

**AKSC Halibut Bycatch Performance  
Report to the North Pacific Fishery Management Council  
December 2016**

At its June 2015 meeting, the North Pacific Fishery Management Council (the Council) reduced halibut prohibited species catch available to groundfish fisheries (including a reduction of that PSC available to the Amendment 80 sector of at least 25 percent). At that meeting, the Council also requested that the Amendment 80 cooperatives prepare plans for halibut avoidance that include:

1. halibut avoidance practices on the grounds,
2. increased communication between participating harvesters,
3. sharing data for performance tracking,
4. use and development of excluders,
5. deck sorting,
6. performance measurement and assessment at the boat and company level,
7. incentives for continuous efforts to minimize bycatch, and
8. consequences for substandard performance.

The Council also requested that the cooperative report on its halibut PSC performance under the plan at this meeting.

**Background**

The halibut PSC reduction adopted by the Council in 2015 was the culmination of a series of regulatory and self-imposed measures reducing halibut by the Amendment 80 sector and the cooperative.

The Council intended Amendment 80 to provide the sector with the ability to reduce discards by ending the race for fish. The Council intended the action to facilitate increased retention by the sector. The action has exceeded expectations in that regard, with groundfish retention increasing from levels slightly above 50 percent prior to Amendment 80 to over 90 percent currently. Although the Council's primary focus of the Amendment 80 was groundfish retention, the action also included a reduction of halibut available to the sector. The initial reduction, together with a 150 mt reduction over the course of the first four years of the program, represented a 12 percent reduction from historical use.

In June of 2014, the cooperative undertook a second reduction in halibut PSC usage after a request from the Council. At that meeting, at the request of IPHC Commissioners, the Council passed a motion asking all BSAI sectors to "undertake voluntary efforts to reduce halibut mortalities in the BSAI resulting from PSC use by 10% from the current 5-year average levels through the 2014-2015 fishing season." As understood by the Council and industry at the time, the reduction would stem a decline in catch limits in directed halibut fishery in the Area 4CDE management area, which includes the Pribilof Islands and Western Alaska. In response, the cooperative established protocols and targets for reducing its halibut usage in the second half of 2014 (July to December). The cooperative successfully reduced its halibut usage for the year and achieved the Council's reduction goal. Despite achieving the goal, the halibut catch limit in Area 4CDE declined, in part, due to concentration of bycatch in Area 4CDE and the size composition of the bycatch, factors that were not considered by industry, the IPHC Commissioners, or the Council when requesting the bycatch reduction from the different Bering Sea and Aleutian Islands fleets.

At its December 2014 meeting, the Council moved to address the decline in the Area 4CDE halibut fishery catch limit, requesting NMFS to take emergency action to reduce halibut PSC available to all sectors by 33 percent, the reduction needed to achieve a 1 net million pound catch limit in Area 4CDE. NMFS subsequently rejected the Council's request for emergency action.

To do its part to rectify the drop in the halibut catch limit in Area 4CDE, representatives of the AKSC attended the January 2014 meeting of the IPHC, providing a presentation to the Commission describing halibut bycatch reduction measures employed by the cooperative, the PSC reduction needed to allow for a 1 million net pound catch limit in Area 4CDE, and identifying the cooperative's proportional share of that reduction based on historical PSC usage. Based in part on the cooperative's presentation and the presentations of other halibut PSC users, the IPHC established a 1.285 million net pound catch limit for Area 4CDE. The cooperative achieved the target reduction, reducing its bycatch by almost 4 percent below that target.

This outcome reflects the cooperative's (and other BSAI halibut bycatch users') willingness to respond to halibut management issues quickly and effectively when the Council and NMFS were unable to. In the two months between the IPHC's interim and annual meeting, halibut PSC users developed plans to respond to the needs of directed halibut users based on the preliminary analysis that the IPHC uses to set the directed fishery catch limits. The IPHC relied on these cooperative measures to achieve the Council's halibut directed fishery management goal of a 1 million net pound fishery, while the effects of halibut PSC reductions were mitigated by that targeted cooperative action. For the cooperative, instead of the Council's suggested 33 percent reduction in the overall halibut limit, the targeted reduction in Area 4CDE achieved the intended result by reducing halibut PSC usage less than 20 percent from the limit. The cooperative achieved this objective without increasing usage in the other halibut management areas that are included in the BSAI halibut PSC limit. These directed actions are informative, as the Council considers the effects of various halibut PSC reductions, as well as the necessity and practicability of various future actions.

