amount	14,500 MT
UoA share of TAC	Year	2017	Amount	14,500 MT
UoC share of TAC	Year	2017	Amount	14,500 MT
Total green weight catch by UoC	Year (most recent)	2017	Amount	9,174 MT
	Year (second most recent)	2016	Amount	9,353 MT

Table 1c. TAC and Catch Data – Arrowtooth flounder

TAC	Year	2017	Amount	14,000 MT
UoA share of TAC	Year	2017	Amount	14,000 MT
UoC share of TAC	Year	2017	Amount	14,000 MT
Total green weight catch by UoC	Year (most recent)	2017	Amount	6,518 MT
	Year (second most recent)	2016	Amount	9,712 MT

Table 1d. TAC and Catch Data – Alaska plaice

TAC	Year	2017	Amount	13,000 MT
UoA share of TAC	Year	2017	Amount	13,000 MT
UoC share of TAC	Year	2017	Amount	13,000 MT
Total green weight catch by UoC	Year (most recent)	2017	Amount	16,489 MT
	Year (second most recent)	2016	Amount	13,452 MT

Table 1e. TAC and Catch Data – Northern rock sole

TAC	Year	2017	Amount	47,100 MT
UoA share of TAC	Year	2017	Amount	47,100 MT
UoC share of TAC	Year	2017	Amount	47,100 MT
Total green weight catch by UoC	Year (most recent)	2017	Amount	35,258 MT
	Year (second most recent)	2016	Amount	45,800 MT

Table 1f. TAC and Catch Data – Kamchatka flounder

TAC	Year	2017	Amount	5,000 MT
UoA share of TAC	Year	2017	Amount	5,000 MT
UoC share of TAC	Year	2017	Amount	5,000 MT
Total green weight catch by UoC	Year (most recent)	2017	Amount	4,499 MT
	Year (second most recent)	2016	Amount	4,533 MT

2.2 Changes to the management systems

The groundfish fisheries in the BSAI and the Gulf of Alaska (GOA) are managed through two separate but complementary fishery management plans (FMPs): the BSAI Groundfish FMP and the GOA Groundfish FMP. These FMPs establish management measures that are consistent with the ten National Standards established through the Magnuson-Stevens Fishery Management and Conservation Act as well as other required and discretionary provisions for FMPs (NPFMC 2018a). The BSAI groundfish fishery operates under the authority of the North Pacific Fishery Management Council (NPFMC) and the National Marine Fisheries Service (NMFS).

The Council conducted its annual review of the Programmatic Groundfish Management Policy, as required under the GOA and BSAI Groundfish FMPs. This year's review focused

on Council activities in 2017 that were relevant to the Groundfish Management Policy. These activities include, but are not limited to, ecosystem-based management response to the change in GOA Pacific cod stock, ongoing projects under the observer program, progress in conservation of northern fur seals, halibut abundance-based management and ongoing sector reports (NPFMC 2018a).

Observer program: The North Pacific Fisheries management system has a comprehensive, industry-funded monitoring and data collection program that uses onboard observers and electronic monitoring (EM). On August 8, 2017 NMFS published a final rule to integrate EM into the North Pacific Observer Program (Ganz et al. 2018).

All vessels that participate in federally managed groundfish fisheries off Alaska are assigned to one of two categories: 1) full observer coverage or 2) partial observer coverage. Vessels and processors in the full coverage category have at least one observer present during all fishing or processing activity. Vessels and processors in the partial coverage category are assigned observer or EM based on the sampling plan described in the Annual Deployment Plan (ADP). Information collected by observers and EM systems provides the foundation for management of federal fisheries off Alaska, including tracking catch and bycatch (NPFMC 2018b). No substantial changes in the North Pacific Groundfish Observer Program occurred during 2017 and 2018 that would affect the MSC certification.

Monitoring and record keeping: In October of 2018, the Council reviewed the Observer Program Draft 2019 ADP, received a report from the Fishery Monitoring Advisory Committee, and provided recommendations to NMFS. The final ADP will be reported to the Council in December 2018 (NPFMC 2018c).

