Alaska Seafood Cooperative Report to the North Pacific Fishery Management Council for the 2015 Fishery

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ALASKA SEAFOOD COOPERATIVE

Wild Seafood Harvested Responsibly

Introduction

On September 14, 2007, the National Marine Fisheries Service (NMFS) published a final rule implementing Amendment 80 to the Fishery Management Plan for Groundfish of the Bering Sea and Aleutian Islands management area (BSAI). Amendment 80 provides specific groundfish and prohibited species catch (PSC) allocations to the non-American Fisheries Act (AFA) trawl catcher processor sector and allows the formation of cooperatives. Sector allocations and the formation of cooperatives were intended to assist in improving groundfish retention.

On January 20, 2008, the Alaska Seafood Cooperative (AKSC) began fishing Amendment 80 allocations. This report summarizes AKSC, its catch for the 2014 fishing year, the processes implemented to ensure that catch limits are not exceeded, and issues affecting AKSC members.

AKSC membership

During 2015, AKSC was comprised of the following five member companies, and sixteen non-AFA trawl catcher processors.

Company	Vessel	Length Overall
Fishermen's Finest, Inc.	American No. 1	160
	U.S. Intrepid	184
Iquique U.S., L.L.C.	Arica	186
	Cape Horn	158
	Rebecca Irene	140
	Unimak	184
Ocean Peace	Ocean Peace	219
	Seafisher	230
O'Hara Corporation	Constellation	165
	Defender	124
	Enterprise	124
United States Seafoods, LLC	Seafreeze Alaska	296
	Legacy[1]	132
	Alliance	107
	Ocean Alaska	107
	Vaerdal	124

[1] The Prosperity LLP is assigned to the Legacy.

Co-op management

AKSC activities are governed by a Board of Directors, which is appointed by AKSC Members (Members). Additionally, owners, captains, crew, and company personnel participate and provide input to the cooperative management process. The Members executed a cooperative agreement after extensive discussion and negotiation that outlines harvest strategies, harvest shares, and agreement compliance provisions. The agreement is amended as necessary to improve cooperative management of allocations and PSC, and to comply with regulatory programs.

The AKSC Manager is responsible for day-to-day cooperative management. This includes facilitating communication among the fleet, member companies, and AKSC staff; ensuring compliance with the AKSC agreement and regulatory programs; tracking the AKSC budget; coordinating Board meetings and AKSC activities; ensuring harvest shares are distributed in a timely and accurate manner; and managing the AKSC office and staff. The Manager also completes all cooperative reporting requirements in a timely manner, including applying for annual AKSC catch allocations. Finally, the Manager coordinates with other staff on research, protected species issues, and community outreach to provide catch and operational transparency.

AKSC also employs a full-time Data Manager. The Data Manager is responsible for tracking individual vessel catch and bycatch information relative to allocations; providing regular reports to the co-op; securely archiving data; identifying and resolving data errors; and working with the Alaska Region and Observer Program offices to ensure timely information streams. The Data Manager also provides Geographic Information System support and analysis as needed.

Finally, AKSC members employ Seastate, Inc., which assists as a third party in management activities. Seastate, Inc. is the direct observer data link for many of the processes and activities described in this document, specifically, identifying bycatch issues and tracking historic catch and bycatch trends.

Harvest strategy

AKSC has implemented several protocols and practices to maintain regulatory compliance and ensure allocations are not exceeded. These are described below.

Subsequent to receiving annual cooperative allocations, AKSC and Seastate, Inc. staffs calculate individual vessel harvest shares and PSC limits. For each internal harvest share and PSC allocation, a reserve is established so that AKSC has a buffer that will be reached prior to the allocation limit.

The AKSC agreement also establishes a mechanism for Members to transfer quota within the cooperative, and with other Amendment 80 cooperatives. These transfers must be approved by the AKSC Manager, and may be facilitated by AKSC staff.

Catch monitoring

AKSC receives data from several different sources. Generally, this includes total catch and species composition information from the North Pacific Groundfish Observer Program, Alaska Fisheries Science Center; total catch and species composition information from the Alaska Region; and production data from the Alaska Region. These data are used by NMFS to debit quota accounts and calculate groundfish retention.

The AKSC Data Manager receives observer data, which are archived in a database. The database allows the Data Manager to track various Amendment 80 quota accounts, bycatch amounts, catch of other non-Amendment 80 targets, and transfers among Members. The Data Manager uses the database to summarize catch information and distribute regular catch reports to vessels and AKSC members. The Data Manager also performs routine data quality checks on observer data, and resolves any discovered errors with individual vessels and NMFS.

NMFS Alaska Region quota catch information is provided to AKSC staff on a secure website. As noted above, this information constitutes official AKSC catch. As a quality control measure, the Data Manager compares these data with the corresponding observer data, and resolves discrepancies.

Each Member and AKSC staff have access to Seastate, Inc's secure website. This website provides vessel-level catch information for Amendment 80 quota species, GOA sideboarded species, and other species of interest. Additionally, the Seastate, Inc. website displays information on vessel and cooperative groundfish retention levels.

AKSC vessels submit daily production reports through a NMFS software program called Elandings. AKSC also collects this information to keep a running tally of vessels' groundfish retention through the Retention Compliance Standard (RCS). The RCS was developed in response to problems identified with the Groundfish Retention Standard (GRS), and is discussed further below.

