Report to the

North Pacific Fishery Management Council

on the 2019

Bering Sea Pollock

Mothership Salmon Savings Incentive Plan

James Mize, IPA Representative

This report is to the North Pacific Fishery Management Council and covers the Bering Sea Pollock Mothership Salmon Savings Incentive Plan Agreement ("MSSIP" or "Agreement"). The MSSIP is an incentive plan agreement ("IPA") entered into by the Members of the Mothership Fleet Cooperative ("MFC") entity to receive transferable allocations of Chinook salmon PSC.

Reporting Requirements

Amendment 91 to the Fishery Management Plan for Groundfish of the Bering Sea and Aleutian Islands Fishery combines a hard cap on the amount of Chinook salmon that may be caught incidentally with an IPA and a Performance Standard designed to minimize bycatch to the extent practicable in all years and prevent bycatch from reaching the limit in most years. Amendment 110 established further requirements for an IPA, to include measures addressing chum salmon bycatch, rolling hotspot closure programs and salmon excluder use, and further incentive mechanisms. Regulations implementing Amendments 91 and 110 require participants engaged in an IPA to submit to the Council an annual report including:

(1) A comprehensive description of the incentive measures, including rolling hotspot closure program and salmon excluder use, in effect in the previous year;

(2) A description of how these incentive measures affected individual vessels;

(3) An evaluation of whether incentive measures were effective in achieving salmon savings beyond levels that would have been achieved in absence of the measures, including the effectiveness of:

   a. Measures to ensure that chum salmon were avoided in areas and at times where chum salmon are likely to return to western Alaska;

b. Restrictions or penalties that target vessels that consistently have significantly higher Chinook salmon PSC rates relative to other vessels; and

c. Restrictions or performance criteria used to ensure that Chinook PSC rates in October are not significantly higher than in previous months;

(4) A description of any amendments to the terms of the IPA that were approved by NMFS since the last annual report and the reasons that the amendments to the IPA were made;

(5) The sub-allocation to each participating vessel of the number of Chinook salmon PSC and amount of pollock (mt) at the start of each fishing season, and number of Chinook salmon PSC and amount of pollock (mt) caught at the end of each season; and

(6) Information on in-season transfer of Chinook salmon PSC and pollock among AFA cooperatives, entities eligible to receive Chinook salmon PSC allocations, or CDQ groups; and

(7) Information on in-season transfers among vessels participating in the IPA.

Each item is addressed below.

Description of MSSIP Incentive Measures

The MSSIP contains three key incentive measures: the ability to earn Salmon Savings Credits for use in later years, a Rolling Hotspot Closure ("RHC") program that restricts access to fishing grounds where bycatch is unacceptably high, and a set of Best Management Practices that establish rules that participants agree upon as a condition of participation in the MSSIP.

Each operator of a Vessel participating in the MSSIP is motivated to avoid Chinook salmon as a means to earn Salmon Savings Credits. Credits give a Vessel the ability to exceed the Annual Threshold in years when encounter rates are particularly high and bycatch amounts, even after best avoidance efforts are taken, are higher than the Performance Standard set in Amendments 91 and 110. Credits are only earned, however, by reducing bycatch below the Annual Threshold in other years. In years of high salmon encounters, credits offer a Vessel the ability to harvest more of its annual pollock allocation than it otherwise could due to the Annual Threshold, and so serve as "insurance" against risks of closure due to high encounters of salmon bycatch. Each Vessel's desire to earn these credits for insurance is the primary incentive in the MSSIP.

The RHC program establishes the incentive to maintain low bycatch rates in order to have access to all productive fishing grounds. Fleets achieving relatively low Chinook salmon and chum salmon bycatch rates are not constrained by hotspot closures, while Fleets with average or higher rates are. The RHC program creates the incentive to find ways and means to harvest pollock while avoiding Chinook salmon bycatch at all times. The RHC program insures that Fleets failing to meet that standard are excluded from the fishing areas with the highest bycatch rates.

The RHC program provides for the designation of Bycatch Avoidance Areas closed to fishing when the rate of Chinook salmon or chum salmon bycatch in that area (the "Area Rate") exceeds the Base Rate. The Base Rate is an index of relative Chinook salmon abundance defined as the ratio of the three-week rolling sum of total Chinook salmon taken incidentally in the Fishery to the three-week rolling sum of the total number of metric tons of pollock caught in the Fishery. The Chinook Salmon Base Rate is updated weekly, with rules in the first three weeks of the "A" season or "B" season to determine initial Base Rates. Chum salmon base rates are also applicable in "B" season, and are designed to avoid conflicting with Chinook salmon bycatch measures.

Best Management Practices ("BMPs") in the MSSIP specify standards agreed to by participants in order to minimize salmon bycatch as much as possible. Among the BMPs are requirements to closely monitor fishing conditions and adapt practices such as tow time duration or codend size if they are determined to impact salmon bycatch, make test tows when entering new fishing areas where salmon bycatch conditions are not known, and maintain rapid communications of salmon bycatch for high bycatch tows and for daily bycatch rates. All Vessels participating in the MSSIP agree to use a salmon excluder at all times when fishing in the directed mothership pollock fishery, and if any contingency arises that precludes such use, to report to the IPA Representative the circumstances of such non-use. The BMPs include a provision for an annual adaptive management review of the previous years' experience under the MSSIP and consider amendments to improve management and adapt to new information.

Effect of Incentive Measures on Individual Vessels

Mothership fishing operations are uniquely dependent upon individual fishermen's ability to work cooperatively. Under the MSSIP, incentives to avoid Chinook salmon bycatch at all rates of encounter must not only be at the individual Vessel level but also at the Fleet level such that individual incentives are carefully balanced with the need to maintain a cohesive and efficient Fleet. Since many decisions related to salmon avoidance strategies must be made collectively by the Vessels and processor working together in a Fleet (or two processors in a "Pooled Fleet"), it is at that level where the incentive to avoid Chinook salmon at all rates of encounter is most appropriately directed.

Under the MSSIP, each Fleet manages a share of the Mothership Sector Annual Threshold equal to that Fleet's percentage of the mothership pollock allocation. In 2019, three Fleets participated in the MSSIP, consisting of nineteen Vessels. Two of these Fleets participated as a Pooled Fleet, where the Fleets' shares of salmon bycatch were aggregated. Each Fleet avoided Chinook salmon bycatch such that total incidental catch remained significantly below the Fleet's share of the Annual Threshold, thus generating Salmon Savings Credits. At the end of the season, the total Salmon Savings Credits generated by each Fleet or Pooled Fleet was disaggregated and distributed to each Vessel in proportion to the Vessel's percentage of contribution to the Fleet's pollock allocation. Accordingly, Vessels participating in a Fleet with lower Chinook salmon bycatch generated more Salmon Savings Credits than Vessels participating in a Fleet with higher bycatch.

During the course of the 2019 fishery, the MSSIP and RHC program applied a total of twelve fishing closure areas in order to avoid bycatch of either Chinook or chum salmon. Under the terms of the Agreement, the "Chinook Salmon Conservation Area" (approximately 735 square miles) remained closed to Vessels participating in the MSSIP during the entire 2019 "A" season. In addition, one other Bycatch Avoidance Area was closed to mothership Fleets with higher Chinook salmon bycatch in the RHC program during the 2019 "A" season. During the 2019 "B" season, ten Bycatch Avoidance Areas were closed to mothership Fleets in the RHC program based on chum salmon and Chinook salmon bycatch rates. Maps and effective dates of the Chinook Salmon Conservation Area closure and the Bycatch Avoidance Area closures are shown in Appendix 1.

During 2019, Fleets maintained operations and communication protocols consistent with the Best Management Practices. There were no reports of contingencies resulting in temporary non-use of a salmon excluder in 2019.

Evaluation of Effectiveness

In 2019, the three Fleets participating in the mothership sector collectively avoided incidental catch of Chinook salmon such that the total bycatch was approximately 56% of the mothership sector's portion

of the reduced Base Cap in place during years of low Chinook salmon abundance as determined by the 3-river index. Total Chinook salmon bycatch was 1,465 salmon, 1,134 below the reduced Annual Threshold of 2,599. As a result of its low salmon bycatch, the participants in the MSSIP in the 2019 fishery generated a total of 495 Salmon Savings Credits. It is not possible to assess how many salmon would have been incidentally caught in the mothership sector in the absence of a salmon savings IPA; however, if there were no salmon savings IPA, Vessels would not have had the incentive to avoid Chinook salmon bycatch in order to earn Salmon Savings Credits.

Vessels also saved Chinook salmon by avoiding areas of higher Chinook salmon encounters in order to avoid triggering the closure of Bycatch Avoidance Areas under the RHC. It is not possible to assess precisely how many Chinook salmon would have been incidentally caught in the mothership sector in the absence of this RHC program; however, if there were no RHC program, Vessels would not have had the incentive to avoid Chinook salmon bycatch in order to avoid being restricted from fishing in Bycatch Avoidance Areas designated under the RHC program. Generally, areas closed by the RHC program result in lower bycatch rates in the weeks following the closures, and if Vessels encounter high bycatch rates when relocating to new fishing grounds, additional closures are designated, which tends to reduce Chinook salmon bycatch overall.

As an additional measure of effectiveness, the MSSIP requires that on an annual basis the participants engage knowledgeable and competent third-parties to conduct compliance audits of the MSSIP rules and the RHC program. Audit results are attached at Appendix 2.

Regulations promulgated under Amendment 110 to the Bering Sea Fishery Management Plan require IPAs to include additional measures related to bycatch of chum salmon of western Alaska origin, restrictions or penalties directed toward vessels that consistently have significantly higher Chinook salmon PSC rates relative to other vessels, and restrictions or performance criteria used to ensure that Chinook PSC rates in October are not significantly higher than in previous months. In 2019, measures to ensure that chum salmon were avoided in areas and at times where chum salmon are likely to return to western Alaska were addressed primarily by chum salmon provisions integrated in the RHC Program in the MSSIP. These provisions prioritize Chinook salmon avoidance in order to ensure that Chinook PSC rates in October are not significantly higher than in previous months. In 2019, fishing conditions were favorable such that mothership fleets completed fishing well before the end of the season and little catch occurred in October. Closures in the RHC Program were in effect in October to ensure that Chinook PSC rates were not significantly higher than in previous months.

Because of existing measures in the MSSIP and because of the nature of mothership fishery operations, participants in the MSSIP have not had the emergence of any vessels that have consistently higher bycatch than other vessels fishing at the same time (aka “outliers”); however, should any such vessels emerge, the MSSIP sets forth penalties and restrictions applicable to those vessels. Performance of Vessels participating in the MSSIP in 2019 was reviewed and it was determined that no Vessel consistently had significantly higher Chinook salmon PSC rates relative to other Vessels.

Amendments to IPA Approved by NMFS

There were no Amendments to the MSSIP submitted in 2019. The current version of the MSSIP is Revision 5, which was submitted as an Amendment to this IPA during 2016 to address changes in the regulations as a result of Amendment 110 to the Bering Sea Groundfish Fishery Management Plan. Revision 5 to the MSSIP, was submitted to NMFS November 16, 2016. NMFS approved Revision 5 to the MSSIP on December 28, 2016.

