

## **Amendment 80 Halibut Avoidance Program November 27, 2015**

### **Summary**

The overarching goal of this halibut avoidance program is to ensure that Amendment 80 fleet vessels use the best available operational practices to avoid halibut and reduce halibut mortality. Key elements in the management of this program include establishing performance standards to identify outlier vessels; and establishing financial penalties and halibut PSC forfeiture provisions to improve accountability at the vessel level. Historically, the large majority of vessels in the Amendment 80 fleet use fishing practices that avoid halibut and minimize halibut mortality to the extent practicable. This program is intended to ensure that *all Amendment 80 vessels* and companies meet similar performance standards and have strong incentives to reduce halibut mortality and adhere to the best practices for halibut avoidance. The program also responds to the Council's June 2015 request that the Amendment 80 fleet develop a plan that:

1. Defines halibut avoidance practices on the grounds
2. Increases communication between participating harvesters
3. Provides for sharing of data for performance tracking
4. Provides for the use and development of excluders
5. Develops the sector's deck sorting program
6. Measures and assesses performance at the boat and company level
7. Provides incentives for continuous efforts to minimize bycatch
8. Defines consequences for substandard performance

Further, the program is designed not just to accommodate the revised hard caps, but to bring savings to levels below the hard cap.

The plan will be adopted under an inter-cooperative agreement to ensure sectorwide accountability.

The plan consists of three aspects:

- Best Practices – This aspect of the plan defines best operational practices for halibut avoidance by the 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 in the year.

- Deck sorting – The third aspect of the program is the development of a deck sorting program. At this time, the sector is applying for its fourth exempted fishing permit (EFP), which would expand and develop the use of deck sorting by vessels in the sector to reduce halibut mortality by returning any halibut to the water quickly after they are brought on board. This document contains a very brief summary of the status of deck sorting by the sector. The Council will be receiving a detailed report on 2015 EFP results and the 2016 EFP application at its December meeting.

### **Best Practices**

A number of measures currently in use by the Amendment 80 sector - such as information exchange, use of excluders, moving from areas with high halibut rates - have proven effective for reducing halibut catch over the years. In 2014, the sector formalized these guidelines (or “best practices”) for captains to use when fishing to guide their consideration of the various halibut avoidance measures. The best practices guidelines are intended to increase the efficacy of the avoidance measures, as well as ensure broader use of the measures throughout the fleet. The entire Amendment 80 sector has agreed to comply with the attached best practices document.

With ever changing conditions on the grounds, these guidelines must be viewed as recommended considerations, as individual circumstances may suggest that other choices could result in better halibut avoidance performance. These guidelines will be revisited on an ongoing basis and reviewed more formally at the annual captains’ meetings and modified accordingly to ensure they define the most effective halibut avoidance strategies.

### **Halibut avoidance plan**

While the best practices define the means of achieving an acceptable level of halibut avoidance, the halibut avoidance plan is designed to ensure that all vessels have achieve an acceptable level of halibut avoidance and halibut mortality reduction. The plan is comprised of three tests. Two of the tests provide incentives for maintaining acceptable halibut avoidance on an annual basis. The other test provides incentives for maintaining halibut avoidance into the fourth quarter, when halibut rates historically have risen.

- Annual Outlier Test - Tier 1: Individual vessels are required to meet annual halibut rate standards for three species/species group target fisheries – yellowfin sole, rock sole, and flathead sole/arrowtooth flounder. The annual standards become more stringent over time to incorporate learning and increased ability of vessels to achieve halibut avoidance goals. Vessels that fail to meet the rate standard are subject to monetary penalties.
- Fourth Quarter Test: To curtail the potential for halibut rates to increase in the fourth quarter, all vessels will also be subject to a fourth quarter rate standard. Vessels that fail to meet the rate standard are subject to monetary penalties.