Observer information is transmitted from the vessel, to the Observer Program Office at the Alaska Fisheries Science Center, then to the Alaska Region office. Data undergoes initial error checking, and individual observer sample amounts are expanded to total catch amounts.

By the time Alaska Region catch information is available to AKSC staff, company representatives, and vessel captains, it is one or two days old. To address this delay, companies have purchased software packages that expand raw observer sample data to total catch amounts,

and assign catch amounts to quota categories. These data expansions mirror NMFS algorithms that expand raw observer sampling data. This software allows vessel captains to analyze catch amounts on a real time basis, and make informed fishing decisions to maximize harvest amounts while minimizing the possibility of overages.

To help ensure accurate quota accounting and compliance, NMFS requires vessels to implement the following elements of an extensive catch management and monitoring package at their own expense:

- 200 percent observer coverage, nearly all hauls are sampled
- Motion-compensated observer scale
- Flow scale for weighing the entire catch
- No mixing of hauls
- No fish on the deck outside of the codend
- Only one conveyor line at the point the observer collects a sample
- Each vessel must be certified to maintain one of three bin monitoring options
- Designated observer sampling station
- Vessel Monitoring System

The above measures are designed to improve data quality. High quality catch estimates are important to AKSC members and provide increased confidence in NMFS management information, thus facilitating intra-cooperative trades and quota management.

In addition to these extensive monitoring requirements, AKSC vessels and companies comply with recordkeeping and reporting regulations. While recordkeeping and reporting requirements are complex and create a significant burden to vessel captains and company representatives, these efforts create an authoritative, timely, and unambiguous record of quota harvested.

The Environmental Assessment/Regulatory Impact Review/Final Regulatory Flexibility Analysis prepared for regulations implementing Amendment 80 indicates that monitoring and catch accounting challenges are greater and more complex than other quota programs. To address these challenges and ensure quota limits are not exceeded, NMFS has required, and AKSC vessels have implemented, the extensive and expensive monitoring program described above.

GOA sideboard management

Regulations limit Amendment 80 vessels to historic catch levels by establishing sideboard amounts for several species. To help manage GOA sideboard fisheries, AKSC established a

GOA fishing plan. The 2015 GOA fishing plan described management measures AKSC utilized to limit individual vessels to historic halibut PSC levels.

2015 AKSC Catch

The following tables provide AKSC catch. All data is rounded to the nearest whole number for simplicity. ***AKSC catch during the 2015 fishing year fell within allocation levels, and no overages occurred.*** It's important to understand that fishing behavior and catch amounts under any given year of cooperative operations may not reflect those of other years.

AKSC initially apportions its annual NMFS-issued allocation to individual companies or vessels. Subsequently, AKSC companies are able to engage in transfers with other AKSC companies or vessels to maximize harvesting efficiencies. Additionally, AKSC engaged in trades with another Amendment 80 cooperative. Because allocations are managed under hard caps, some portion of each of AKSC's allocations will be left unharvested to serve as a buffer prior to reaching allocation amounts.

Bering Sea and Aleutian Islands AKSC Allocated Quota and Catch Amounts

Species	Initial AKSC A80 Allocation (mt)	AKSC A80 Allocation with rollovers and transfers (mt)	AKSC Catch (mt)
Cod	25,135	26,687	22,778
Yellowfin Sole	67,437	92,524	81,944
Rock Sole	40,522	38,049	33,922
Flathead Sole	14,947	8,864	7,069
POP 541	2,978	2,898	2,874
POP 542	2,611	2,606	2,594
POP 543	3,695	3,690	3,674
Mackerel 541	9,080	9,465	9,380
Mackerel 542	5,479	5,479	5,457
Mackerel 543	3,594	3,594	3,575

Bering Sea and Aleutian Islands AKSC PSC Limits and Catch Amounts

Species	Initial AKSC A80 Allocation (mt)	AKSC A80 Allocation with rollovers and transfers (mt)	AKSC Catch
Halibut Mortality (mt)	1,693	1,702	1,179
King Crab Z1 (#)	30,834	31,032	7,362
Bairdi Z1 (#)	271,542	273,278	54,063
Bairdi Z2 (#)	465,879	468,776	152,630
COBLZ Opilio (#)	3,311,730	3,350,098	272,723

Bering Sea and Aleutian Islands Salmon Catch Amounts

Species	AKSC Catch (#s)
Chinook	3,468
Non-Chinook	3,742

Notes: Salmon are reported as individual fish. Salmon numbers are estimated from basket sample extrapolations, and are not a census.

Retention Compliance Standard

Amendment 79, also known as the Groundfish Retention Standard or GRS, was implemented simultaneously with Amendment 80 in 2008. The GRS required the cooperative to annually improve groundfish retention over the course of several years from 65% in 2008 to 85% in 2011 and beyond.

Soon after the adoption of the GRS, the Council repealed the GRS because of problems of enforceability and a mismatch between the analysis used to establish the GRS and the metrics used to estimate retention under the GRS. Simultaneously, at the request of the Council, AKSC substituted an internal monitoring system known as the Retention Compliance Standard (RCS) for the GRS program.

The RCS is implemented through a civil contract with substantial non-compliance fines, and an annual third party audit report. The RCS agreement, including the calculation methodology, and the third part audit are appended to this report.