Sub-allocations to MSSIP Participants, Pollock and Chinook Salmon PSC Catch

The MSSIP provided for individual vessel sub-allocations in proportion to the individual vessels' percentages of pollock under the terms of the MFC. These percentages are detailed in Table 1, grouped by Fleet within which the individual vessels participated. The number of Chinook salmon PSC and amount of pollock (in metric tons) caught at the end of each season are detailed in Table 2, by Fleet (pollock amounts in Table 2 differ from Table 1 due to in-season adjustments to the Bering Sea directed fishery allowance by NMFS).

Table 1 - Sub-Allocations of Chinook Salmon PSC and Pollock Amounts, By Vessel, Start 2019

Vessel	Co-op %	2019 Base Cap	2019 Initial Pollock Quota
Aleutian Challenger	4.93%	128	5,956.77
Alyeska	2.27%	59	2,742.77
American Beauty	6.00%	156	7,249.62
California Horizon	3.79%	98	4,579.34
Margaret Lyn	5.64%	147	6,814.64
Mar-Gun	6.25%	162	7,551.69
Mark 1	6.25%	162	7,551.69
Misty Dawn	3.57%	93	4,313.52
Morning Star	3.60%	94	4,349.77
Nordic Fury	6.18%	161	7,467.11
Ocean Leader	6.00%	156	7,249.62
Oceanic	7.04%	183	8,506.22
Pacific Challenger	9.67%	251	11,683.97
Pacific Fury	5.89%	153	7,116.71
Papado II	2.95%	77	3,564.40
Traveler	4.27%	111	5,159.31
Vanguard	5.35%	139	6,464.24
Vesteraalen	6.20%	161	7,491.27
Western Dawn	4.15%	108	5,014.32
MFC Total	**100%**	**2,599**	**120,827.00**

Table 2 – Number of Chinook Salmon PSC and Pollock Amounts Caught, by Season, 2019

Season	Fleet/Pooled Fleet	Chinook Salmon (#)	Pollock (mt)
A season	Excellence / Ocean Phoenix	626	35,799
	Golden Alaska	301	18,626
	Total MSSIP	**927**	**54,424**
B season	Excellence / Phoenix	440	44,776
	Golden Alaska	98	23,290
	Total MSSIP	**538**	**68,066**

In-season Transfers among AFA Coops, Entities, or CDQ Groups

In the 2019 MSSIP, no in-season Transfer of Chinook salmon PSC or pollock occurred among AFA cooperatives, entities eligible to receive Chinook salmon PSC allocations, or CDQ groups.

In-season Transfers among Vessels

No Transfers occurred among Vessels participating in the MSSIP during the 2019 pollock fishery. No Fleet to Fleet Paired Transfers (Transfers of pollock and corresponding Chinook salmon PSC) occurred during 2019.

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Appendix 1 – 2019 Area Closures Under the MSSIP and RHC Program

Figure A1-1. Chinook Conservation Area closure, effective entire A season 2019.

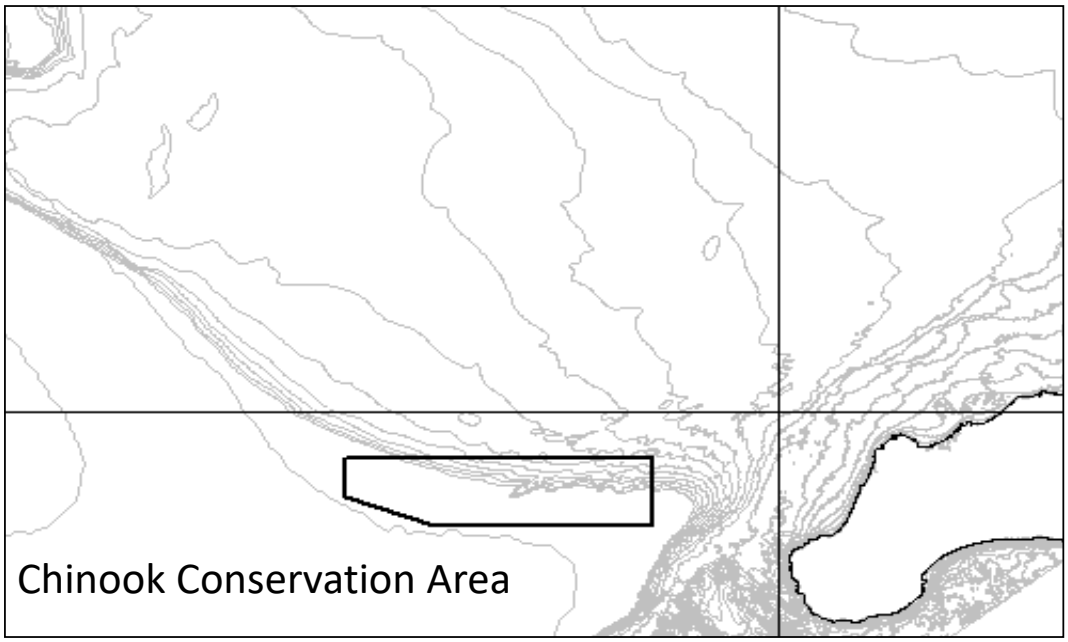


Figure A1-2. A season Bycatch Avoidance Area closures, effective 3/29/2019 to 4/5/2019.

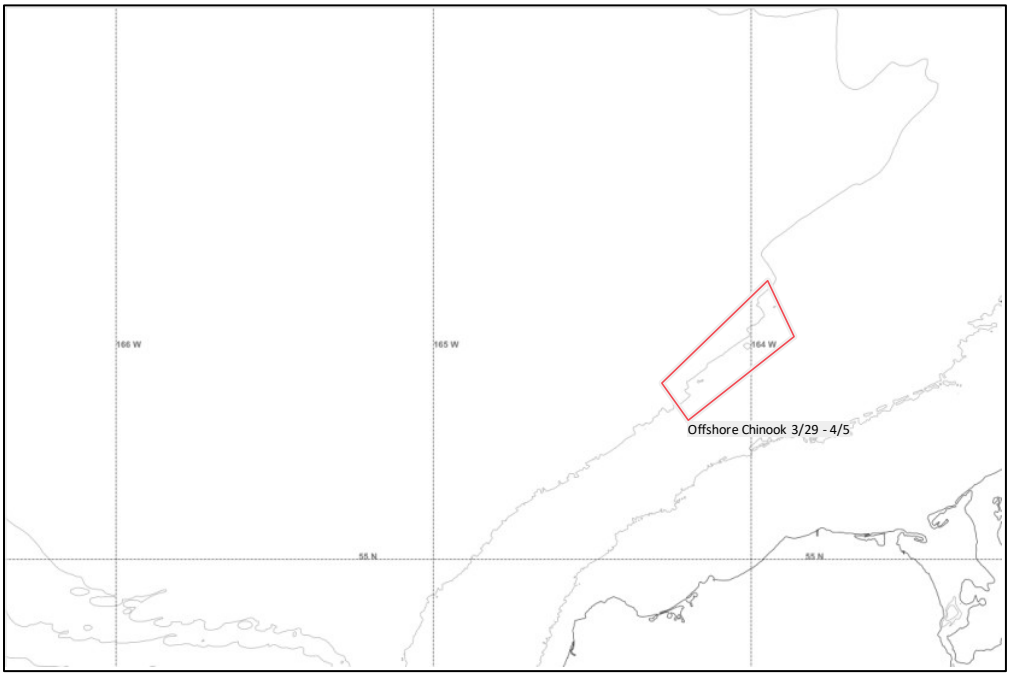


Figure A1-3. B season Bycatch Avoidance Area closures, effective 7/2/2019 to 7/05/2019.

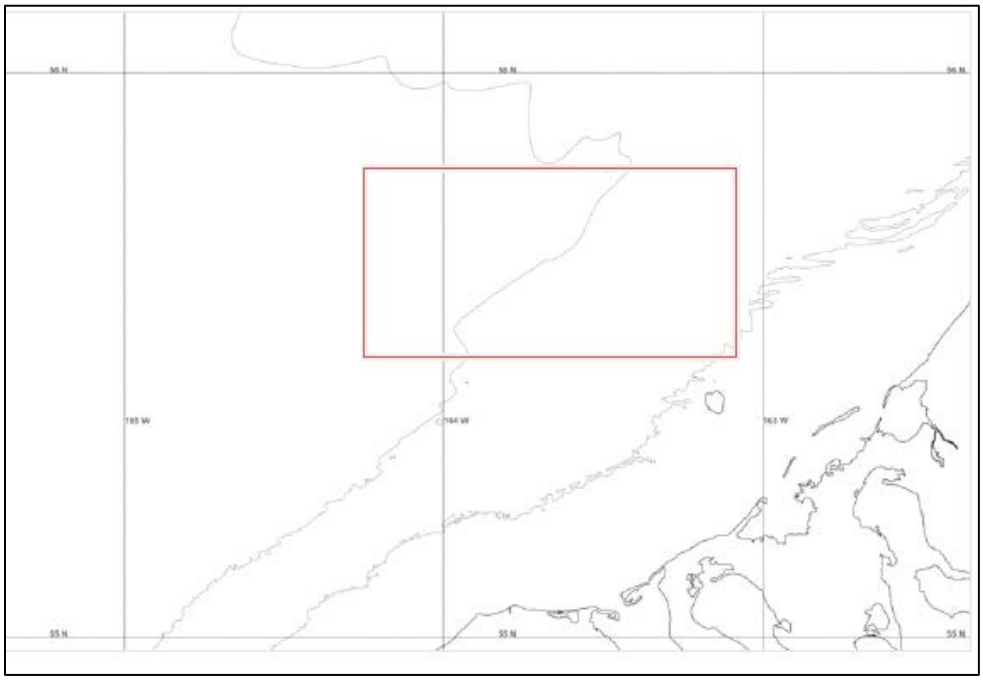


Figure A1-4. B season Bycatch Avoidance Area closures, effective 7/19/2019 to 7/26/2019.