Community Development Quota (CDQ): No changes to the CDQ occurred during 2017 and 2018 that would affect the MSC certification (NPFMC 2018d).

2.3 Changes to regulations

Annually, the Council develops harvest specifications based on information from the Groundfish Plan Teams, Scientific and Statistical Committee, Advisory Panel, the public, and any other relevant information (NPFMC 2018a). Final harvest specifications are implemented by mid-February each year and based on new information contained in the latest groundfish Stock Assessment and Fishery Evaluation (SAFE) reports. The most recent Council approved harvest specifications for the 2018-2019 can be found at https://alaskafisheries.noaa.gov/harvest-specifications/field_harvest_spec_year/2018-2019-843.

In September 2017, Amendment 114 to the BSAI Groundfish FMP became Final Rule. This amendment integrates EM into the North Pacific Observer Program for some vessels using non-trawl gear. This action allows non-trawl vessels in the partial coverage category to opt into an EM selection pool and use EM equipment for catch monitoring and reporting (Oliver et al. 2018).

Amendment 110, implemented in 2016, modified the Chinook and chum salmon bycatch avoidance program. The amendment identified management actions that would be taken when a three-river index of Western Alaska in-river run abundance (Unalakleet River, upper Yukon River, and Kuskokwim River) falls below a 250,000 Chinook salmon threshold. In June of 2018, the SSC and the Council reviewed a new Alaska Department of Fish and Game model for assessing the postseason abundance estimates. The result of the model changes was a scaling down of the total run estimates, with the previous model determined to have overestimated run abundance, especially in recent years of lower run strength. The new model is scheduled to be used both for in-river management in 2018 as well as for

contribution to the three-river index for federal management of the Chinook salmon bycatch limit for 2019 specifications (NPFMC 2018e). Given the changes to the Kuskokwim run reconstruction model, the likelihood of future years falling below the low abundance threshold is increased.

In March 2018, the NPFMC submitted Amendment 117 to the BSAI Groundfish FMP, which reclassifies squid under the ecosystem component category. This was approved on August 6, 2018. The final rule prohibits directed fishing for the squid species complex by Federally permitted groundfish fishermen and set the Maximum Retainable Amount to 20% in order to reduce regulatory discards as much as possible (Federal Register 2018a).

In May 2018, Amendment 115 to the BSAI Groundfish FMP became Final Rule. This amendment changes the relevant FMP documents to include updated descriptions and identifications of essential fish habitat (EFH) and updated information on any adverse impacts of fishing activity to EFH (Federal Register 2018b; Oliver et al. 2018).

In November 2018, Amendment 116 to the BSAI Groundfish FMP became Final Rule. Amendment 116 limits access to the BSAI Trawl Limited Access Sector (TLAS) fishery for yellowfin sole for catcher vessels delivering their catch to motherships. This amendment establishes eligibility requirements for catcher vessels delivering TLAS yellowfin sole catch to motherships based on historical participation in the fishery (Federal Register 2018c; Oliver et al. 2018).

2.4 Changes to personnel involved in science, management, or industry

Following the retirement of Doug DeMaster as director of the Alaska Fisheries Science Center (AFSC), Dr. Bob Foy was recently announced as his replacement. The NPFMC elected Mr. Simon Kinneen as Chair of the Council for the upcoming year, and Mr. Bill Tweit as Vice-Chair. Captain Allison J. Caputo is also joining the Council as the U.S. Coast Guard (USCG) representative. Captain Caputo is the Chief of Maritime Law Enforcement for the Seventeenth Coast Guard District. The USCG representative is a non-voting member of the Council who assists with decision making, specifically on enforcement and safety issues (NPFMC 2018f). In addition, after the 2017 fishing season the Alaska Groundfish Cooperative was disbanded. This puts Amendment 80 quota in the control of the Alaska Seafood Cooperative. These changes should have minimal impact on the management of the fishery.

2.5 Changes to scientific base of information – including stock assessments

The science, information, and management of the fishery took place following the normal procedures of the past several years. Fishery dependent and independent data collection, stock assessment, monitoring and evaluation of ecosystem impacts continued at a high level. The North Pacific Council set yearly harvest specifications for the flatfish and other fisheries (https://alaskafisheries.noaa.gov/harvest-specifications/field_harvest_spec_year/2017-2018-841). The assessment team received no information that identified an issue requiring further investigation that could lead to rescoring of any performance indicators.