Since 2008, AKSC has exceeded Council retention expectations, and annual RCS-measured retention has consistently exceeded 90%. ***The RCS required a 2015 groundfish retention of 85 percent; AKSC achieved a groundfish retention of 93.8%.***

Flatfish Flexibility

On September 23, 2014, NMFS issued a final rule that allows each cooperative and CDQ group to have access to a portion of the difference between each Amendment 80 flatfish species ABC and TAC, which can be used to trade allocated quota of one species for quota of another with NMFS. NMFS distributes specific percentages of the available surplus to each eligible group (co-op/CDQ) to prevent ABCs from being exceeded. By equally trading one flatfish quota for another, the 2 million mt OY cap would also not be exceeded.

We believe a flexible approach to flatfish harvests will increase opportunities for reducing PSC by increasing providing increased choice in targeting. The flexibility to make quota conversions will afford vessels the opportunity to move among the different flatfish targets, as long as the vessel holds adequate quota for any of the three included flatfish species.

The following table shows 2015 AKSC flatfish exchanges. Note that exchanges will vary from year to year depending on allocation amounts and environmental variability. For example, vessel captains encountered high halibut rates and sparse target aggregations during the 2015 rock sole and flathead sole fisheries. Consequently, companies were able to utilize flatfish flexibility regulations to shift quota from rock sole and flathead sole to yellowfin sole. However, during colder years or when deck sorting is available during the rock sole season, captains may choose to shift yellowfin sole or flathead sole to rock sole.

Exchange date	Rock sole (mt)	Flathead sole (mt)	Yellowfin sole (mt)
9/28/2015	-1,450	-5,620	7,070
10/27/2015	-1,350	-600	1,950
Total	-2,800	-6,220	9,020

Reducing Halibut PSC

In 2014, the State of Alaska proposed an emergency action to increase the 2015 FCEY in the Area 4CDE halibut fishery. The action was proposed to support a 1 million net pound directed fishery for that area. The Alaska Seafood Cooperative (AKSC) considered the magnitude of halibut mortality reduction needed to achieve this catch limit, and set itself a goal of reducing its halibut usage by at least 217 mt from its 2014 halibut usage. This amount is the cooperative's proportional share of the reduction in overall halibut usage needed to support the 1 million net pound 4CDE directed fishery. This reduction is equivalent to the cooperative maintaining halibut usage at or below 1,101 mt in Area 4CDE for 2015. In addition, the cooperative also sought to maintain Area 4A and 4B catches at or below their historical levels. The following table briefly summarizes the calculations that defined the cooperative's bycatch reduction.

Area 4CDE halibut mortality reduction to reach a 1 million net pound fishery in Area 4CDE

Total 2014 - 4CDE halibut bycatch mortality	2,753
AKSC 2014 - 4CDE halibut bycatch mortality	1,319
AKSC share of halibut mortality in Area 4CDE	47.9%
Total mortality savings for 1 million pound 4CDE halibut fishery	454
AKSC share of 4CDE reduction based on usage	**217**

AKSC monitored its vessels' halibut bycatch continuously. Seastate alarms were used to track high bycatch as soon as it was recorded. AKSC also prepared fleet reports twice a week to ensure that all cooperative members were aware of overall performance and changes in conditions. Throughout the year, the cooperative compared its groundfish catch and halibut usage to prior years to gauge its performance relative to the Area 4CDE reduction and for examining halibut usage overall. Although rates fluctuated, at all times, AKSC was on track to maintain bycatch at or below 1,101 mt Area 4CDE target and came in at 1,060 mt of halibut mortality in 2015.

In addition to attaining its Area 4CDE reduction, the cooperative was successful in maintaining its halibut usage in Areas 4A and 4B well below their historical averages. In defining its halibut bycatch reductions for the year, the cooperative not only targeted reductions for Area 4CDE, but also sought to avoid increasing its halibut usage in Areas 4A and 4B. The cooperative's 2015 use of halibut in Areas 4A and 4B was 119 mt compared to the 326 mt that the cooperative averaged from 2008 to 2014.

The following table shows 2015 AKSC halibut use in halibut management Area 4CDE in 2014 and 2015:

Area	Year	Halibut mortality (mt)	Target maximum usage (mt)	Target maximum usage remaining (mt)	Percent of target maximum usage remaining
4CDE	2014	1,319	-	-	-
	2015	1,060	1,101	41	4%

As the year end has approached, we enhanced our monitoring by setting internal rate goals and monthly usage goals based on historical trends to improve the chances of reaching the goal.

During the fourth quarter, target species tend to disaggregate, and halibut tend to move into the fishing grounds. With these changes, added attention to performance was appropriate to ensure that the fleet attains the bycatch reduction goal. The cooperative benefited from unusually good weather and low halibut bycatch rates throughout October. Storms in November dispersed schools of yellowfin, making halibut avoidance more challenging. Despite these challenges, the cooperative maintained its best fourth quarter halibut rates since its formation.

Halibut bycatch reduction tools utilized during 2015

AKSC utilized a suite of bycatch tools to reduce halibut mortality. These were described in documents presented to the Council several times during 2015. Cooperative members were able to minimize halibut usage through a variety of halibut avoidance measures, including choices of fishing location and time of day, excluders, and deck sorting. Principal to these halibut avoidance measures was active communication among captains on the grounds. The effectiveness of the various halibut avoidance measures changes with fishery conditions. On the grounds communications kept captains well-informed of successful PSC avoidance strategies allowing them to cope with the continuously changing conditions and effectiveness of the various halibut avoidance tools.