In June of 2015, the Council took further action to reduce halibut available to Amendment 80 participants, reducing PSC to cooperatives by 25 percent and reducing allocations to any limited access fishery by 40 percent. NMFS implemented this latest reduction in 2016. Since 2008, when the Amendment 80 sector began the process of regulatory and self-imposed halibut PSC reductions, the cooperative has developed a variety of tools to help achieve its halibut reduction goals. In addition, in direct response to the Council's request to adopt a halibut avoidance plan, the cooperative and the Alaska Groundfish Cooperative entered an inter-cooperative agreement for halibut avoidance as described below.

### **The Inter-cooperative Agreement**

The inter-cooperative agreement defines a means of ensuring sector-wide accountability for halibut avoidance. The agreement consists of three components:

- **Best Practices** – This aspect of the plan defines best operational practices for halibut avoidance by the Amendment 80 sector. On the grounds, halibut avoidance practices are described, including: monitoring halibut bycatch; communication protocols; excluder use and development; and halibut avoidance through changing a variety of fishing parameters, including location, target, depth, tow speed, and other factors.
- **Halibut Avoidance Plan** – This aspect of the plan defines performance standards to incentivize all vessels in the fleet to achieve acceptable levels of halibut use in the fisheries. The program is intended to ensure that all vessels maintain minimum halibut rates annually using both annual and quarterly performance standards with a specific component to assess performance in the fourth quarter, when halibut rates have historically increased to the highest levels for the year.
- **Deck sorting** – The third aspect of the program is the development of a deck sorting program. The sector is currently engaged in its fourth exempted fishing permit (EFP), which allows vessels to deck sort halibut to return halibut to the water quickly, thereby reducing halibut mortality. This

document includes a very brief summary of the status of deck sorting by the sector. The Council will be receiving a detailed report on the 2016 EFP at this meeting.

### Best Practices

The cooperative utilizes a suite of bycatch tools to reduce halibut mortality, most of which are defined in the inter-cooperative agreement's rules of the road document, which is attached. This section provides a brief description of the cooperative's halibut avoidance efforts as defined in the agreement.

Cooperative members minimize halibut usage through a variety of halibut avoidance measures, including choices of fishing location and time of day, excluders, and deck sorting. The cooperative's vessel operators alter fishing location and time to achieve high yield for target species and low halibut bycatch rates. Small test tows are used to assess catch conditions for bycatch and target species. Small test tows are one of several tools used by vessel operators to determine species composition of catch, to evaluate potential halibut bycatch rates in an area selected for directed groundfish fishing. Test tows allow vessel operators to avoid areas with large concentrations of halibut.

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 keep captains well-informed on successful PSC avoidance strategies allowing them to cope with continuously changing fishing conditions and effectiveness of the various halibut avoidance tools.

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

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

All cooperative vessels have experimented with a variety of excluders designs. For example, one halibut excluder design uses a grid placed at an angle to allow it to lie diagonally across the inside of the net slanted towards the direction of the codend, with an escapement panel for halibut that are not able to fit through the grid (see Figure 1). An alternative design uses a grid system that makes up the net's circumference with escapement panel placed before the codend (see Figure 2). Choice of excluder typically depends on the specific vessel's operating characteristics and conditions in the fishery (such as size of target catch and size of halibut encountered).

Figure 1: Ramp Halibut Excluder



Figure 2: Hallway Halibut Excluder



Vessels also modify existing designs to improve 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 water flow in select areas of the excluder. The addition of kites may allow target species to swim through the inner panels of the excluder and into the codend reducing loss of target species catch, while still allowing halibut to escape. These improvements allowed vessels to use excluders with lower loss of target fish, reducing halibut bycatch rates, and avoiding the need to tow longer. With more effective excluders, 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 and refinement to further increase halibut exclusion and reduce losses of target catch.

Under current regulations, halibut mortality in trawl fisheries is exacerbated by the relatively long time that halibut remain out of the water on vessels prior to their release. Observer protocols require that all halibut be removed from the net and placed in a tank below deck to allow for observer sampling and

weighing of catch, which occur in the factory. Beginning in 2009, the cooperative has worked with NMFS to secure Exempted Fishing Permits (EFPs) authorizing vessels to sort halibut on deck for expedited release, to reduce halibut mortality. Under these EFPs, halibut released from the deck are and have been rigorously accounted for, with viability testing conducted using IPHC-approved methods whenever deck sorting occurs. This progression of EFPs has allowed the cooperative to achieve substantial halibut reductions, while both fishery participants and NMFS develop an understanding of the protocols that will be needed to implement regulations that permit deck sorting. While substantial progress has been made toward developing a regulation, at least two years of fishing under EFPs will be necessary to define a regulatory program that achieves the greatest potential halibut savings.