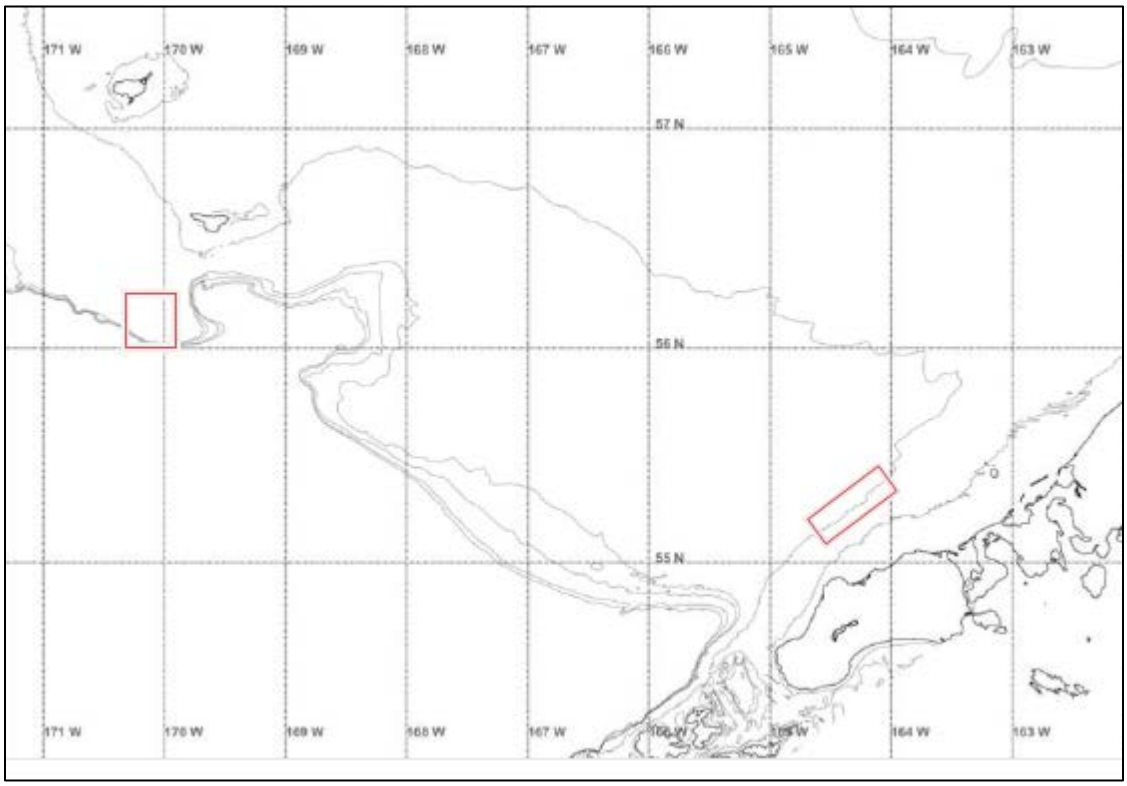


Figure A1-5. B season Bycatch Avoidance Area closures, effective 8/2/2019 to 8/9/2019.

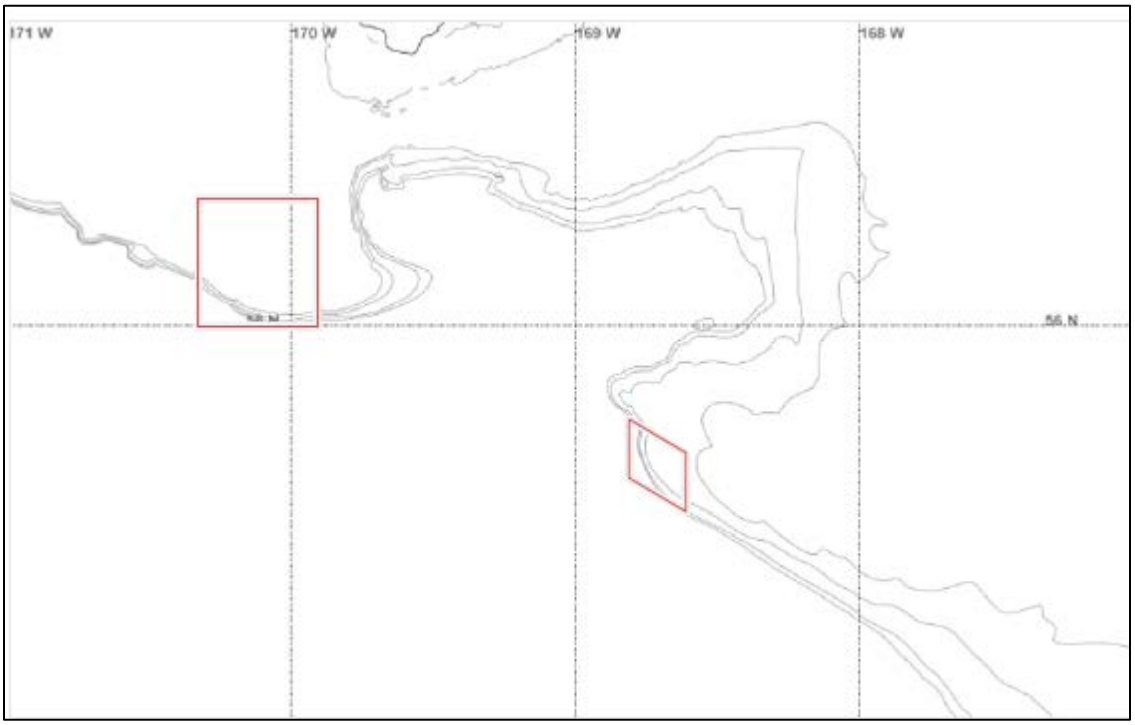


Figure A1-6. B season Bycatch Avoidance Area closures, effective 8/30/2019 to 9/6/2019.

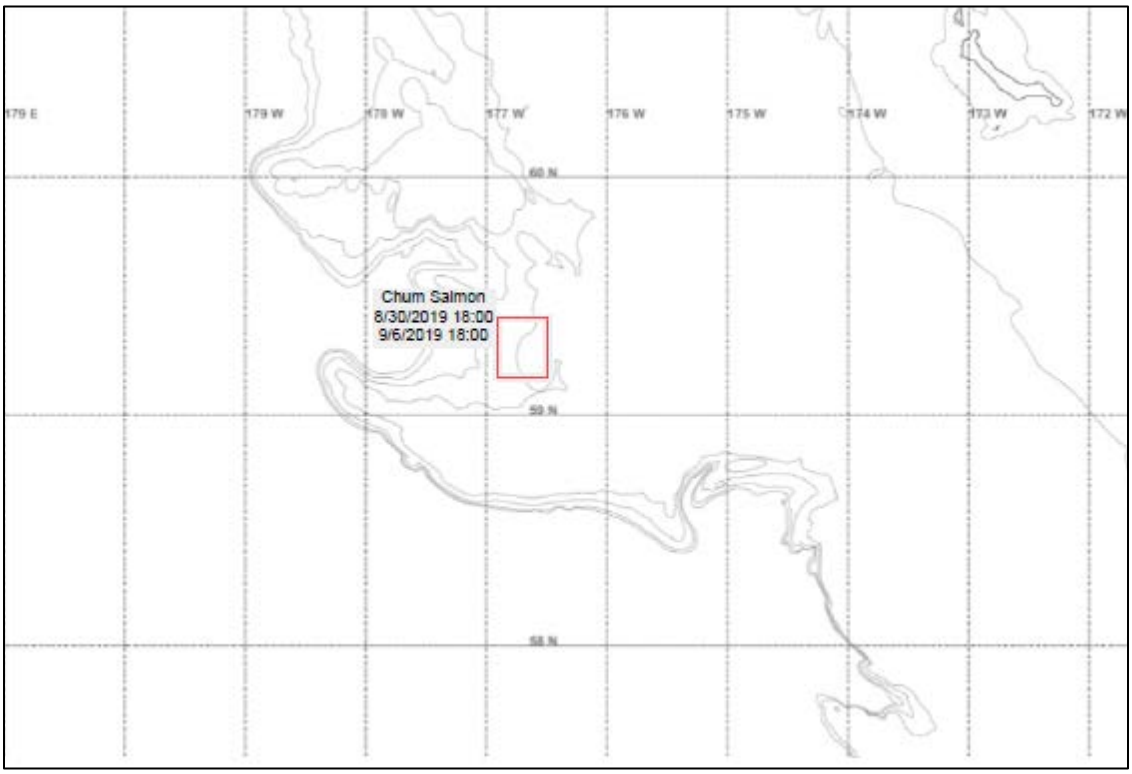


Figure A1-7. B season Bycatch Avoidance Area closures, effective 9/13/2019 to 9/20/2019.

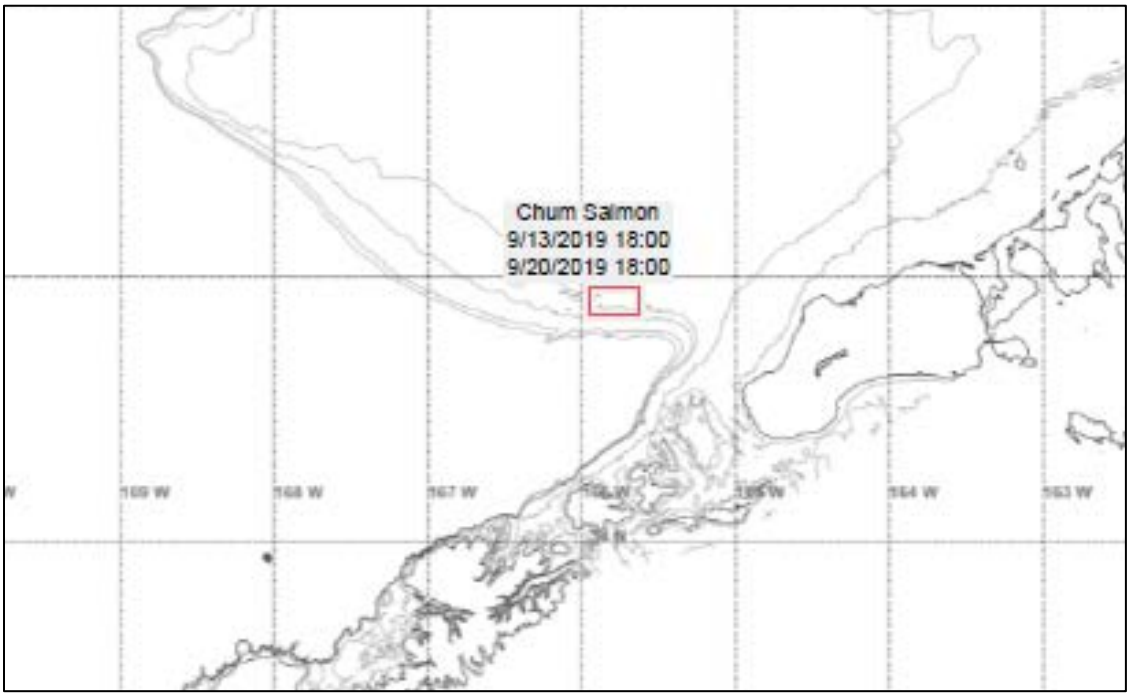


Figure A1-8. B season Bycatch Avoidance Area closures, effective 10/4/2019 to 10/11/2019.