2.6 Enforcement activity

In the latest enforcement report from NMFS (June 2018), the total observer complaints declined from 2016 to 2017 across all fisheries. No known enforcement activities have resulted in citations for the BSAI flatfish fishery (NMFS Office of Law Enforcement 2018).

2.7 Changes affecting traceability

No changes to traceability were reported that would affect the MSC certification.

2.8 Review process

Since this was a review of information, no surveillance audit was held. A call for stakeholder input was disseminated as usual through the MSC website and emails to known stakeholders. No stakeholder input or request to speak was received. This review of information used the MSC Standards version 1.1, MSC Certification Requirements version 1.3, MSC Guidance for Certification Requirements version 1.3, MSC Process Certification Requirements version 2.0, and version 1.0 of the reporting template.

3 Results and Conclusion

3.1 Principle 1

Information for assessing the status of flat fish species comes from the SAFE reports, available at <http://www.afsc.noaa.gov/REFM/Stocks/assessments.htm>. Catches of BSAI flatfish continue to be constrained by halibut bycatch limits.

3.1.1 Yellowfin sole

Yellowfin sole in BSAI is managed as a Tier 1a stock (Wilderbuer et al. 2017). The harvest strategy and harvest control rule (HCR) have not changed from the program described in the Public Certification Report. The 2017 assessment model remains nearly identical to the formulation used in last full assessment of the stock in 2014, with minor changes to weight-at-age data last year and a review of how discarded and retained catches have been expressed in the 2018 assessment. The time series were updated with 2017 survey results and commercial catches. Spawning stock biomass (SSB) had shown a long term decline due to only a small number of above average year classes since the mid-1990s, but the 2018 estimate of 895,000 is 196% of B_{MSY} , reflecting the increasing recruitment from the strong 2003 year-class and the above average 2006 year-class so total and SSB are expected to be sustained or increase over the next several years.

The 2017 TAC was set at 154,000 t (59% of the 2017 allowable biological catch [ABC] of 260,800) and total catch was estimated to be 143,000 t (55% of the ABC and 93% of the TAC). The estimate of the 2018 ABC is 277,500 t, and the estimate of the overfishing limit (OFL) is 306,700 t. No significant changes in fishery operations are expected in 2018 that would substantially alter the impact of the fishery on the resource. Because yellowfin sole is not being subjected to overfishing, is not overfished, and is not approaching an overfished condition, no concerns with continued compliance with Principle 1 criteria and benchmarks were found or are expected.

3.1.2 Flathead sole

Flathead sole in BSAI is managed as a Tier 3a stock (McGilliard 2017). The harvest strategy and HCR have not changed from the program described in the Public Certification Report. The last full assessment was in 2014, and in 2017 projections with updated catch data were made using the assessment formulation accepted in 2014, with technical changes to improve weightings of some information sources relative to sample size. SSB has shown a recent gradual decline from high biomasses seen since the 1980s, as strong and above average year classes are becoming less frequent. However, the projected 2017 SSB is 214,124 t, which is 166% of $B_{40\%}$.

The estimate of the 2018 ABC is 66,773 t, and the estimate of OFL is 79,862 t. The 2017 TAC was 14,500 MT (21% of the 2017 ABC) and total catch was 9,174 MT (13% of the ABC and 63% of the TAC). No significant changes in fishery operations are expected in 2017 that would substantially alter the impact of the fishery on the resource. Because flathead sole is not being subjected to overfishing, is not overfished, and is not approaching an overfished condition, no concerns with continued compliance with Principle 1 criteria and benchmarks were found or are expected.