The cooperative supplemented these on the grounds communications with weekly meetings of company representatives and vessels captains. The review of weekly halibut performance reports led to discussion of the conditions on the grounds, and the effectiveness of halibut avoidance measures. The meetings typically covered halibut mortality rates, target species, excluder effectiveness, halibut movement, fishing depths, and bottom temperatures in the areas being fished by cooperative members. The cooperative distributed summaries of the meeting discussions to all members (including those unable to attend) on the day of the meeting.

Cooperative staff and company managers monitored individual vessel halibut performance through Seastate. Monitoring was conducted through regular checks on overall cooperative, as well as company and vessel, performance. In addition, the Seastate alarm system was used, which notified a user when a user-defined rate or catch threshold was exceeded in a defined period (such as a tow or day). Alarms can be programed to include a map that shows tow location, halibut rate, halibut mortality, target species, and other information that can be useful for assisting with the halibut avoidance efforts of vessels and the cooperative, as a whole.

During the season, vessels experimented with new designs of excluders and tuned existing designs with a variety of modifications. These modifications improved excluder effectiveness by increasing the exclusion of halibut and decreasing loss of target catch. For example, captains reported incorporating “kites”, typically comprised of panels of canvas tied into sections of the mesh designed to lift out and slow down the flow at the aft section of the excluder device. With the addition of kites, target species were better able to swim through the inner panels of the excluder and into the codend reducing loss of target species catch. These improvements allowed

vessels to use excluders with lower loss of target fish and avoiding the need to tow longer. With a more effective excluder, fishermen were also able to expand their use of excluders into new fisheries, as the effectiveness of excluders increased halibut avoidance in a larger range of conditions and fisheries. Excluder effectiveness varies across fisheries and vessels with both conditions, vessel and net characteristics, and operating practices. As a result, individual experimentation with operations and configuration is needed to get the greatest return from an excluder. Vessels anticipate continuing excluder development in the coming year and additional modifications will be made to further reduce losses of target catch.

Deck sorting to reduce halibut mortality in 2015

AKSC has invested heavily in development of deck sorting as a halibut mortality reduction tool. Vessels participating in the 2015 halibut deck sorting EFP were able to achieve significant mortality savings. The 2015 EFP expanded on earlier work by conducting the EFP in a wider range of flatfish fisheries than in earlier EFP tests. Specifically, a large amount of EFP activity occurred in the yellowfin sole fishery on both small and the large vessels. Yellowfin is the most significant flatfish fishery by catch volume, vessel participation, and annual total value. Because of the high catch volume and low halibut rates in the fishery, deck sorting was generally expected to be unworkable. This year, however, vessels sorted as many halibut as possible within 20 minutes or less, which resulted in significant halibut savings in yellowfin target fishery relative to the standard mortality rate applied in the fishery of 83 percent.

Nine of the fourteen active AKSC vessels this year participated in the deck sorting EFP at one point or another. All but one of the vessels achieved mortality rates in the range of 41 percent to 53 percent. The table below shows EFP performance by vessel through November 16th. Halibut savings under the EFP is estimated by comparing the EFP mortality with an average flatfish mortality rate in all flatfish fisheries of 80 percent – the rate that would have occurred under normal fish handling procedures without deck sorting.

One EFP participant had somewhat higher halibut mortality rates. The vessel's deck layout, factory capacity, and stern tank size all limited the ability of the vessel to adopt the necessary modified catch handling procedures. These limitations allowed the vessel to sort halibut from only a relatively small fraction of each haul. In spite of this, the vessel was still able to reduce mortality rates relative to the standard rates in the flatfish fisheries. Accordingly, the vessel only made seven EFP tows in 2015. Modifications are probably needed to achieve success similar to the other EFP vessels.

Vessel	Length (ft)	Grounfish (mt)	Halibut catch (mt)	EFP mortality (mt)	EFP mortality rate	IPHC mortality (mt)*	Net savings (mt)	Dates in EFP
Constellation	165	7,671	116.9	58.5	50%	93.5	35	May 24-July 4: July 17-Oct 24
Legacy	132	794	22.2	9.1	41%	17.8	8.7	May 16-June 4
Arica	186	10,925	136.6	65.9	48%	109.3	43.4	June 9-Nov 16
Cape Horn	158	5,586	74.2	34.3	46%	59.4	25.1	June 3-July 26; Sept 14-Nov 6
Rebecca Irene	140	921	14.9	6.4	43%	11.9	5.5	July 20-Sept 2
Defender	124	5,153	65.4	34.2	52%	52.3	18.1	June 22-Oct 16
Unimak	184	3,656	21.8	10.9	50%	17.4	6.5	Aug 29-Oct 11
Ocean Peace	219	1,293	25.3	11.8	47%	20.2	8.4	Aug 12-Sept 2
Enterprise	124	159	0.2	0.1	70%	0.2	0	Sept 17-Sept 19
Total		**36,158**	**477.5**	**231.3**	**48%**	**382**	**150.8**	

Based on experience from the 2015 and previous deck sorting EFPs, deck sorting has the potential to allow for significant halibut mortality savings. However, several significant administrative barriers need to be resolved prior to regulatory implementation. These include development of a monitoring and catch accounting program that is cost effective, pragmatic, provides high quality management data, and provides the necessary incentives for careful handling. AKSC is in the process of applying for a 2016 EFP which includes participation of the Alaska Groundfish Cooperative, CDQ, and catcher processors and motherships operating in the TLAS program. The design of the 2016 EFP should address many of the remaining issues associated with implementation and we hope to have a regulatory program available for all non-pelagic catcher-processor trawl vessels in 2017.