Participation increased under this year's EFP in comparison to prior years with increases in both the number of vessels participating and harvests. These increases contributed to the success of the cooperative in maintaining fishing effort in the face of the recent halibut limit reductions. Additional information concerning this year's EFP will be the subject of a separate presentation at this meeting.

### **Overview of the Halibut Avoidance Performance**

Halibut avoidance performance is subject to a variety of factors in addition to use of halibut avoidance measures. Fishing conditions (including the presence or absence of halibut intermingled with groundfish stocks) often vary across time in unpredictable ways. As a result, halibut bycatch fluctuates within and across years. Despite these vagaries, the cooperative's halibut PSC performance has generally improved over time.

Through November 28, 2016, the cooperative had its lowest halibut usage since its inception. Although additional halibut will be used through the year end, this year will be the lowest halibut usage by the cooperative since the implementation of Amendment 80. By improving its halibut performance and lowering its halibut usage in 2016, the cooperative was able to slightly increase its groundfish catches from 2015 to an amount slightly below its historical average. It is notable that the 2015 and 2016 seasons are the only seasons when cooperative halibut usage was below the current cap level (Table 1).

Table 1. Alaska Seafood Cooperative halibut mortality in the Bering Sea and Aleutian Islands (2008-2016).

| Year | AKSC halibut limit | Halibut (mt) | Groundfish Catch (mt) | Halibut kg/mt of groundfish |
|------|--------------------|--------------|-----------------------|-----------------------------|
| 2008 | 1,837              | 1,412        | 240,064               | 5.88                        |
| 2009 | 1,793              | 1,560        | 235,452               | 6.62                        |
| 2010 | 2,094              | 1,721        | 255,666               | 6.73                        |
| 2011 | 1,708              | 1,322        | 250,507               | 5.28                        |
| 2012 | 1,718              | 1,501        | 249,970               | 6.00                        |
| 2013 | 1,818              | 1,574        | 259,965               | 6.06                        |
| 2014 | 1,702              | 1,483        | 246,746               | 6.01                        |
| 2015 | 1,702              | 1,179        | 229,930               | 5.13                        |
| 2016 | 1,251              | 1,108        | 244,201               | 4.54                        |

\*2016 data is current through Nov 28, 2016. Note that 2015 and 2016 data includes EFP halibut and groundfish.

Although the halibut PSC limit of the cooperative applies across all halibut management areas in the Bering Sea and Aleutian Islands, the cooperative monitors its halibut usage in the three Bering Sea and Aleutian Island halibut management areas to ensure that its bycatch does not disproportionately affect any one area. In the most recent years, the cooperative's halibut usage has been stable or declined across the three areas (Table 2).

Table 2. Alaska Seafood Cooperative halibut mortality in Bering Sea and Aleutian Islands halibut management areas (2008-2016).

|      | 4A            | 4B            | 4CDE          |
|------|---------------|---------------|---------------|
| Year | Hal Mortality | Hal Mortality | Hal Mortality |
| 2008 | 244           | 54            | 1,113         |
| 2009 | 297           | 100           | 1,163         |
| 2010 | 148           | 197           | 1,375         |
| 2011 | 245           | 106           | 972           |
| 2012 | 291           | 134           | 1,076         |
| 2013 | 269           | 35            | 1,271         |
| 2014 | 142           | 22            | 1,319         |
| 2015 | 92            | 27            | 1,060         |
| 2016 | 68            | 29            | 1,013         |

\* Information in 2016 is current through Nov 27, 2016. 4B however is complete since AI fishing has been completed. 2015 and 2016 data includes EFP halibut.

It is notable that the cooperative will end the year less than 150 metric tons below its current cap, with each company having on average less than 30 mt of unused halibut mortality. Given that halibut avoidance measures adopted by vessels are not foolproof and the potential for halibut interactions to increase near the end of the year, this level of unused halibut mortality suggests that the current limit is binding on the cooperative and creates a great incentive for halibut avoidance even in the absence of other incentives created by the cooperatives halibut avoidance plan. The halibut avoidance plan, and particularly the measure in that plan that addresses the potential for increases in halibut bycatch rates in the fourth quarter, effectively complement the incentive of the current cap to ensure that this strong incentive is maintained through the year's end.