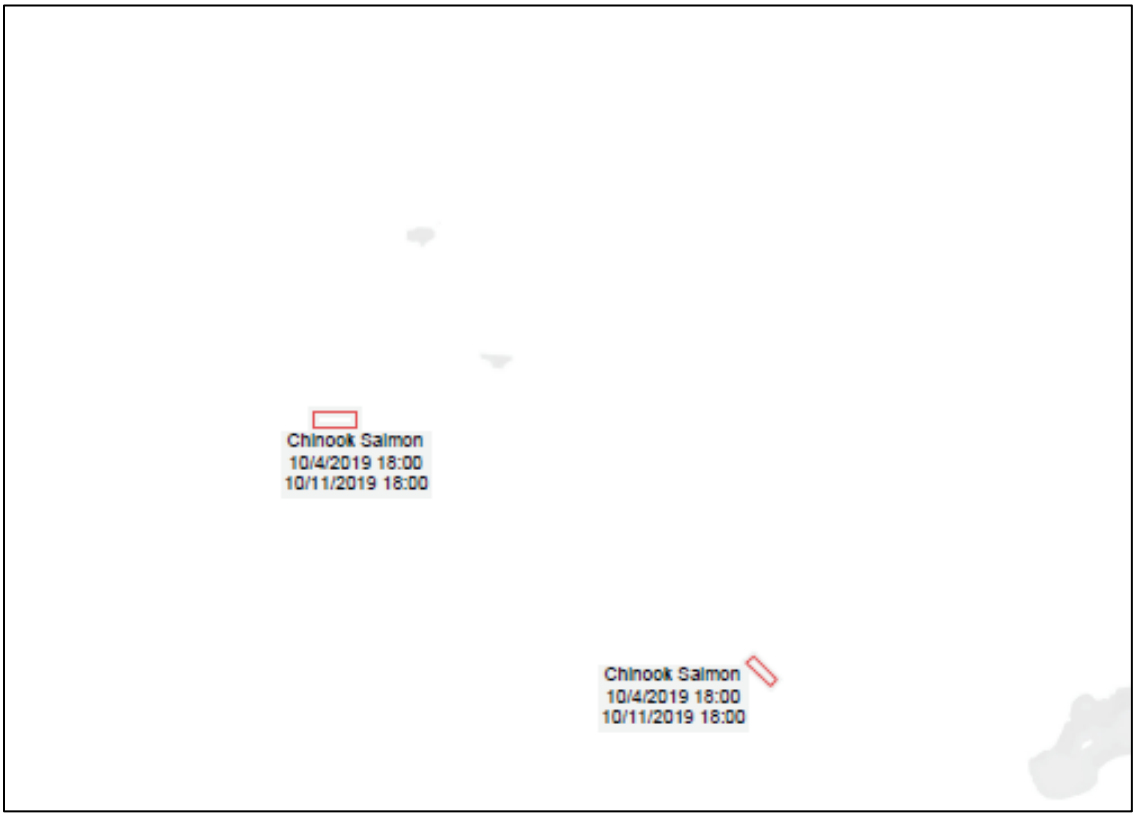
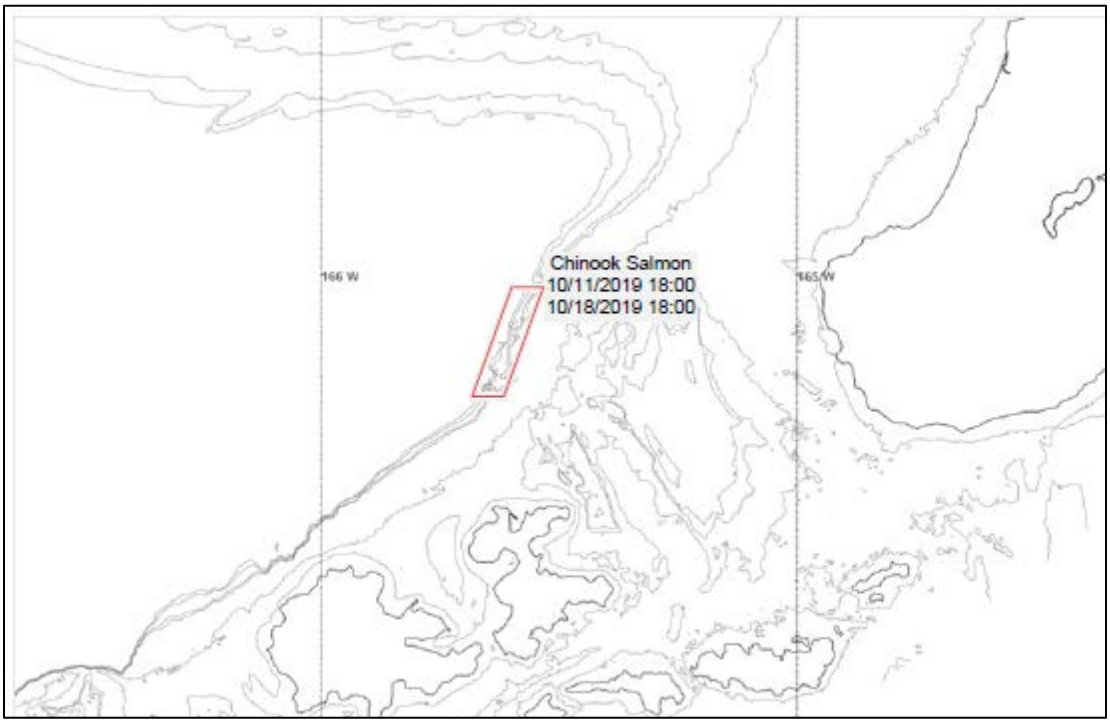


Figure A1-9. B season Bycatch Avoidance Area closures, 10/11/2019 to 10/18/2019.



Appendix 2 – Third-Party Audit of RHC Program and MSSIP Rules

[Attached]

MSSIP Audit, Mothership Fleet Cooperative, Bering Sea Pollock Fishery, 2019

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BACKGROUND

The Mothership Sector of the Bering Sea/Aleutian Islands Pollock Fishery has agreed to follow the rules established by the Mothership Salmon Savings Incentive Plan (MSSIP) Agreement. This agreement includes the provision that "knowledgeable and competent third-parties" will "conduct compliance audits of the MSSIP rules and the Rolling Hotspot Closure program." The following report briefly describes the results of the compliance audit conducted by ABR, Inc.—Environmental Research and Services (hereafter, ABR) for the Mothership Fleet Cooperative (MFC) for the 2019 pollock fishing season. In 2019 the "A" season started on January 20th and the "B" season started June 10th.

ROLLING HOTSPOT CLOSURE PROGRAM

AUDIT METHODS

All vessels participating in the pollock fishery, including those in the MFC, have fisheries observers that provide haul deployment and retrieval times, catch weights for pollock, and bycatch numbers for Chinook and chum salmon. In addition, vessels are equipped with Vessel Monitoring System (VMS) units that transmit vessel locations periodically during the fishing seasons.

We received observed haul data, processed VMS locations, and closure documents from the Rolling Hotspot Closure (RHC) Manager. Haul data and VMS locations were derived from raw data obtained from the National Marine Fisheries Service. Closure polygons and Fleet-level closure dates were generated from the closure documents. To assess compliance with the RHC program, we examined the geospatial and temporal relationship between VMS locations, observed hauls, Vessel/Fleet assignments, and closure polygons. Intersections between closures (spatially, temporally, and according to Fleet membership) and VMS locations would indicate vessels fishing in a hotspot closure (or Chinook Conservation Area for all "A" season locations), and would constitute a violation of the RHC program.

To the extent possible, we reviewed the RHC Manager's calculations of rates and performance benchmarks, and the implementation of Bycatch Avoidance Areas.

RESULTS AND DISCUSSION

For the "A" season, we compared VMS locations during observed fishing activity against the Chinook Salmon Conservation Area and found no violations of the closure (Figure 1). Because this was not a rolling

closure, it falls under Rule 15 of the MSSIP, rather than Rule 14 (RHC program), but the analysis is similar so we report the results here.

We repeated this analysis for the other "A" season closure, and 10 "B" season closures identified in the documents from the RHC Manager and found no violations. No vessels were fishing inside a closure while the closure was in effect for their respective fleet. Figures 2–12 show the closures and vessel locations where all members of the fleet subject to the closure were fishing.

MOTHERSHIP SALMON SAVINGS INCENTIVE PLAN AGREEMENT RULES

AUDIT METHODS

We used 2019 MFC pollock allocation percentages, Vessel/Fleet Assignments, salmon bycatch data from the RHC Manager, and 2016–2018 credit data from previous audits of the MSSIP Agreement to assess compliance with MSSIP Agreement rules. There were no Mothership MSSIP Transfer Request forms used in 2019.

RESULTS AND DISCUSSION

We performed per-Vessel and per-Fleet calculations of Available Cap (Rule 1), Management Buffer Adjustment (2), Aggregation of Available Cap (3), Chinook Salmon Bycatch (4), Salmon Savings Credits (5), and Disaggregation of Remaining Available Cap (7) and concluded that these rules were applied appropriately. There was also a Change of Platform (11) done in accordance with the MSSIP Rules.

Rules 8, 9, 10, and 12 did not occur or did not apply in 2019, and the remaining rules required no calculations (6), or are already part of this report (14 and 15).

Rule 13 established a set of best management practices, including a provision for annual review of the previous year's performance. There were no reported violations of the best management practices.

Rule 16 allows for additional restrictions and penalties for vessels with consistently higher Chinook salmon bycatch than other vessels when the Mothership Sector exceeds its seasonal threshold for bycatch. This threshold was not reached, and no additional restrictions or penalties were applied.

CONCLUSIONS

ABR concludes that, based on the data available, 1) there were no violations of the Chinook Salmon Conservation Area, nor of the closures established as part of the Rolling Hotspot Closure Program, and 2) the rules established in the Mothership Salmon Savings Incentive Plan Agreement were followed, and Salmon Savings Credits were calculated in accordance with the Plan rules. We did not consider data sources beyond the Mothership Fleet Cooperative and the RHC Manager, but the concordance of the data between these sources supports the use of this information and our conclusion.