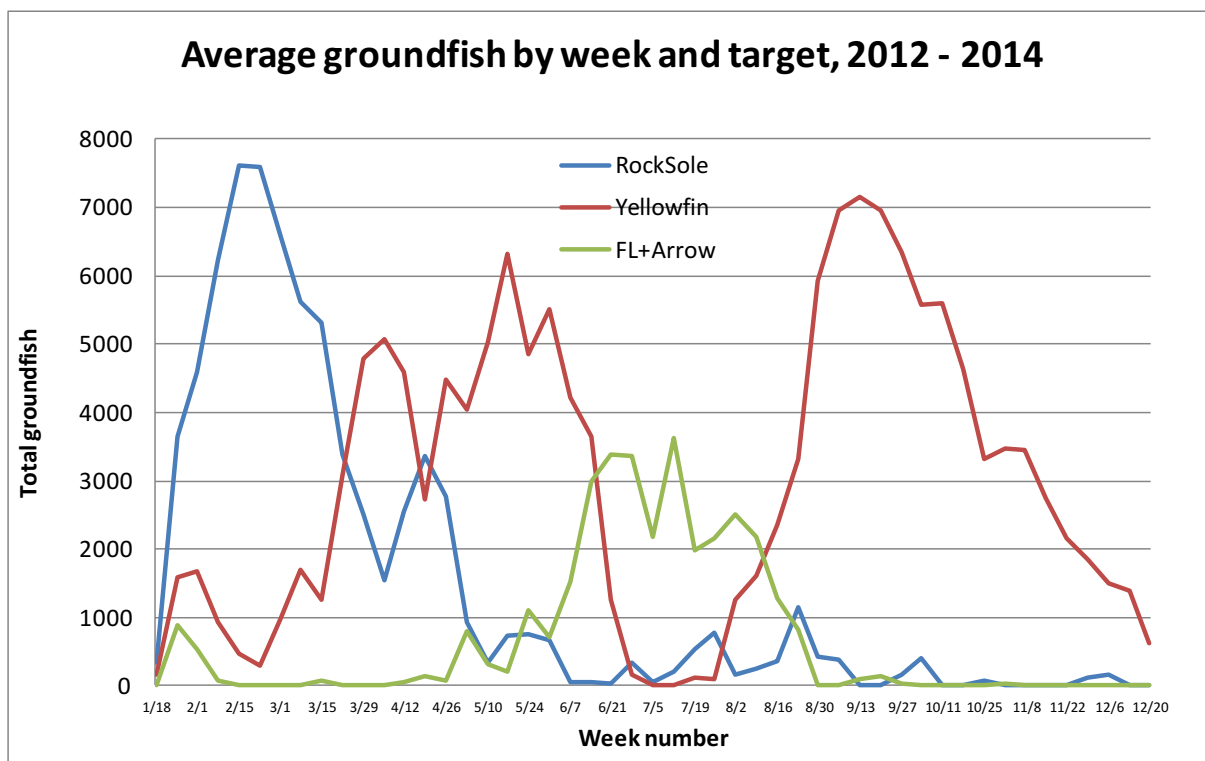
- Quarterly Outlier Test - Tier 2: Any vessel that does not meet the annual standard in a target fishery will be subject to quarterly monitoring in the following year, in addition to the annual monitoring and fourth quarter monitoring that apply to all vessels. Vessels that fail to meet the applicable standard in any quarter would be subject to a halibut forfeitures.

### **Annual Outlier Test - Tier 1**

The Annual Outlier Test (Tier 1) requires each vessel to meet halibut rate standards annually in three different target fisheries. The outlier test is similar to the Vessel Incentive Program (VIP), which was abandoned by the Council due, in part, to NMFS enforceability concerns. Under the Amendment 80 cooperative structure, an inter-cooperative agreement is to create a program that can be internally implemented and enforced without regulation.

The yellowfin sole, rock sole, flathead sole, and arrowtooth flounder targets represent 88 percent of the halibut mortality from 2012-2014, therefore, provide the greatest opportunity for halibut mortality savings. Maintaining halibut mortality rates in these targets at low, yet practicable, levels is intended to allow the fleet to minimize halibut use to the extent practicable.