Operational impacts of halibut bycatch reduction efforts

Efforts to reduce halibut mortality have come with substantial impacts to vessel operations that ultimately reduce efficiency and increase operating costs. For example, increased use of excluders not only reduced target catch but also increased drag and fuel consumption. Test tows used to determine halibut bycatch rates in an area and smaller tows used to allow for improved survival of deck sorted halibut also increase fishing time and fuel consumption. When higher rates of halibut were encountered, transit necessary to avoid halibut increases fuel consumption and increases trip length, ultimately reducing fishing time and fishery harvest.

Some of the operational impacts are quantifiable by comparing 2015 catches in flatfish targets with prior years under the Amendment 80 program. The following table shows AKSC flatfish and halibut catches and tow information through from 2008 through 2014 on average and in 2015. The 2015 flatfish catches are the lowest since implementation of Amendment 80. This amount is a reduction of almost 17 percent from the average from 2008 to 2014. While some of this reduction was made up in other fisheries that have lower halibut bycatch rates, such as Atka mackerel and Pacific Ocean perch, these losses in catch and the ability to mitigate losses are not equally distributed throughout the cooperative. Some companies had little ability to mitigate losses by increasing participation in other fisheries.

These increases in operational impacts are reflected in the number of tows and small tows (defined here as less than 10 mt) that vessels took in 2015. The total number of tows taken by vessels in the cooperative increased almost 10 percent from an average of approximately 10,000 tows from 2008 to 2014 to over 11,000 tows in 2015. The number of small tows increased by over 15 percent from the historical average to over 2,000 tows. These smaller tows can be used to determine the halibut bycatch rate before an area is more extensively fished, and to improve mortality in deck sorted tows. The ability to effectively deck sort a larger tow will largely depend on both vessel characteristics, target catch rate, and halibut bycatch rate.

Year	Halibut use (mt)	Flatfish catch (mt)	Number of tows	Number of tows under 10 mt
Average (2008-2014)	1,510	169,792	10,145	1,768
2015	1,179	142,764	11,061	2,059
Difference	-331	-27,028	916	291
Percent difference	-21.9	-15.9	9.0	16.4

Decreased target catches can be attributed to several factors. Excluders decrease target catches, at times by as much as 50 percent. Small tows also increase the time needed to catch target species. Together, these factors have led to a decline in overall flatfish harvests. The impacts of reduced flatfish harvest, increased fuel consumption, and direct costs of deck sorting have yet to be quantified, however it is clear that the operational impacts and increased inefficiency of the fleet are significant.

Turbot Management

During 2014, AKSC and the Freezer Longline Coalition (FLC) engaged in negotiations at the request of the Council to manage turbot in both the Bering Sea and Aleutian Islands. AKSC and FLC companies represent the majority of the BSAI turbot harvest. AKSC harvests turbot incidentally to directed arrowtooth and Kamchatka founder fisheries, and FLC harvests turbot in a directed fishery. Turbot is an important component of each group's annual harvest.

AKSC and FLC signed a harvesting agreement in 2015 that allows both sectors to manage turbot harvest in a manner that ensures both sectors needs are met. The agreement allocates turbot to each sector on a sliding scale based on current quota levels and incidental catch needs in non-directed turbot, arrowtooth flounder, and Kamchatka flounder fisheries. AKSC worked with NMFS to determine the appropriate Amendment 80 allocation, and managed catch to within those limits.

The agreement is in place for 2016 and in perpetuity until either AKSC or FLC notifies the other that they will be exiting the agreement, which would occur two years after that date. AKSC will work with NMFS again during 2016 to determine the sector splits, and manage harvest to be within the Amendment 80 allocation.

Findings and Future Issues

The following section highlights management programs and issues that concern AKSC members. Most of these issues were described in previous cooperative reports and are available at: http://www.fakr.noaa.gov/sustainablefisheries/amds/80/default.htm. Issues discussed in these previous reports are briefly summarized in the bullets below. New issues are discussed subsequent to this summary.

Time/Area Closures that Reduce PSC Avoidance Flexibility

AKSC captains targeting flatfish on the Bering Sea shelf use several PSC reduction tools. Some of these rely on technology, such as excluders and gear modifications. However, often the most effective PSC reduction tool is to avoid areas with high PSC concentrations altogether. Captains initially assess PSC catch by watching haul dumping, then validating visual estimates with observer data. On-the-grounds communication among the fleet allows captains to focus on areas that produce low PSC rates and high target CPUEs.

Anecdotal information from captains indicates that both the Red King Crab Savings Area (RKCSA) and the Area 516 closure from March 15-June 15 may limit red king crab PSC avoidance by constraining operational flexibility. During the rock sole fishery, captains are forced to stay in deeper water south of the RKCSA or in the 10-minute strip. Captains believe that red king crab rates are often lower in shallower waters to the north, but are prohibited from accessing those areas.