3.1.3 Arrowtooth flounder

Arrowtooth flounder in BSAI is managed as a Tier 3a stock (Spies et al. 2017). The harvest strategy and HCR have not changed from the program described in the Public Certification Report. The last full assessment was in 2016, and in 2017 projections with updated catch data were made using the assessment formulation accepted in 2016. No changes to the model formulation or treatment of data were made in 2017, and for the 2016 assessment only minor changes to better characterize the uncertainties in model projections were made, relative to the model used in 2014 and 2015 when the certification assessment was conducted. SSB has shown an increase since the mid-1970s, with above average or strong year-classes occurring frequently and there was low total mortality. The projected 2018 SSB shows a slight increase compared to the 2017 SSB, and at 490,663 t, is 229% of B40%.

The estimate of the 2018 specified ABC is 65,932 t, and the estimate of OFL is 76,757 t. The 2017 TAC was unchanged from the 2016 TAC at 14,000 MT (17% of the ABC) and estimated total catch was 6,518 MT, 47% of the TAC and 10% of the ABC. Arrowtooth flounder is not being subjected to overfishing, is not overfished, and is not approaching an overfished condition. Thus, there is compliance with Principle 1 criteria and benchmarks for the present audit.

3.1.4 Alaska plaice

Alaska plaice in BSAI is primarily taken as bycatch in the yellowfin sole fishery and is managed as a Tier 3a stock (Wilderbuer and Nichol 2017a). The harvest strategy and HCR have not changed from the program described in the Public Certification Report. A full assessment was conducted no changes were made to the assessment model accepted in 2014. 2017 and 2018 projections were made with additional aging data from research surveys and recent catches and with all data series updated to 2017 values. SSB has been stable and high since the 1980s, but is expected to decrease slightly by the end of this decade, as several exceptionally strong and year-classes from the turn of the century pass through the population. However, the projected 2018 SSB is 191,460 t, which is 151% of B40%.

The estimate of the 2018 ABC is 34,590 t, and the estimate of OFL is 41,170 t. The 2017 TAC was set at 13,000 t (40% of the 2017 ABC), and total catch was 16,489 MT (46% of the ABC and 126% of the TAC). While final catch for 2017 exceeds the specified TAC, this is not an abnormal occurrence and is largely due to limitations on TAC imposed by the overall 2 million MT cap on all North Pacific fisheries. Overages such as this are typically balanced out using unspecified reserves that are withheld for just such an occurrence. No significant changes in fishery operations are expected in 2018 that would substantially alter the impact of the fishery on the resource. Because Alaska plaice is not being subjected to overfishing, is not overfished, and is not approaching an overfished condition, no concerns with continued compliance with P1 criteria and benchmarks were found or are expected.

3.1.5 Northern rock sole

Northern sole in BSAI is managed as a Tier 1a stock, with most catches taken on a winter roe fishery (Wilderbuer and Nichol 2017b). The harvest strategy and HCR have not changed from the program described in the Public Certification Report. The 2016 assessment model has changed little from full assessments of the stock in the 2010s, and the 2017 assessment updated the input data series from the 2016 assessment and merely made projections forward for two years. SSB has increased over the past 10 years as several above average to strong year classes from the 2000s recruited to the stock, but is expected to begin to decline slightly as more recent recruiting year-classes are closer to the long-term average. The estimated 2018 SSB is 472,200 t, which is 183% of B_{MSY} .

The estimate of the 2018 ABC is 143,100 t, and the estimate of OFL is 147,300 t. The 2017 TAC was set at 47,100 MT (30% of the 2017 ABC) and total catch was 35,258 MT (23% of the ABC and 75% of the TAC). No significant changes in fishery operations are expected in 2017 that would substantially alter the impact of the fishery on the resource. Because northern rock sole is not being subjected to overfishing, is not overfished, and is not approaching an overfished condition, no concerns with continued compliance with Principle 1 criteria and benchmarks were found or are expected.

3.1.6 Kamchatka flounder

Kamchatka flounder in BSAI is managed as a Tier 3a stock (Bryan and Wilderbuer 2017). The harvest strategy and HCR have not changed from the program described in the Public Certification Report. The last full assessment was in 2014, in 2016 a full update was conducted and in 2017 only a partial assessment occurred with updated catch data using the assessment formulation as accepted in 2014 and 2016. SSB increased gradually, but consistently, from the start of the assessment period in 1991 until about 2009 and has been slightly variable without trend thereafter. The projected 2018 SSB is 63,718 t, which is 125% of $B_{40\%}$.