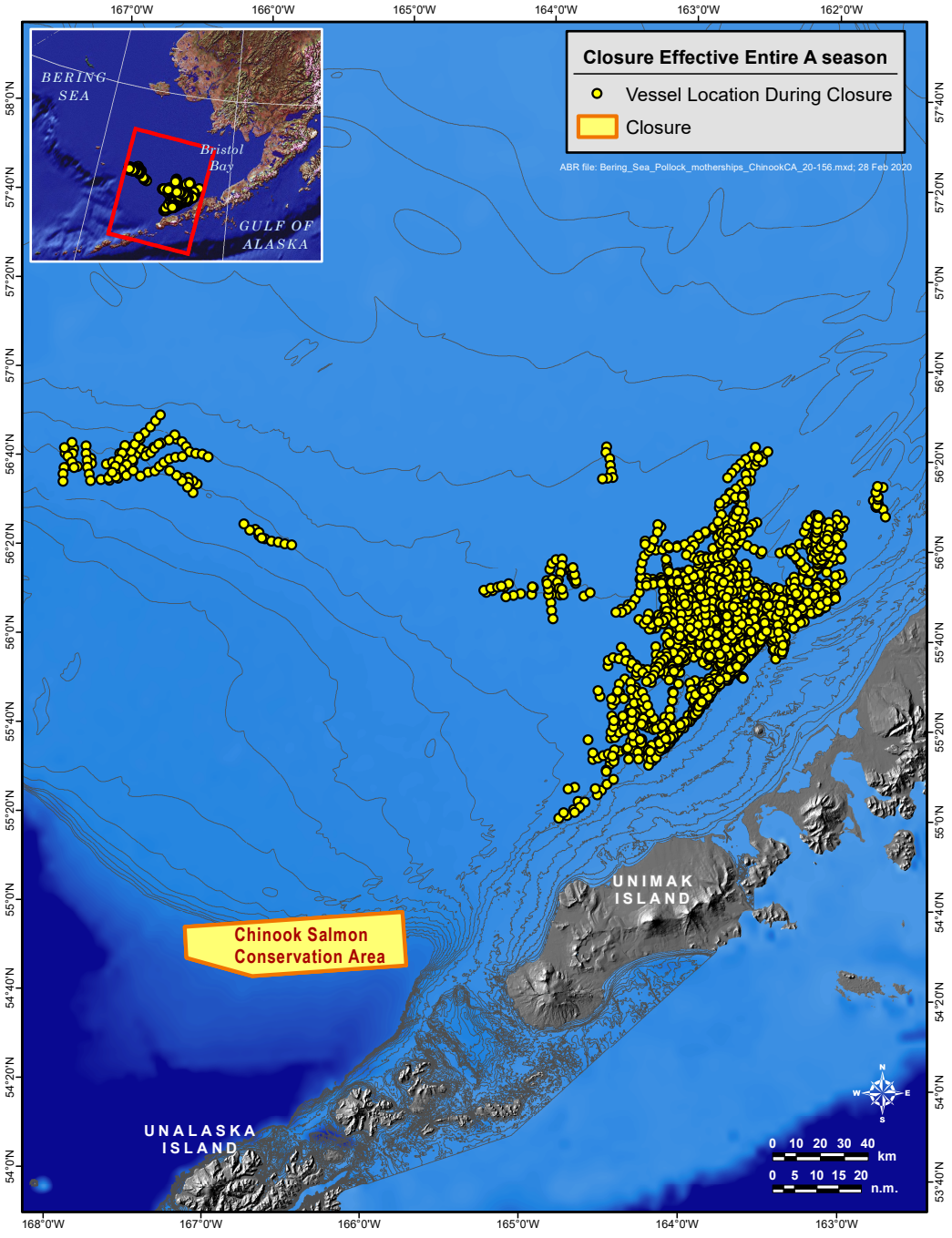

Figure 1. Chinook Salmon Conservation Area, "A" season closure, and vessel locations when fishing, Bering Sea, Alaska, 2019.

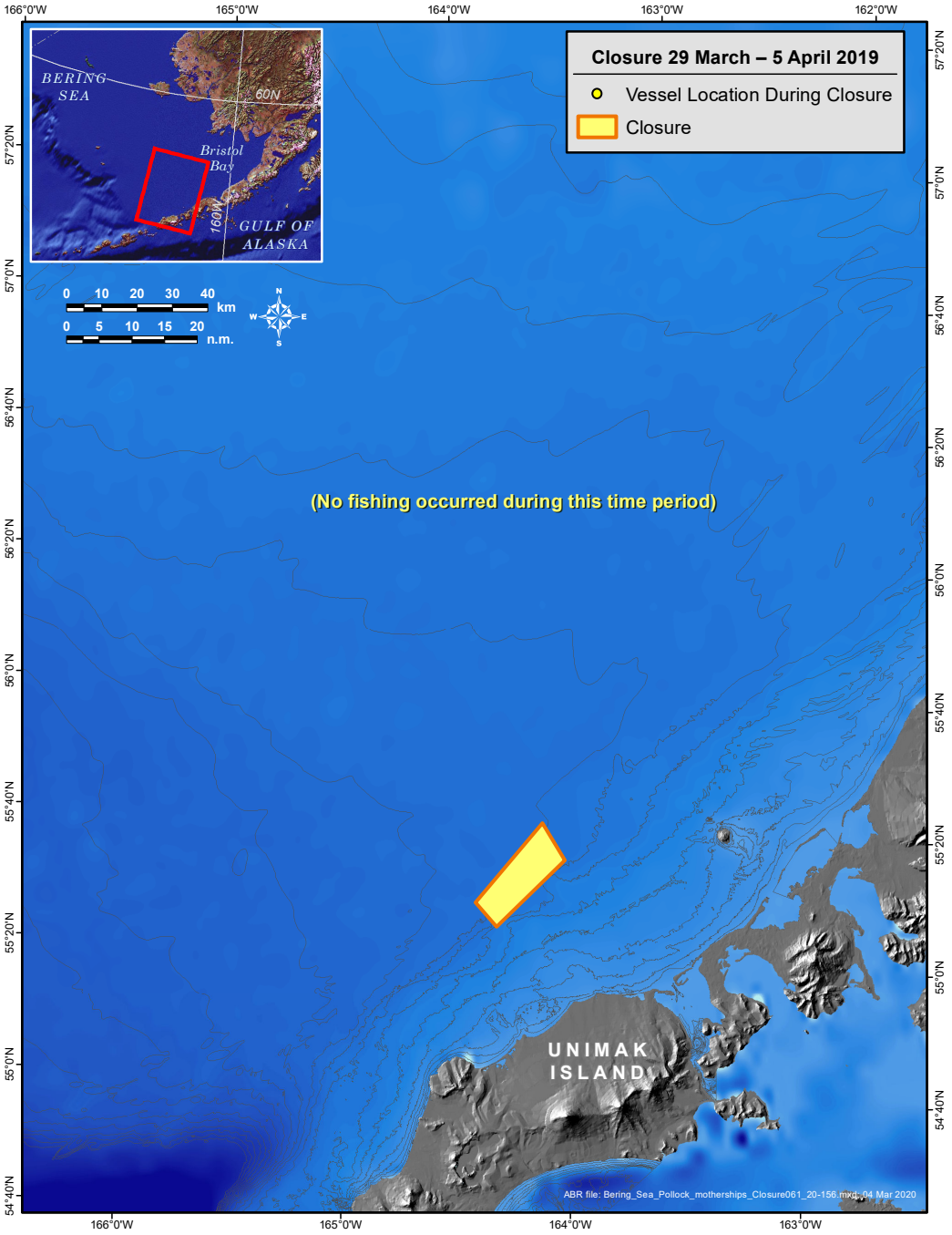

Figure 2. Rolling Hot Spot closures and vessel locations when fishing during closures, Bering Sea, Alaska, 29 March–5 April 2019. MS_IPA_032819.

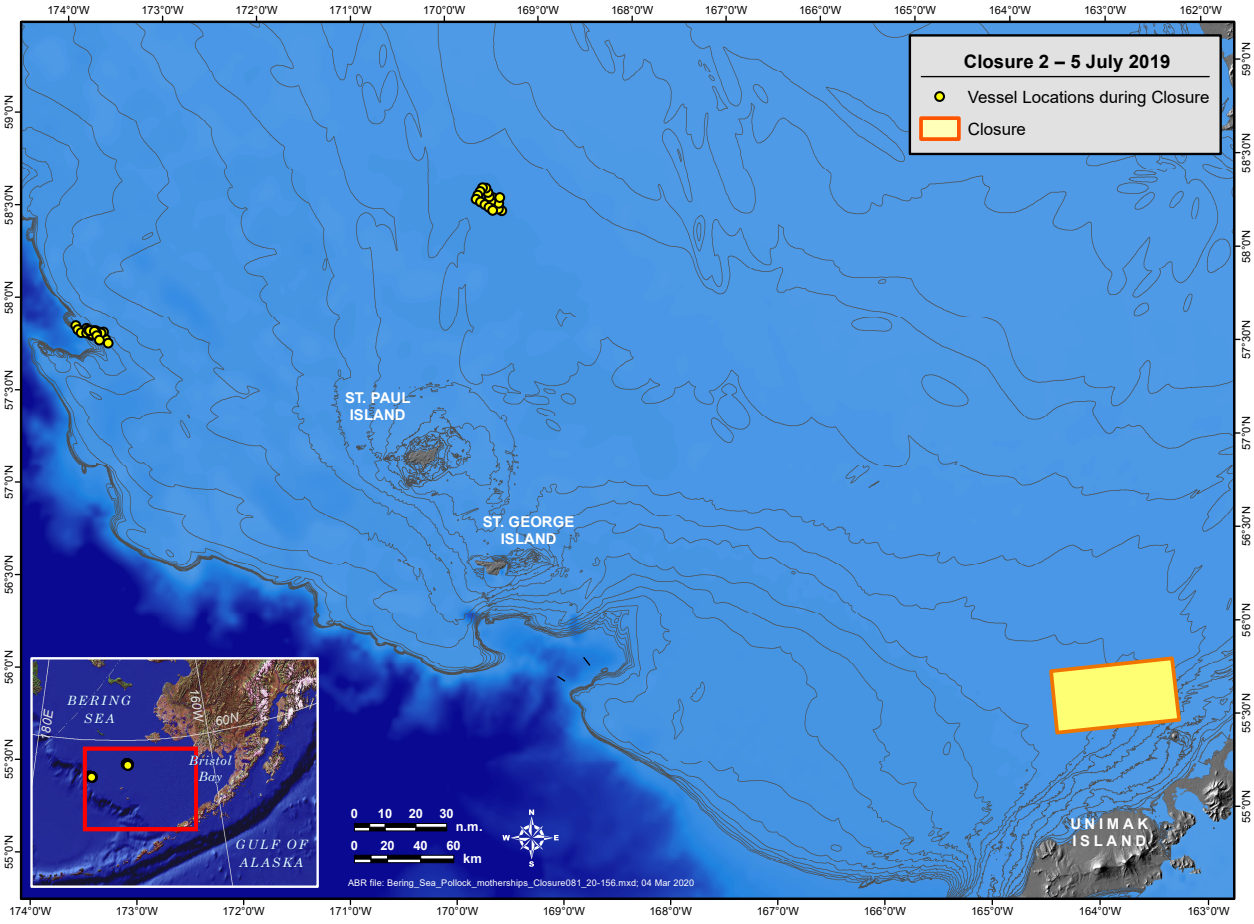

Figure 3. Rolling Hot Spot closures and vessel locations when fishing during closures, Bering Sea, Alaska, 2–5 July 2019. MS_IPA_070119.