AKSC representatives are working with the Crab Plan Team, the Council's Science and Statistical Committee (SSC), and the crab industry on an EFP to evaluate whether experimental fishing within these time/area closures have the potential for reducing red king crab PSC compared to fishing outside of the areas. At the December 2015 Council meeting, the SSC reviewed an EFP application that would explore this hypothesis. The SSC provided comment to improve the scientific design of the experiment, and AKSC expects present a revised EFP

concept to the Council at a future meeting. Although the EFP is principally concerned with reducing red king crab bycatch, access to the RKCSA for participating vessels may also produce ancillary benefits in terms of reduced halibut bycatch rates.

Pacific cod constraints

For various reasons, Pacific cod has become a constraining species for Amendment 80 fishermen, and most Pacific cod is harvested as bycatch in other target fisheries. In 2015, only 2,156 mt of the 22,778 mt harvested by AKSC (roughly 9%) was reported in the cod target. Addressing Pacific cod allocations would increase Amendment 80 operational efficiencies and provide additional opportunities for PSC avoidance.

Outreach

Over the last several years, AKSC representatives have met with the Bering Sea Elders Group (BSEG), Association of Village Council Presidents (AVCP), Trustees for Alaska, Native American Rights Fund, to provide the opportunity for a productive yellowfin sole fishery in the Kuskokiwm Bay area while minimizing the impact of that fishery on the way of life of the tribal people who use that region.

Because careful halibut bycatch management is so important to AKSC's ability to harvest its target species allocations, AKSC captains avoid areas with high halibut rates as much as possible. As high concentrations of yellowfin sole migrate across the Bering Sea shelf, AKSC vessels follow these schools as they typically have high catch per unit effort (CPUE) and low halibut bycatch. As the ice clears, large yellowfin sole spawning schools congregate in very shallow water. At certain times of the year, these may be the only low bycatch areas. Displacement to other areas would result in lower CPUE, higher bycatch, longer bottom times, increased costs, and additional habitat effects.

These shallow yellowfin spawning areas are sometimes adjacent to western Alaska communities. Community members have expressed concern to AKSC and the Council about vessel activities and their effects on local commercial and subsistence harvests.

In May of 2013, AKSC, BSEG, and AVCP announced a tentative agreement on the Kuskokwim Bay habitat conservation area. That agreement was signed and AKSC is following the terms of the agreement. Agreement highlights include:

1. Boundary adjustments near Nunivak Island, Kipnuk, and Cape Newenham
2. Establishing a working group that will meet in person twice a year. The working group will share information, review fisheries data and subsistence impacts, and work together to design and fund research that will be useful to all parties.

AKSC, AVCP, and BSEG continue to meet to discuss these and other issues.

Summary

The Council has designed, and NMFS has implemented, a well-designed program that provides AKSC with the necessary tools to effectively manage Amendment 80 fisheries, minimize bycatch to the extent practicable, and increase retention. AKSC and its member companies are working hard to achieve the goals of Amendment 80 by implementing internal data management and quality control measures that enable companies and vessel captains to maximize allocations. Amendment 80 is arguably one of the most successful, highly regulated rationalization programs to date. For 2015, AKSC target catch amounts for this complex multi-species fishery were well utilized, PSC limits were well below regulatory limits, and the groundfish retention goals have been exceeded. While AKSC companies are pleased with these successes, they have identified management elements that could be improved, and look forward to addressing these with the Council and NMFS.

Attachment 1

Amendment 80 Sector
Retention Compliance Standard Agreement

The North Pacific Fishery Management Council established regulatory retention levels based on historic retention performance for the Amendment 80 fleet. However, while the Amendment 79 analysis in front of the Council examined historic retention rates based on observer estimates in the blend and catch accounting system, the Council ultimately chose to measure retention using groundfish retention standard (GRS) methodology.

Implementation of the GRS resulted in the discovery that the retention calculation methodologies used in the Amendment 79 analysis and the GRS were not equal. As described in the Appendix to this Agreement, these differences averaged nine (9) percent for the Alaska Seafood Cooperative (AKSC). In 2008, the first year of the program, the AKSC retained 91 percent of its groundfish as measured by the Amendment 79 calculation methodology, far beyond the 65 percent required by regulation. However, the GRS calculation methodology only measured retention at 77 percent.

At its June 2010 meeting, the North Pacific Fishery Management Council recommended that NMFS implement an emergency rule to temporarily remove groundfish retention standard regulations. The emergency rule would be in effect while a permanent FMP amendment solution is developed that addresses issues associated with Amendment 79 implementation and enforcement.

To continue to meet Council bycatch reduction goals during development of an alternative retention program, Amendment 80 participants have voluntarily agreed to maintain current high groundfish retention levels by complying with the following retention compliance standard (RCS). In this Agreement, the term "parties" refers to any Amendment 80 cooperative and individual entities assigned to the Amendment 80 limited access fishery.

1. Retention Compliance Standard. Parties agree to meet or exceed an annual RCS of 85 percent (see appendix) using the following calculation methodology:

$$RCS = \frac{\text{Retained Groundfi sh Catch (Production RWE)}}{\text{Observed Total Groundfi sh Catch (CAS)}} + 9\%$$

This is the same calculation methodology currently used by NMFS to calculate the GRS, and is annually calculated using the following data inputs:

- Retained groundfish catch is calculated as the total annual round weight equivalent of all retained groundfish species as reported in production data.
- Groundfish catch includes those species listed in Table 2a to 50 CFR 679.
- Observed total groundfish catch is calculated by flow scale measurements, less any non-groundfish, PSC species or groundfish species on prohibited species status.