The estimate of the 2018 ABC is 9,737 t, and the estimate of OFL is 11,347 t. The 2017 TAC was set at 5,000 t (58% of the 2017 ABC) and total catch was 4,499 MT (51% of the ABC and 90% of the TAC). No significant changes in fishery operations are expected in 2017 that would substantially alter the impact of the fishery on the resource. Because Kamchatka flounder is not being subjected to overfishing, is not overfished, and is not approaching an overfished condition, no concerns with continued compliance with Principle 1 criteria and benchmarks were found or are expected.

3.2 Principle 2

There was no information that led to concerns with compliance of Principle 2 requirements based on the review of new information.

3.2.1 Retained species and bycatch

The composition and amount of retained species and the bycatch in the flatfish fisheries under certification, including marine mammals and seabirds, is collected by the North Pacific Groundfish and Halibut Observer Program operated by the NMFS. Once again, the flatfish fisheries in the BSAI had 200% observer coverage in 2017 (Mary Furuness, NMFS Alaska Regional Office, Catch Accounting System, 2018).

Considering all flatfish fisheries together, retained and bycatch species catches were at comparable levels to those in the previous two years (Mary Furuness, NMFS Alaska Regional Office, Catch Accounting System, 2018). Pollock and Pacific cod continued to dominate the catch of FMP-retained species in 2017. As a group, the catch of skate species in 2017 (2,341 t) was greater than in the previous year (1,971 t) as a result of increased

catches of both Alaska and Aleutian skates. The species composition of sculpins taken in the flatfish fisheries in 2017 differed little from the previous several years, although the total catches decreased by several hundred tons. The catches of Pacific Sleeper sharks and Salmon sharks decreased in 2017 compared to 2016.

At 4,821 t, the total bycatch on non-FMP species was the second lowest in the time series beginning in 2011 (Mary Furuness, NMFS Alaska Regional Office, Catch Accounting System, 2018). As in previous years, Giant grenadier, starfish, and benthic urocordata were the major bycatch species. The catch of Scyphlo jellies decreased to 150 t, the lowest in the time series.

Across all MSC-certified flatfish species, the catches of prohibited species generally decreased (Mary Furuness, NMFS Alaska Regional Office, Catch Accounting System, 2018). The halibut bycatch fell to 872 t compared to the average from 2011 to 2016 of 2,084 t. Similarly, the catch of Chinook salmon dropped to 2,345 from the high of 6,492 in the previous year. The 2017 Chinook catch was just slightly higher than the 2010-2016 average. The number of non-Chinook salmon taken also decreased in 2017. The bycatch of Bairdi tanner crabs increased, but was still below the long-term average during the period 2011 to 2016. By contrast, the catches of Red king crab increased to about 59,000 individuals compared to the average catch of 36,000.

3.2.2 Seabirds

The most recent U.S. Fish and Wildlife Service (USFWS) surveys on seabird population trends in Alaska Maritime National Wildlife Refuge monitored sites indicated that statewide, 27% of species showed increasing population trends, 60% were stable and 13% declined between 2006 and 2015 (Dragoo et al. 2016). Eich et al. (2016) report on seabird bycatch mitigation and bycatch trends in Alaskan fisheries during the period 2007 to 2015.

Overall, the number of seabirds taken in the BSAI groundfish fisheries in 2017 more than double led by an increase in the number of Northern fulmars, shearwaters and gulls taken (Siddon and Zidor 2017). Despite this increase, relatively few seabirds are taken in flatfish fisheries. In 2017, 9 Kittiwakes, 349 Northern Fulmars and 14 Shearwaters were reported taken in the BSAI flatfish fisheries (Mary Furuness, NMFS Alaska Regional Office, Catch Accounting System, 2018).