## **Conclusion**

The cooperative relies on multiple tools to reduce halibut PSC. Realized reductions in halibut bycatch using any tool can vary based on fishing conditions. As a result, the cooperative's members use a variety of methods changes in fishing conditions. For example, safety concerns may prevent the use of deck sorting in stormy weather, requiring vessels to rely more heavily on excluders. Despite these challenges, the cooperative has achieved substantial reductions in halibut PSC through its persistent efforts.

## **Alaska Seafood Cooperative Halibut Bycatch Rules**

(Adopted 2015)

In order reduce bycatch to allow for a substantial increase in the directed halibut fishery catch limit in Area 4CDE from the IPHC staff's preliminary blue line advice, the members of the Alaska Seafood Cooperative (AKSC) agree to the following terms:

**Notice of entry to/exit from the BSAI fisheries** - Each vessel will notify both Seastate and the other fishery participants on entry to or exit from the Bering Sea and Aleutian Islands fisheries to facilitate communication.

**On grounds communication among captains** – Captains will communicate on the grounds concerning halibut bycatch rates. On grounds communication provides the most up to date and complete information concerning halibut avoidance – includes discussions of:

- 1) prevailing bycatch rates and changes in those rates,
- 2) catch rates of halibut (particularly in the 4CDE accounting area),
- 3) effectiveness of deck sorting in the different target fisheries under various conditions and bycatch levels,
- 4) effectiveness of excluders in the different target fisheries under various conditions and bycatch levels, and
- 5) any factor that may be relevant to bycatch rates and bycatch rates, including the effects on halibut rates and halibut rates of:
  - a. time of day
  - b. fishing depth
  - c. water temperature
  - d. areas of halibut concentrations
  - e. excluder performance (including type and mesh size)
  - f. effects of any gear modifications.

**Test tows** – When appropriate, vessels will use smaller test tows to ensure that halibut rate is acceptable prior to fishing an area.

**Attention to Haul Composition** –Wheelhouse personnel will give increased attention to haul composition by watching the bag dump and assessing the halibut bycatch rate and halibut O26 bycatch rate and to increase communication with deck crew concerning halibut bycatch (and halibut O26 bycatch) trends.

**Excluder Use** – The use of excluders is encouraged. Since excluders may have limited benefits (and sometimes increase bycatch) in the high volume, low bycatch periods, vessels are also encouraged to share information concerning the effectiveness of excluders when fishing different areas and under different conditions.

**Seastate Reporting** – Seastate is commissioned to develop bycatch charts on a regular basis that display the halibut bycatch rates in the fisheries. These charts will show halibut bycatch by target fishery.

**Deck sorting** - On approval of the cooperative's 2015 deck sorting Exempted Fishing Permit, vessels are encouraged to use deck sorting to reduce mortality of halibut (particularly in the 4CDE accounting area).

**Night Towing** – Night towing is discouraged in fisheries with historically higher night halibut bycatch rates. Cooperative members are directed to give extra attention to halibut bycatch rates (and 4CDE halibut bycatch) if fishing at night. If a vessel cannot achieve night fishing bycatch rates that are measurably similar to day fishing bycatch rates, the vessel is strongly encouraged to end night fishing.

**Rate Standard** — As fishing progresses during the season, cooperative members will consider whether any halibut rate standards may be beneficial for achieving halibut bycatch reductions. Rate standards could be applied at the target fishery level to compel certain avoidance measures, if appropriate rate levels and monitoring requirements and effective response measures can be identified.

**Weekly meetings** – Cooperative members agree to meet weekly to discuss overall Bering Sea halibut PSC performance and 4CDE accounting area halibut bycatch performance. Meetings will include discussions of:

- 1) Prevailing halibut bycatch rates and performance (and particularly 4CDE accounting area rates and performance).
- 2) Success of the various bycatch avoidance strategies identified in this agreement and the effects of any other strategy or factor on bycatch avoidance and rates
- 3) Development of additional measures to reduce bycatch, including whether sufficient information exists to develop any new or additional bycatch avoidance requirements or practices to supplement those identified in this agreement
- 4) Possible performance standards and responses required for those vessels not meeting the standards.