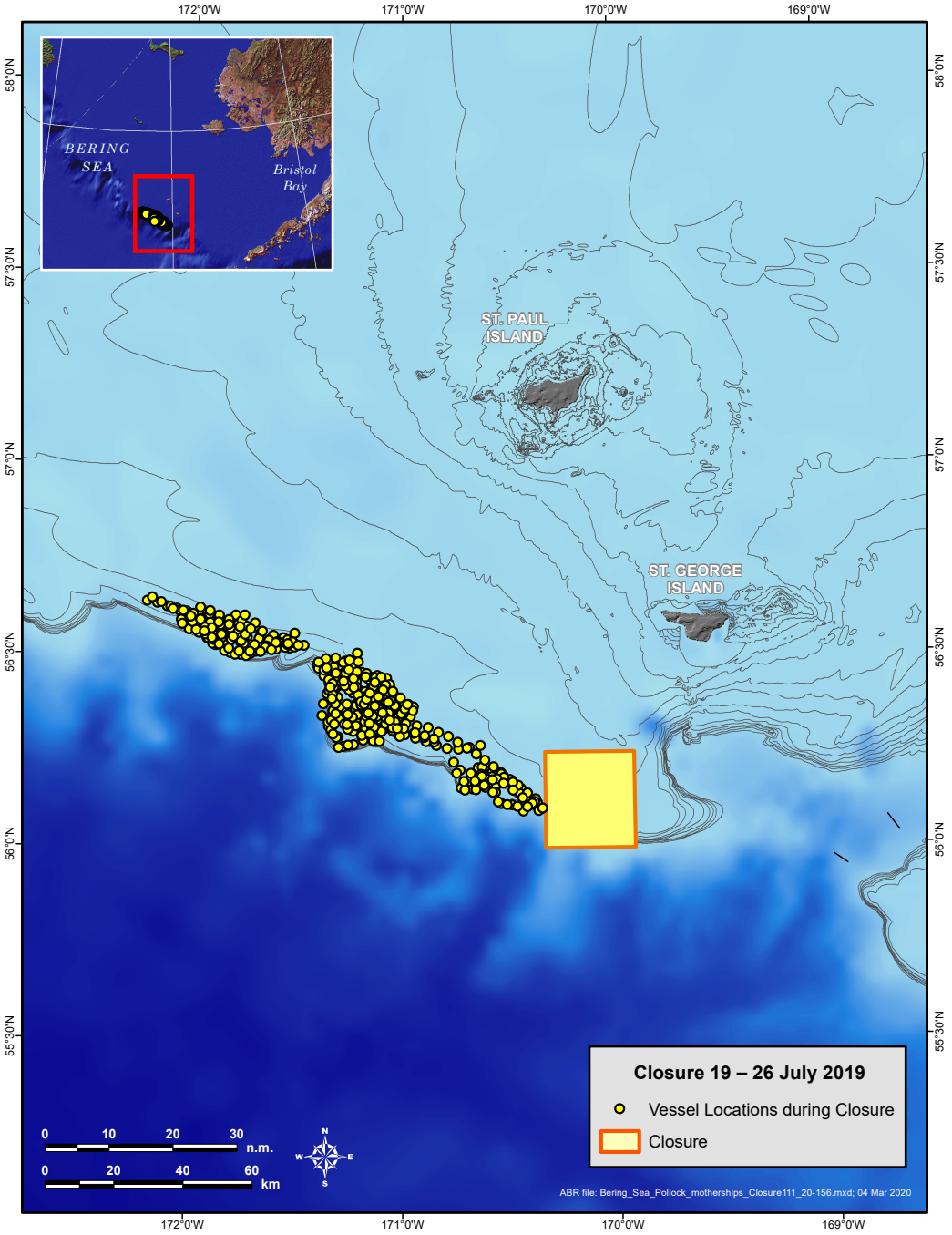

Figure 4. Rolling Hot Spot closures and vessel locations when fishing during closures, Bering Sea, Alaska, 19–26 July 2019. MS_IPA_071819.

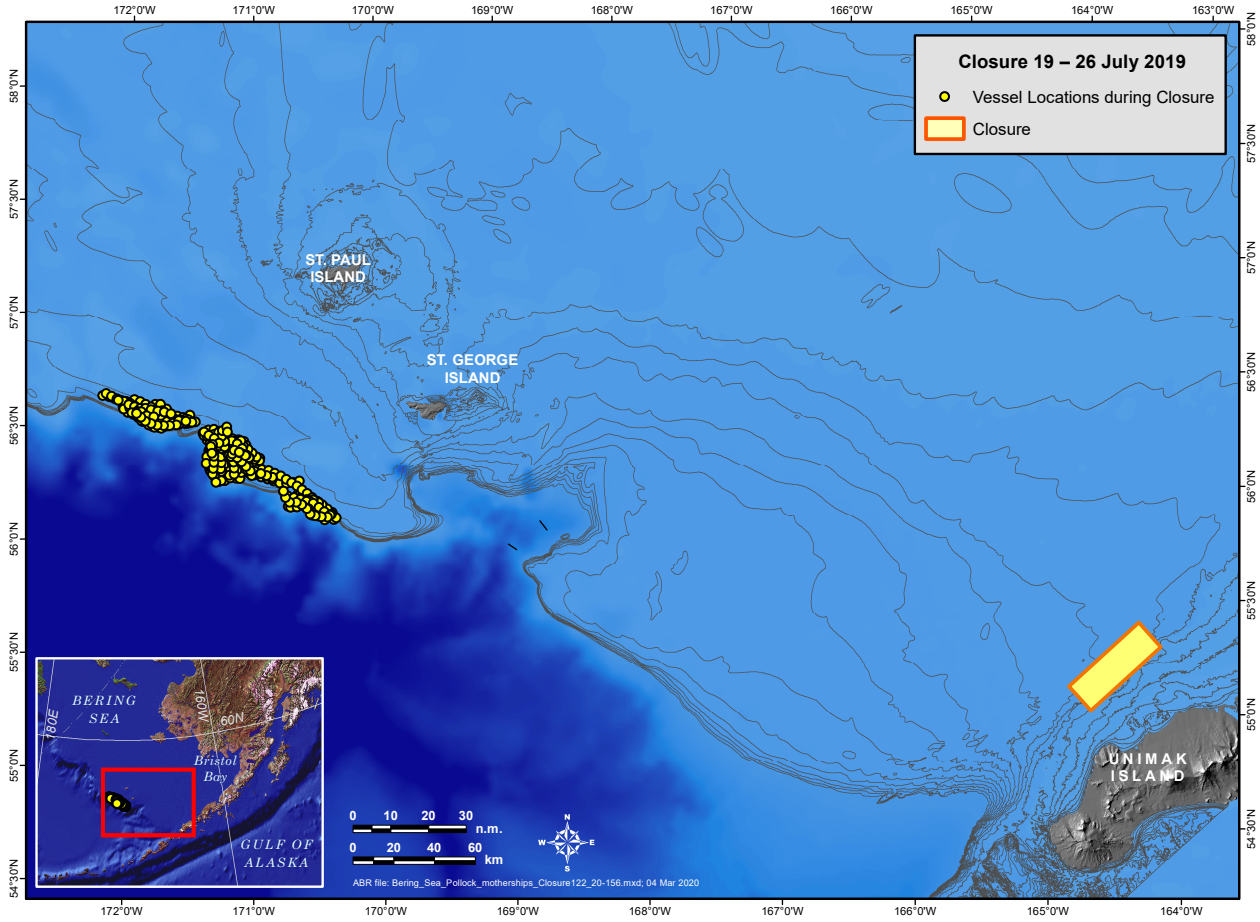

Figure 5. Rolling Hot Spot closures and vessel locations when fishing during closures, Bering Sea, Alaska, 19–26 July 2019. MS_IPA_071819.

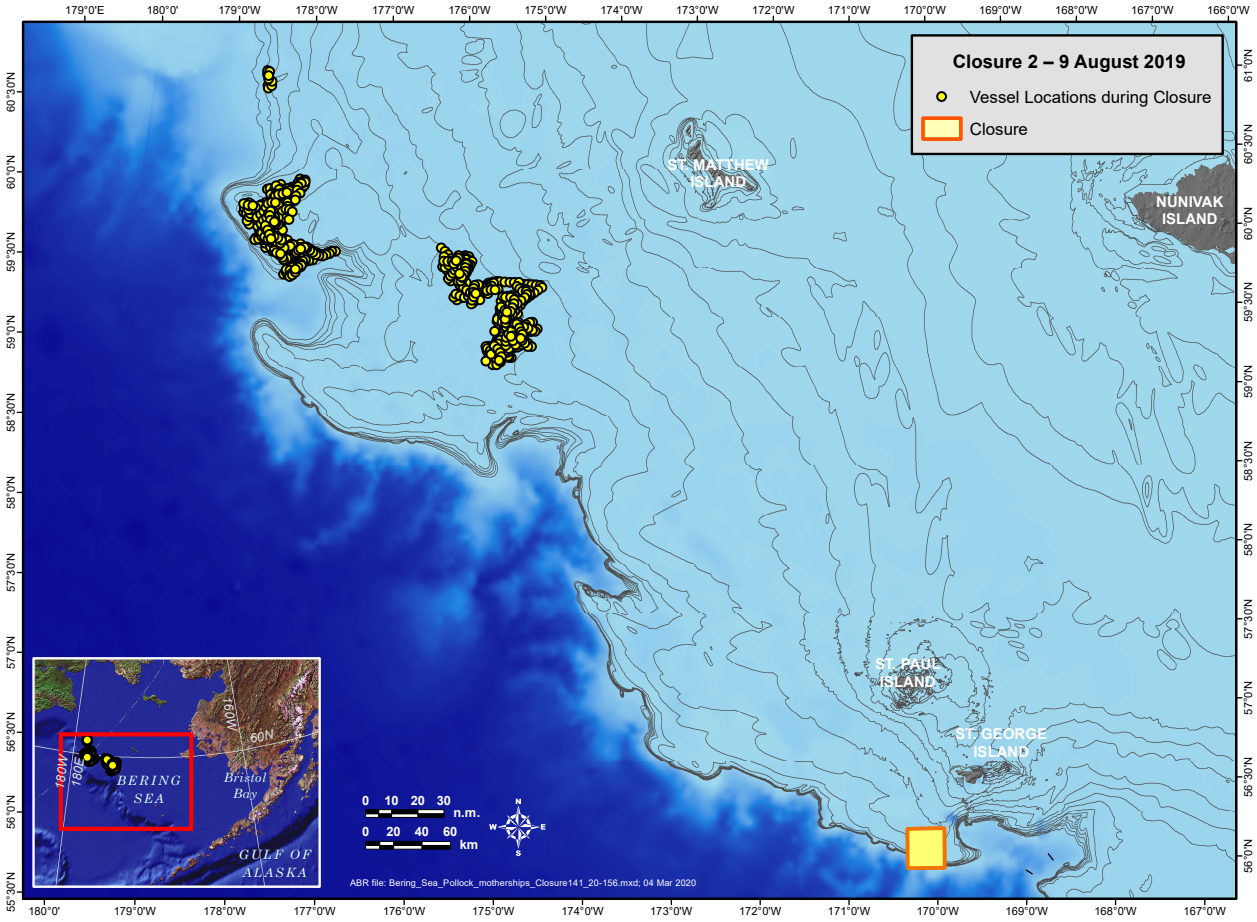

Figure 6. Rolling Hot Spot closures and vessel locations when fishing during closures, Bering Sea, Alaska, 2–9 August 2019. MS_IPA_080119.