The RCS is measured on an annual basis. Each Amendment 80 cooperative agrees to meet or exceed the RCS of 85 percent. Each entity participating in the Amendment 80 limited access fishery agrees to operate each of its vessels in such a manner that they meet or exceed the RCS of 85 percent.

2. Monitoring Service. Parties agree that Seastate, Inc. will calculate each vessel or cooperative's annual RCS. Parties agree to take all actions and execute all documents that may be necessary to enable the Monitoring Service to calculate the RCS. In the event of a disputed RCS, an entity or cooperative may verify that data and calculations are correct. However, parties agree to Seastate, Inc. RCS calculations for purposes of compliance with this agreement.

3. Liquidated Damages Calculation. Liquidated damages described below are based on the recommended range of penalties found in the *Draft Policy for the Assessment of Civil Administrative Penalties and Permit Sanctions, NOAA Office of the General Council – Enforcement and Litigation.* That document can be found at http://www.nmfs.noaa.gov/ole/draft_penalty_policy.pdf.

Number of Offenses	Liquidated Damages Amount
1st	$25,000
2nd	$50,000
3rd and every thereafter	$100,000

4. Notice of Apparent Breach. The Monitoring Service shall monitor compliance with the terms and conditions of this Agreement. The Monitoring Service shall notify each party of any party who is out of compliance with the RCS.

5. Liquidated Damages Collection and Related Expenses. A party will pay liquidated damage amounts within ten (10) days of the notification described above. Liquidated damages will be remitted to:

SeaShare

600 Erickson Avenue NE, Suite 310
Bainbridge Island, WA 98110

Liquidated damages amounts not paid when due shall accrue interest at a rate of interest equal to the prime rate of interest announced by Bank of America as of the last day of the voluntary compliance period plus twelve percent (12%). In addition to liquidated damages, parties shall be entitled to an award of the reasonable fees and expenses, including attorneys' fees, a party incurs in connection with any action the party pursues to collect liquidated damages from the party in breach of this Agreement.

6. Annual third party audit. Each party agrees to conduct an annual audit of the RCS calculation and the data used within the calculation. Results of this audit will be reported to the parties, and the Council (see below.)

7. NMFS and Council reporting. Each party agrees to report its annual RCS to the Council at each April Council meeting. Cooperatives will include the RCS in their annual cooperative report, and Amendment 80 limited access participants shall create an RCS report. Each report will include the results of the third party audit above.

8. Agreement Term and Termination. This Agreement shall take effect January 20, 2011 and shall remain in effect until replaced by regulations implementing a Council approved groundfish retention program or until amended by the parties.

9. Miscellaneous.

    a. This Agreement contains the entire understanding of the parties as to the matters addressed herein, and supersedes all prior agreements related to the same. No amendment to this Agreement shall be effective against a party hereto unless in writing and duly executed by such party.

    b. This Agreement shall be governed by and construed in accordance with applicable federal law and the laws of the State of Washington. Venue for any action related to this Agreement shall be in King County, Washington.

    c. The parties agree to execute any documents necessary or convenient to give effect to the intents and purposes of this Agreement.

d. All notices to be given hereunder shall be in writing and shall be deemed given upon the earlier of when received or three days after mailing addressed in accordance with the attached contact information.

e. This Agreement shall be binding on the successors and assigns of all parties hereto.

f. In the event that any provision of this Agreement is held to be invalid or unenforceable, such provision shall be deemed to be severed from this Agreement, and such holding shall not affect in any respect whatsoever the validity of the remainder of this Agreement.

g. Any dispute related to this Agreement shall be submitted to arbitration in Seattle, Washington upon written request of any party. The party's written request shall include the name of the arbitrator selected by the party requesting arbitration. The other party shall have twenty (20) days to provide written notice of the name of the arbitrator it has selected. If the other party timely provides such notice, the two arbitrators shall select a third arbitrator within twenty (20) days. If the other party fails to select an arbitrator within such period, then arbitration shall be conducted by the single arbitrator originally designated. However, if the other party responds within such period and designates an arbitrator, the three arbitrators so selected shall schedule the arbitration hearing as soon as possible thereafter. Every arbitrator, however chosen, shall have experience in, or experience advising entities that have experience in, the commercial fishing industry of the Bering Sea, shall have no material ties to either party to the dispute, or to any other Amendment 80 Quota Share holder unless the parties agree otherwise, and shall have executed a confidentiality agreement satisfactory to the parties. The decision of the arbitrator, or, in the case of a three-arbitrator panel, the decision of the majority, shall be final and binding. The arbitrator, or, in the case of a three-arbitrator panel, the majority of the arbitrators, shall select the rules of arbitration.