The U.S. West Coast and Alaska Trawl Fisheries Seabird Cable Strike Mitigation Workshop was held on 7-8 November 2017 at the NOAA Fisheries West Coast Region in Seattle, Washington. The workshop was hosted by a Steering Committee consisting of members from NOAA's Northwest Fisheries Science Center, Alaska Fisheries Science Center, and the Alaska Regional Office. The goal of the workshop was to identify effective, practical mitigation measures to reduce seabird cable strike mortality in the catcher-processor west coast hake and Alaska trawl fisheries (Jannot et al. 2018).

3.2.3 Marine mammals

Marine mammals are rarely taken incidentally in the BSAI flatfish fisheries. The BSAI trawl fisheries in 2017 continue to be classified as Category II (occasional interactions with marine mammals) (NOAA Fisheries 2018).

Northern fur seals

The most recent information on the numbers of northern fur seal pups on the Pribilof Islands comes from August 2016. An estimated 80,641 (SE = 717) pups were born on St. Paul Island and 20,490 (SE = 460) pups were born on St. George Island. The 2016 pup production estimate for St. Paul Island is 12.1% less than the estimate in 2014, whereas that

for St. George Island is 8.2% greater than the estimate in 2014. Overall pup production for the Pribilof Islands decreased approximately 8.6% from 2014 to 2016. Estimated pup production on St. Paul has not been this low since before 1915 at which time the population was recovering from pelagic sealing at approximately 8% annually (https://www.afsc.noaa.gov/nmml/PDF/NFurSealPupMem2016_Final.pdf).

Some 27,750 (SE = 228) pups were born on Bogoslof Island in 2015, the most recent estimate for this colony. The 2015 pup production estimate for Bogoslof Island is 21.1% greater than the estimate in 2011. Since the first pup was observed on Bogoslof Island in 1980 pup production has increased at an annual rate of 33.7% (SE = 2.53) and at an annual rate of 10.1% (SE = 1.08) since 1997 (https://www.afsc.noaa.gov/nmml/PDF/BogPupMem15_final.pdf). Recent volcanic eruptions on Bogoslof (both in 2016 and 2017) have prevented researchers from estimating current pup production or pre-weaning mortality rate at this colony. By March 2017, the area of the island had more than tripled as a result of 36 eruptions. Nevertheless, staff at the AFSC conducting the Steller sea lion aerial survey did fly over the island and photograph it. They documented both sea lions and northern fur seals on the island. Furthermore, the number of sea lion pups seen was similar to the last survey in 2017 prior to the eruptions, suggesting the fur seal numbers also may not have been seriously impacted. AFSC is seeking funds to estimate fur seal pup production in 2019 (T. Gelatt pers. comm.).

To gain a better understanding of the relationships among pollock, climate change and fur seal demography, NOAA scientist are partnering with the Lenfest Ocean program to develop a new spatially explicit bioenergetics model to estimate the dietary needs of northern fur seals and link the model to the existing climate-to-fish model of the Bering Sea (FEAST) and the multi-species stock assessment model (CEATTLE). See <https://www.lenfestocean.org/en/news-and-publications/multimedia/webinar-on-examining-the-relationships-between-northern-fur-seals-pollock-and-climate-change-in-alaska>.

Steller sea lions

NOAA conducted surveys to count Steller sea lion pups and non-pups (adults and juveniles ≥ 1 year old) on terrestrial rookeries and haulout sites in Alaska in June-July 2017 (https://www.afsc.noaa.gov/NMML/PDF/SSL_Aerial_Survey_2017.pdf). The latest survey showed that for the western distinct population segment (DPS) non-pup counts increased at a rate of 2.14% per year between 2002 and 2017. This is a slightly lower rate of increase than reported last year for the 2003-2016 period, but the estimated total number of non-pups increased by about 1,600 animals. Pups in the western DPS increased at 1.78% per year, down from the 2.19% per year estimated in 2016. About 700 fewer pups were born in 2017 than in 2016.

Regional patterns of western DPS count trends, for both pups and non-pups, are comparable to those described in previous years' assessments: generally decreasing counts west of Samalga Pass and increasing counts to the east.

AFSC researchers continue to pursue studies to determine which life history traits (age-specific reproductive or survival rates) are implicated in the regional dynamics of both species and to better understand the links between foraging behavior, diets and dynamics. Once completed these studies may provide new insight into the factors underlying recent population trends.