The plan sets rate standards in three different target fisheries based on historical performance. Yellowfin sole and rock sole will each be monitored independently because these fisheries occur in different areas at different times of year. Arrowtooth flounder and flathead sole occur in similar fishing locations, times, and conditions and are therefore aggregated as a target under the plan.



Under the program, rates are based on the 2012-2014 average halibut rates for each of the targets. These years represent the most recent three-year average, and are most representative of current ocean and fishing conditions, as well as the state of halibut avoidance in the sector. Similar to the VIP, the average halibut rate for each target species is multiplied by a “multiplier” to establish the standard recognizing that a portion of the fleet exceeds the average by definition. The VIP multiplier was 2.0, and is the starting point for yellowfin sole and rock sole targets in 2016. To bring outlier vessels closer to the fleet average, the multiplier in these target fisheries will be reduced to 1.75 in 2017 and 1.5 in 2018 and subsequent years. Lowering limits in the second and third years of the program is intended to provide time for outlier vessels to adjust their bycatch avoidance practices to these more restrictive standards. Additionally, these rate reductions coincide with a potential implementation schedule for deck sorting, one of the bycatch reduction tools intended to aid vessels in achieving the standard.

The arrowtooth flounder/rock sole combined target is subject to a 1.8 multiplier in 2016, which is reduced to 1.65 in 2017, and 1.5 in 2018 and thereafter. The more stringent starting point for these targets recognizes the need to achieve reductions more quickly in these fisheries, which have historically experienced higher halibut mortality rates. The rate reductions will have the effect of making scaled mortality reductions on outlier vessels, as well as reducing halibut mortality overall in these fisheries.

Rates standards based on the fleet mean 2012-2014 rate with a decreasing multiplier.

Species	2012-2014 Base Rate (kg/mt)	Year	Multiplier	Rate Standard (kg/mt)
Yellowfin sole	5.8	2016	2	11.7
		2017	1.75	10.2
		2018	1.5	8.7
Rock sole	7.2	2016	2	14.3
		2017	1.75	12.6
		2018	1.5	10.8
Flathead sole/ Arrowtooth flounder	11.7	2016	1.8	21
		2017	1.65	19.2
		2018	1.5	17.5

The test is applied by comparing a vessel's halibut rate in a target fishery to the applicable annual standard at the end of the year. A vessel's rate will be based on its target catches in Amendment 80 and CDQ fisheries combined. Including CDQ catch will prevent vessels from attributing catch to one management program or the other based on the potential for a violation under the program. Vessels that exceed the applicable rate standard will be subject to a monetary penalty as described below.

#### ***Minimum groundfish thresholds for test***

To avoid the potential for discouraging a vessel with unacceptably high halibut rates from exiting a fishery, vessels that have minimal groundfish catch in a target will be excluded from the program. Specifically, if a vessel enters a fishery and finds unacceptably high halibut rates, applying a penalty at low harvest amounts would create an incentive for the vessel to remain in the fishery hoping to find cleaner fishing to lower its rate.

Vessels have occasionally had very little catch in one of the targets, at times with relatively high halibut rates. Departure of these vessels from the fishery saved halibut and should not be discouraged. To avoid the creation of a disincentive for leaving a fishery with high halibut bycatch rates, vessels below a threshold catch amount in a target are not subject to the rate test. Thresholds for the targets are 1,000 mt in yellowfin sole, 1,000 in rock sole, and 500 mt in arrowtooth/flathead. These catch thresholds should be adequate to ensure that a vessel has no incentive to remain in a fishery in an attempt to avoid a penalty.

#### ***Penalties***

Vessels that do not pass the annual outlier test for a given target species will be subject to a monetary penalty. Fines are on a target basis, so a vessel will be subject to a penalty in each target in which it fails to meet the applicable standard (see tables below). Fines for each species range from a minimum of \$50,000 to a maximum of \$100,000 based on the vessel's halibut rate and the amount of groundfish harvested. Having the penalty increase with groundfish harvests

creates a disincentive for continuing harvests at the unacceptably high rate. Vessels that do not meet the annual standard will also be subject to additional scrutiny in the following year by being subject to quarterly monitoring.