h. Nothing contained in this Agreement shall be construed to make the parties to this Agreement partners, joint venturers, co-owners or participants in a joint or common undertaking. The parties may otherwise engage in or possess an interest in other business ventures of every nature and description, independently or with others, including but not limited to the ownership, financing,

management, employment by, lending to or otherwise

Appendix 1

Analysis of Proposed Retention Compliance Standards

Amendment 79 currently requires that the Amendment 80 sector meet a retention standard that increases from 65% in 2008 to 85% in 2011. The Amendment 79 analysis examined the changes in retention percentages by looking at historical data. Throughout the analysis, computations of historical retention percentages and increased retention tonnages were made using "blend" and/or catch accounting system (CAS) data. Total catch and retained catch were derived from these data sources, both of which use a mixture of production and observer data as the basis for calculations. Thus, retention percentage based on the blend (from here on "blend" refers to either the older blend formula or the post-2003 CAS estimate) would be determined as:

$$Rb = \frac{Retained\ catch\ (blend)}{Total\ catch\ (blend)}$$

where (*blend*) indicates a data source that is comprised of a mix of observer and production data. The Council ultimately chose to define a groundfish retention standard expressed as the ratio of the round weight equivalent of retained product to total catch, or:

$$GRS = \frac{Retained\ catch\ (production\ RWE)}{Total\ catch\ (blend)}$$

Throughout the Amendment 79 analysis, there exists an implied assumption that the retention percentage calculated by the new GRS method would be the same as the retention percentage calculated by Rb. However, this assumption was not examined in the analysis and no production round-weight equivalents were presented that would allow a reader to compute the GRS standard that was adopted. Data presented below indicate that the GRS formula returns a significantly lower number than the Rb retention percentage calculation used throughout the analysis. The effect of this difference is to require much greater retention of catch by the Amendment 80 fleet than was anticipated by the Council.

The Amendment 80 sector had, preparatory to coop formation, requested blend, CAS, and WPR information from NMFS. An analysis of those historic data shows a marked contrast to results and conclusions on the effects of the various Amendment 79 alternatives presented in the analysis. In the first year of operation under Amendment 79, vessel operators were able to increase both Rb and GRS dramatically. The GRS is consistently less than Rb, and AKSC vessels were still only able to achieve 77% under the GRS calculation. Using the Amendment 79 analysis methodology (i.e., with Rb as a proxy for GRS), Rb increases from 77% to 91% between 2007 and 2008. However, the fleet's apparent retention is still only 77% because it is now measured by GRS rather than Rb.

Harvest and retention by Blend/CAS and produce RWE for AKSC vessels. Tremont (<125') excluded 2005-2007 because of incomplete data. Seastate data received from NMFS.

Year	Blend / CAS total catch	Blend / CAS retained catch	Production report retained retained catch	Blend / CAS retention (Rb) %	Groundfish retention standard retention (GRS) %	Difference: CAS-GRS
1999	155,667	101,856	88,633	65%	57%	8%
2000	178,563	120,474	98,705	67%	55%	12%
2001	158,781	116,455	102,434	73%	65%	9%
2002	190,247	132,061	116,800	69%	61%	8%
2003	188,257	129,620	114,116	69%	61%	8%
2004	217,658	145,767	130,801	67%	60%	7%
2005	201,586	153,673	136,311	76%	68%	9%
2006	196,360	151,422	133,929	77%	68%	9%
2007	211,325	163,437	147,119	**77%**	**70%**	8%
2008	260,296	235,580	200,161	**91%**	**77%**	14%
2009	251,602	226,886	203,673	**90%**	**81%**	9%
Average	200,940	152,476	133,880	75%	66%	9%

The average difference between the1999-2009 blend and GRS calculations is 9%. Therefore, GRS percentages would need to be adjusted downward to meet Council intended retention goals as they understood them during deliberations of Amendment 79. These adjustments are reflected in the following table.

GRS Schedule	Annual GRS	Annual RCS
2010	80%	71%
2011 and each year thereafter	85%	76%

[SIGNATURE PAGES FOLLOW]

Attachment 2

Fisheries Information Services
413 SW Butterfield Place, Corvallis, OR 97333
541-602-1609

Jason Anderson
Manager, Alaska Seafood Coop

March 2, 2016

Audit of Retention Compliance Standards for Alaska Seafood Coop.

Purpose and Definitions:
The purpose was to provide an independent determination of annual retention rate of groundfish for Alaska Seafood Coop (AFC) boats in Bering Sea/Aleutians (BSAI) groundfish fisheries in 2015. The Rate is defined as round weight equivalent of all retained groundfish (production) divided by observed total groundfish catch.

Data sources and Confidentiality:
All raw data is in the purview of National Marine Fisheries Services (NMFS). Using permission granted by each company, NMFS Alaska Region staff provided to *FIS* 2015 data from each of fourteen boats that participated in 2015 cooperative fisheries.

Date Scope and Format:
There are two types of data. *Production* data was aggregated by week, species and product type, converted to round weight equivalence. *Observed total groundfish* catch data was aggregated by week, species group and round weight.

Data Reconciliation and Evaluation:
For each boat, *FIS* compared weeks with data for observer and production files. These were consistent for all but one boat which was missing 4 weeks of observer data. NMFS confirmed that boat had been on a research cruise during that period and production data records during the period were removed from the total for consideration. For two species groups, there were required-discard NMFS closures in the BSAI: squid on July 30 and sculpins on Dec. 1. Records for these species in weeks following closures were removed from the Observer database before analysis. These totaled to 4.2 mt of sculpin and 22.7 mt of squid.

Data Processing:
Through the use of Pivot tables, annual summaries by species for each boat were produced, including all FMP groundfish species listed on table 2a of regulations. For each boat, total production was divided by total observed groundfish to determine its retention percentage. Total production for all boats was divided by total observed groundfish for all boats to determine the AFC overall retention percentage.

It is noted that for each boat, retained percentages are consistent with those determined for prior years. No outliers were detected.

Data Summary:
The totals (for all fourteen boats) were 231,718 mt of production (in round weight) and 272,583 mt of observed groundfish, for a coop retention rate of 85.0%.

Janet Smoker