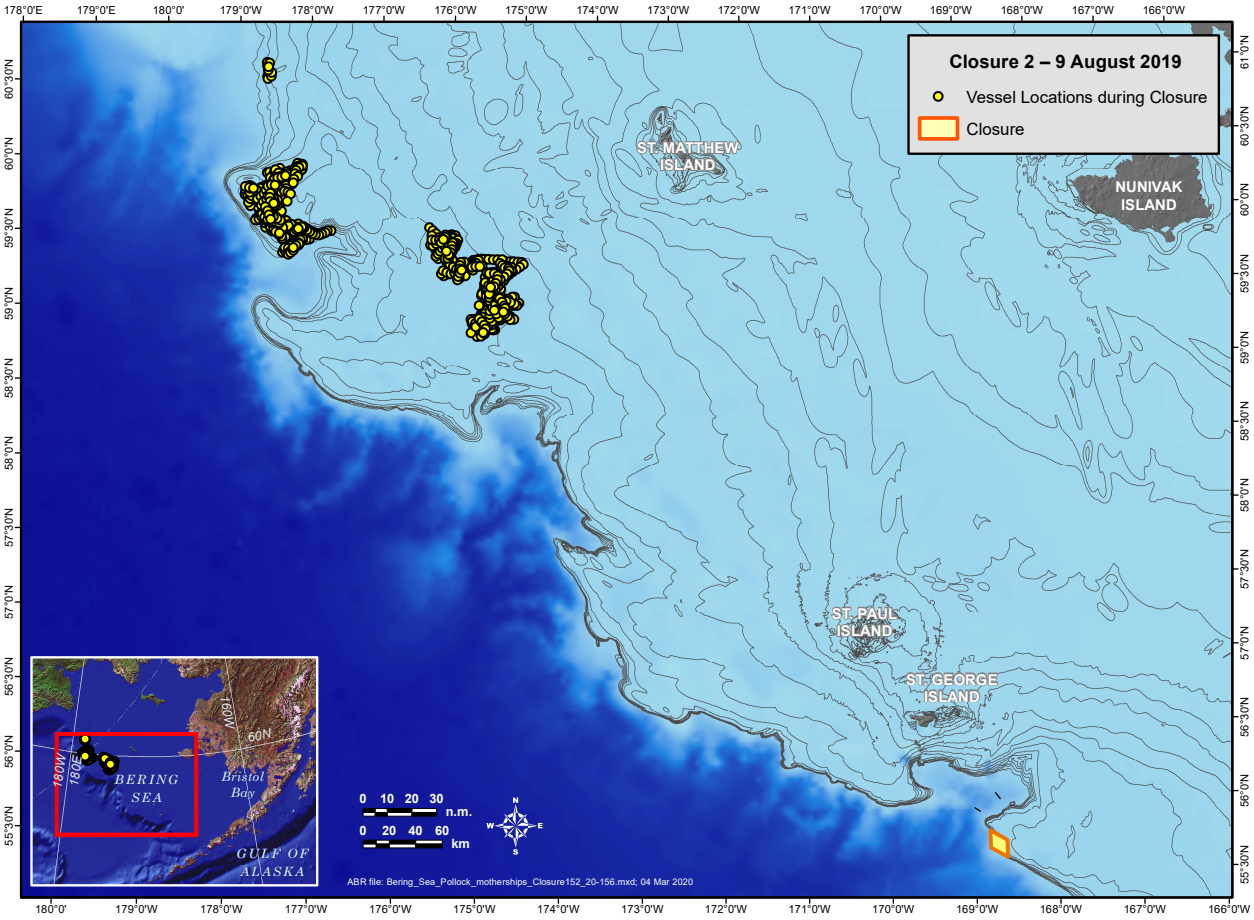

Figure 7. Rolling Hot Spot closures and vessel locations when fishing during closures, Bering Sea, Alaska, 2–9 August 2019. MS_IPA_080119.

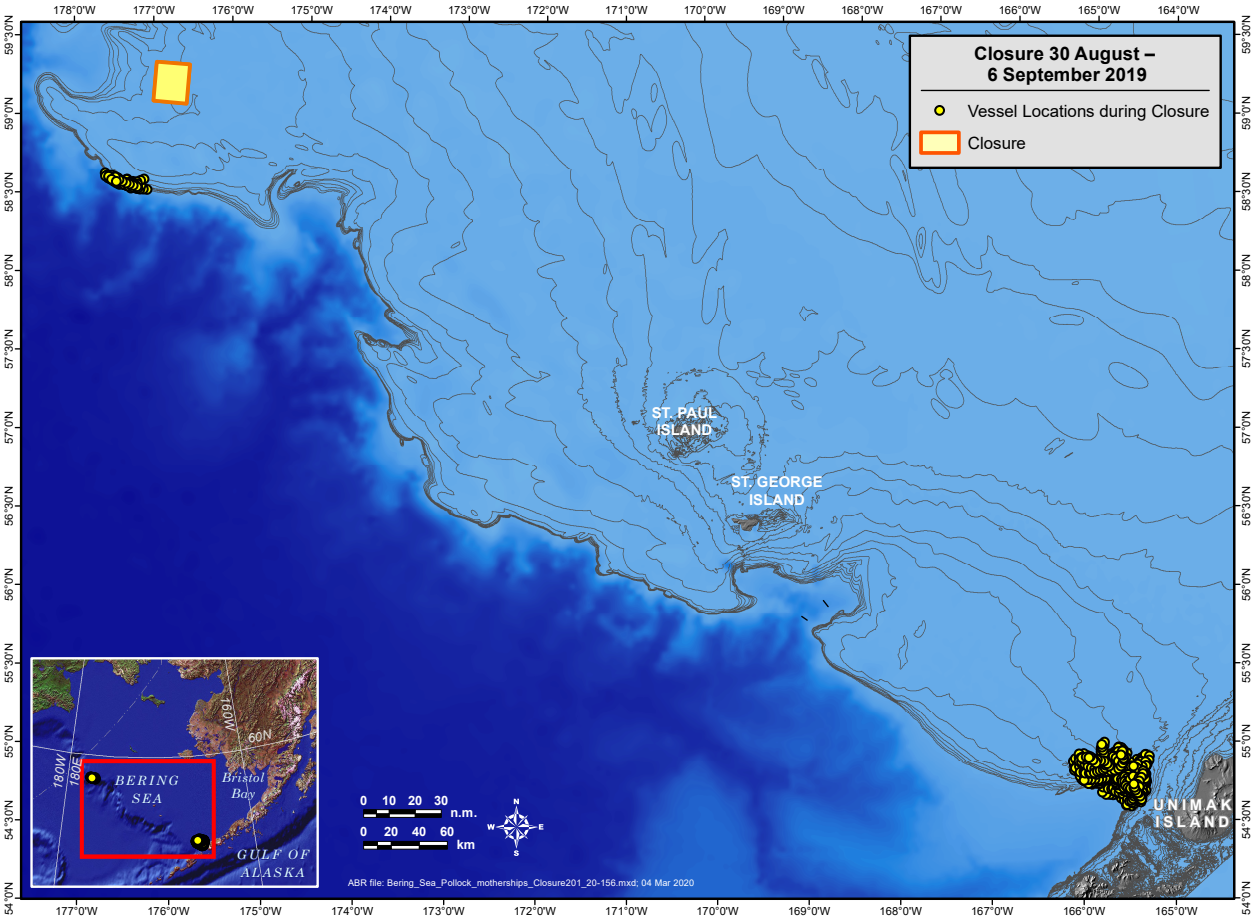

Figure 8. Rolling Hot Spot closures and vessel locations when fishing during closures, Bering Sea, Alaska, 30 August–6 September 2019. MS_IPA_082919.

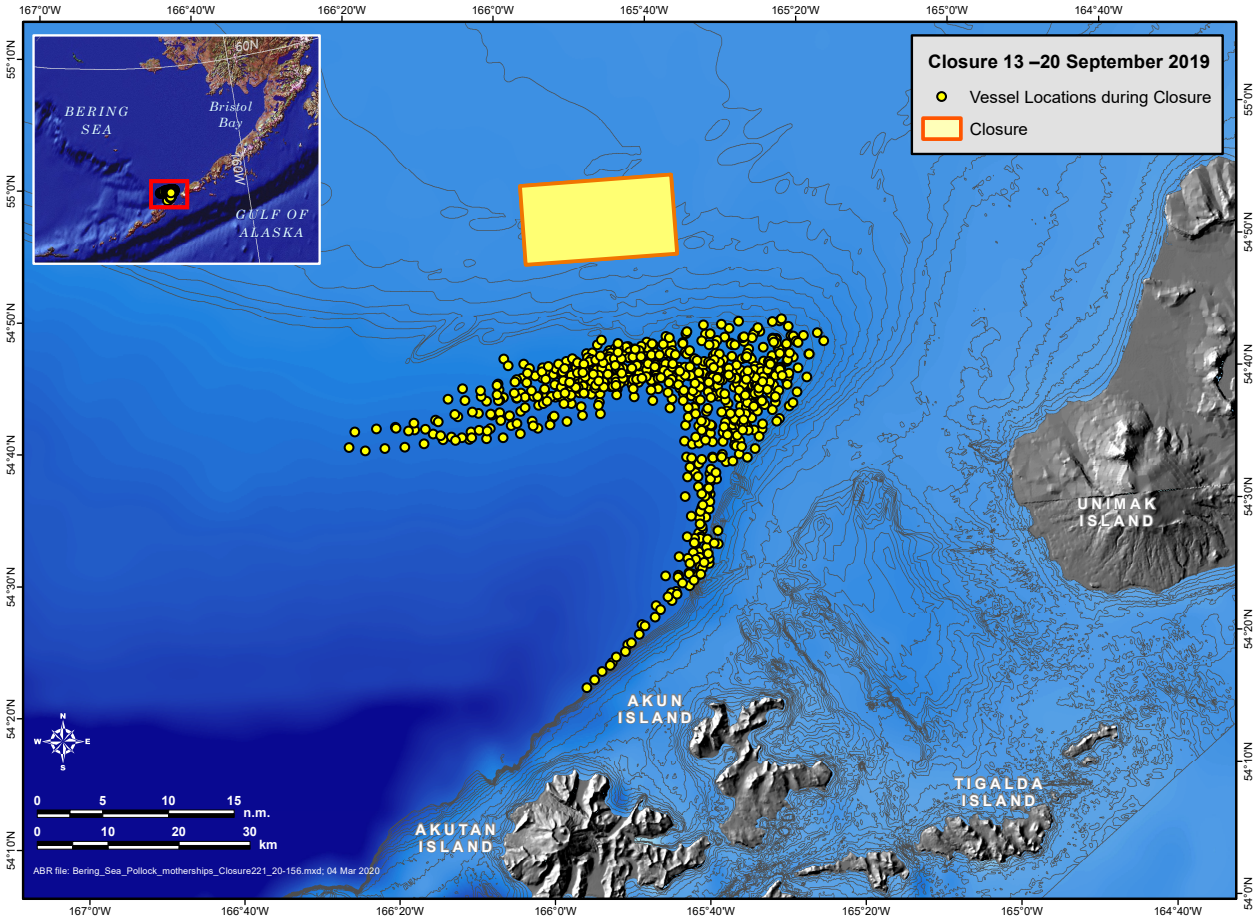

Figure 9. Rolling Hot Spot closures and vessel locations when fishing during closures, Bering Sea, Alaska, 13–20 September 2019. MS_IPA_091219.