3.2.4 Habitat

The most recent 5-year review of Essential Fish Habitat (EFH) took place in 2016 using a new Fishing Effects (FE) model to assess the impacts of fishing activities on EFH. This model replaces the previously-used Long-term Effects Index model. Using this new model

for the period 2003 to 2016 provided estimates of between 3.0% and 6.7% of flatfish EFH impacted by flatfish fisheries in the BS (http://www.npfmc.org/wp-content/PDFdocuments/conservation_issues/EFH/EFH_FE_output_BS_locked.xlsx) and between 1.3% and 2.4% in the Aleutian Island MSC-certified flatfish fisheries (http://www.npfmc.org/wp-content/PDFdocuments/conservation_issues/EFH/EFH_FE_output_AI_locked.xlsx).

In April 2017, based on the analysis with the FE model, the Council concurred with the Plan Team consensus that the effects of fishing on EFH do not currently meet the threshold of more than minimal and not temporary, and mitigation action is not needed at this time (NMFS 2017).

3.2.5 Ecosystem

The NPFMC released an ecosystem approach and vision statement in February 2014 which was meant to guide NPFMC actions in all fisheries. At the December 2015 meeting, the Council initiated the development of the Bering Sea Fishery Ecosystem Plan (FEP). In December 2016, the Council appointed 12 people to a Council Bering Sea Fishery Ecosystem Plan Team, to begin developing the Council's Bering Sea FEP. The Team's primary responsibilities are to develop the core FEP document, to discuss potential and ongoing FEP action modules, make recommendations to the Ecosystem Committee and the Council. In September 2017, the plan team met to review draft text of some chapters of the plan and develop content of remaining chapters (<https://www.npfmc.org/bsfep/>).

The NPFMC along with 10 federal agencies and 4 state agencies created the Alaska Marine Ecosystem Forum. This forum seeks to promote coordination between the agencies on issues of shared responsibilities related to the marine ecosystems off Alaska's coast. In June 2018, NPFMC convened a one-day Ecosystem Research Workshop to discuss the integration of ecosystem knowledge into the Council process. The report of the workshop outlined discussions on managing ecosystems in a changing environment (NPFMC 2018g).

Siddon and Zador (2017) update information on the state of the BSAI ecosystem. Weather on the Bering Sea shelf was generally warmer than normal for the fourth year in a row in 2017. Sea ice extended over the southern shelf during the winter and spring. Estimates of euphausiids from the 2016 summer trawl survey were the lowest in the time series. There were comparable euphausiid abundances over the middle shelf between 2016 and 2017. The biomass of motile epifauna remains above the long-term mean, with an increasing trend in the past five years. Brittle star biomass remained above average, and urchins, sand dollars, and cucumbers were also above their long-term mean. The biomass of benthic foragers dipped in 2015, but has remained at a near-average level in 2016 and 2017. The decline in 2015 was due to a 25% decline in Northern rock sole, which continued to decline in 2017. By contrast, there was a 112% increase in other species (e.g., Bering flounder, Longhead dab, Slender sole, Starry flounder) and 24% increase in Flathead sole between 2016 and 2017.

Conditions in the AI ecosystem were not updated in 2017. Therefore, conditions reported in the second surveillance audit are the most recent. The biomass of pelagic-forager and apex-fish-predator foraging guilds decreased across the region between the 2014 and 2016 surveys, although patterns varied among species. The overall decrease may indicate a response to the warmer water or reflect high variances commonly observed in estimated biomass among survey years (Zador 2016).

None of the reported ecosystem changes that would affect the MSC certification of the flatfish fisheries.

3.3 Principle 3

All relevant changes are noted in Section 2 above.

3.4 Conclusion

MRAG Americas confirms that the Alaska Flatfish Fishery – Bering Sea and Aleutian Islands remains certified following the completion of this surveillance. No issues were identified, and no changes in the fishery occurred that would result in a change to the surveillance schedule.

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Appendices

Appendix 1. Stakeholder submissions

None were received.

Appendix 2. Revised Surveillance Program

The surveillance audit timing and program remain unchanged.