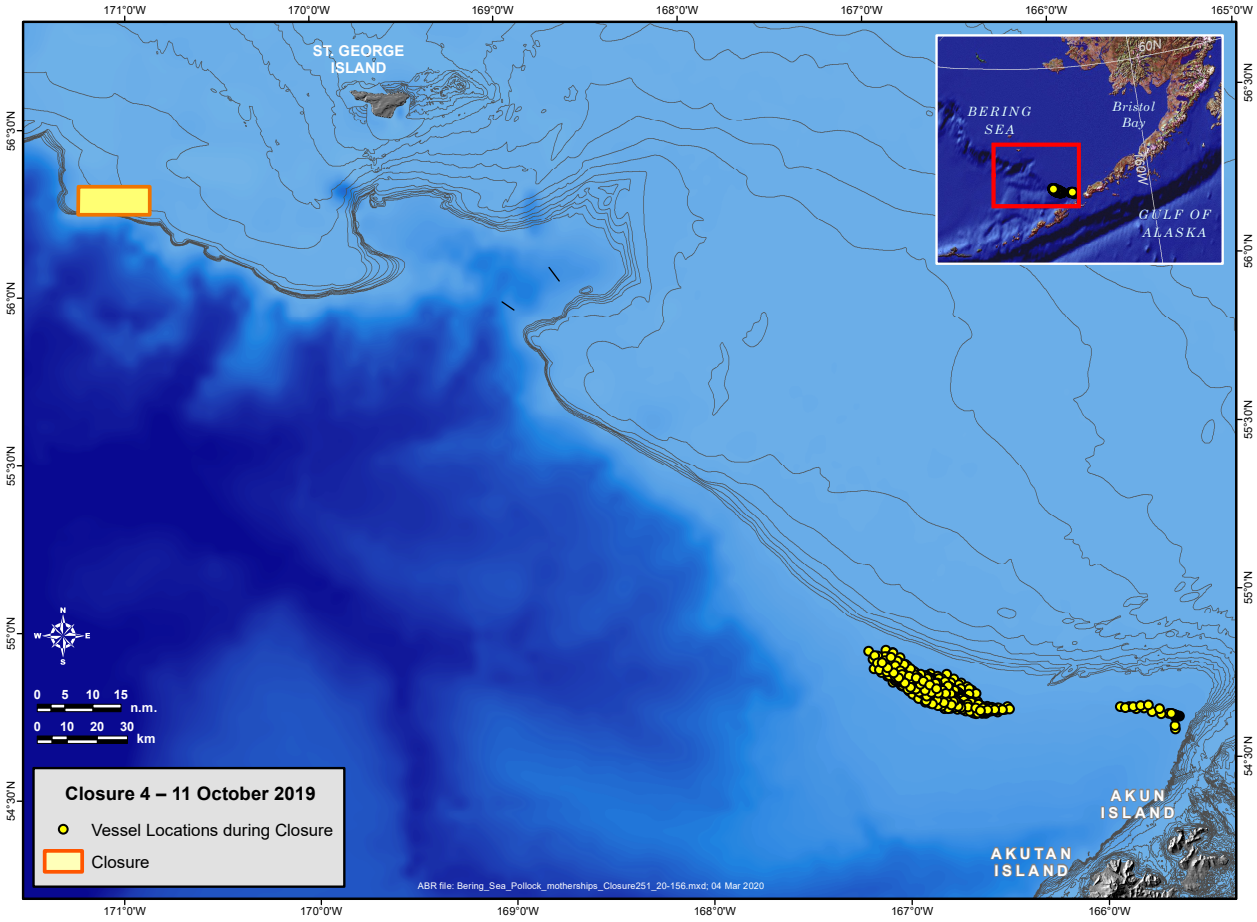

Figure 10. Rolling Hot Spot closures and vessel locations when fishing during closures, Bering Sea, Alaska, 4–11 October 2019. MS_IPA_100319.

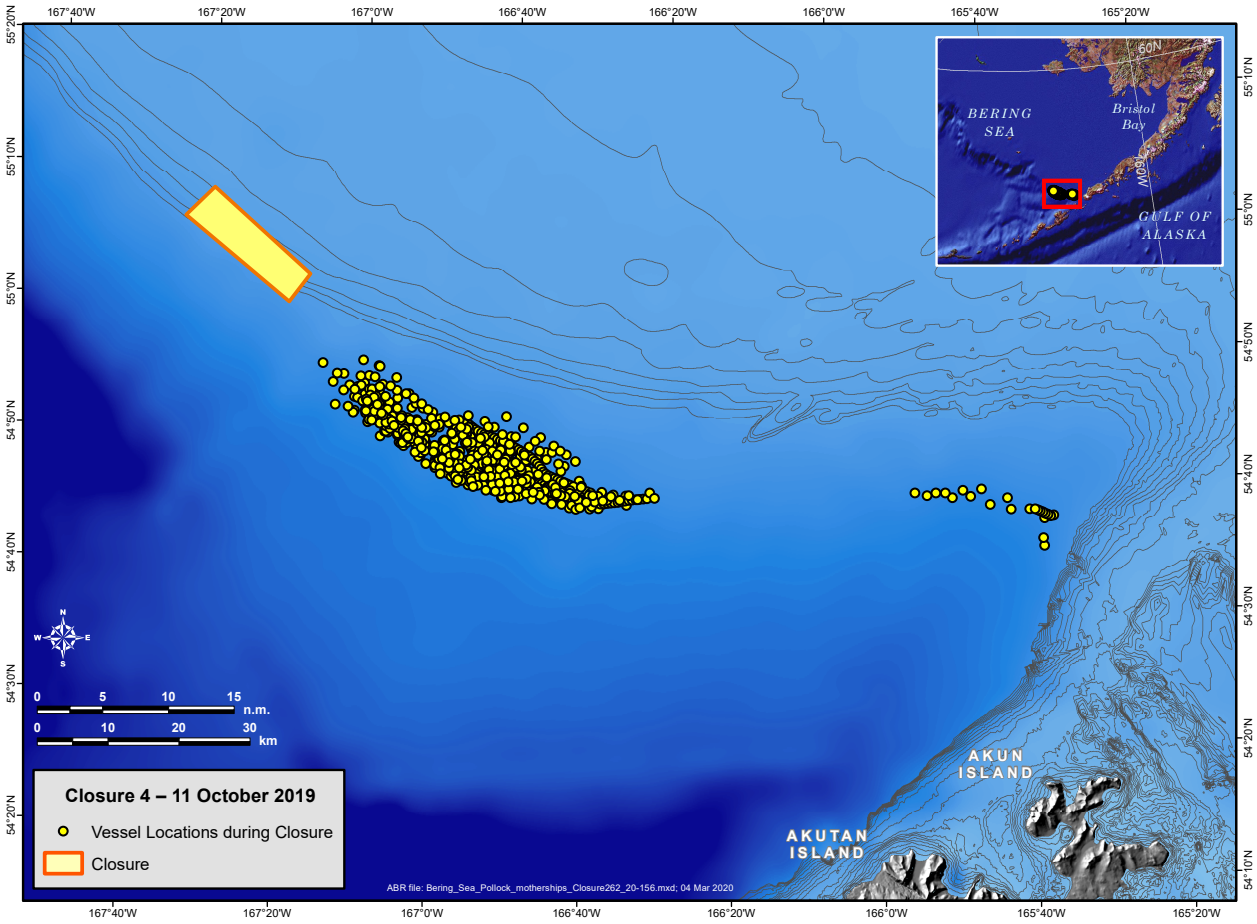

Figure 11. Rolling Hot Spot closures and vessel locations when fishing during closures, Bering Sea, Alaska, 4–11 October 2019. MS_IPA_100319.

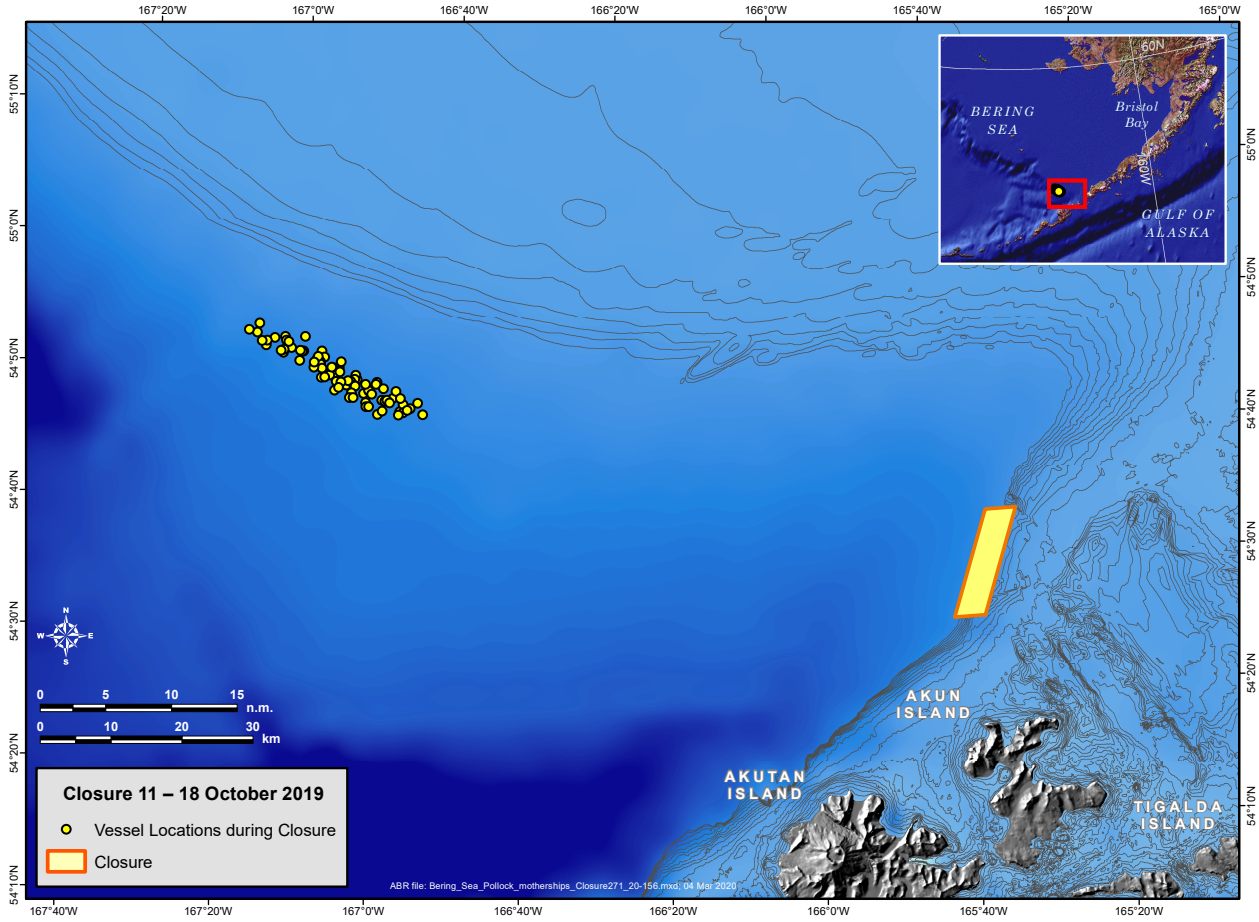

Figure 12. Rolling Hot Spot closures and vessel locations when fishing during closures, Bering Sea, Alaska, 11–18 October 2019. MS_IPA_101019.