<b>Yellowfin Sole Penalty Schedule</b>				
<b>2016</b>	Rate Standard (kg/mt)	Groundfish catch		
Multiplier		1,000-9,999 mt	10,000-14,999 mt	Over 15,000 mt
2.00	11.7	\$50,000	\$60,000	\$65,000
2.25	13.1	\$65,000	\$75,000	\$90,000
2.50	14.6	\$85,000	\$95,000	\$100,000
<b>2017</b>	Rate Standard (kg/mt)	Groundfish catch		
Multiplier		1,000-9,999 mt	10,000-14,999 mt	Over 15,000 mt
1.75	10.20	\$50,000	\$60,000	\$65,000
2.00	11.66	\$65,000	\$75,000	\$90,000
2.25	13.12	\$85,000	\$95,000	\$100,000
<b>2018</b>	Rate Standard (kg/mt)	Groundfish catch		
Multiplier		1,000-9,999 mt	10,000-14,999 mt	Over 15,000 mt
1.50	8.7	\$50,000	\$60,000	\$65,000
1.75	10.2	\$65,000	\$75,000	\$90,000
2.00	11.7	\$85,000	\$95,000	\$100,000

<b>Rock Sole Penalty Schedule</b>				
<b>2016</b>	Rate Standard (kg/mt)	Groundfish catch		
Multiplier		1,000-9,999 mt	10,000-14,999 mt	Over 15,000 mt
2.00	14.3	\$50,000	\$60,000	\$65,000
2.25	16.1	\$65,000	\$75,000	\$90,000
2.50	17.9	\$85,000	\$95,000	\$100,000
<b>2017</b>	Rate Standard (kg/mt)	Groundfish catch		
Multiplier		1,000-9,999 mt	10,000-14,999 mt	Over 15,000 mt
1.75	12.6	\$50,000	\$60,000	\$65,000
2.00	14.3	\$65,000	\$75,000	\$90,000
2.25	16.1	\$85,000	\$95,000	\$100,000
<b>2018</b>	Rate Standard (kg/mt)	Groundfish catch		
Multiplier		1,000-9,999 mt	10,000-14,999 mt	Over 15,000 mt
1.50	10.8	\$50,000	\$60,000	\$65,000
1.75	12.6	\$65,000	\$75,000	\$90,000
2.00	14.3	\$85,000	\$95,000	\$100,000

<b>Flathead Sole/Arrowtooth Flounder Penalty Schedule</b>				
<b>2016</b>	Rate Standard (kg/mt)	Groundfish catch		
Multiplier		1,000-9,999 mt	10,000-14,999 mt	Over 15,000 mt
1.80	21.0	\$50,000	\$60,000	\$65,000
2.05	23.9	\$65,000	\$75,000	\$90,000
2.30	26.8	\$85,000	\$95,000	\$100,000
<b>2017</b>	Rate Standard (kg/mt)	Groundfish catch		
Multiplier		1,000-9,999 mt	10,000-14,999 mt	Over 15,000 mt
1.65	19.2	\$50,000	\$60,000	\$65,000
1.90	22.2	\$65,000	\$75,000	\$90,000
2.15	25.1	\$85,000	\$95,000	\$100,000
<b>2018</b>	Rate Standard (kg/mt)	Groundfish catch		
Multiplier		1,000-9,999 mt	10,000-14,999 mt	Over 15,000 mt
1.50	17.5	\$50,000	\$60,000	\$65,000
1.75	20.4	\$65,000	\$75,000	\$90,000
2.00	23.3	\$85,000	\$95,000	\$100,000

**Example of the annual test**

The table below is an illustration of the application of the test to a vessel participating in flatfish targets included in the program. In the yellowfin sole target, the vessel had 12,000 mt of groundfish catch, using 45 mt of halibut. Since its rate in that target is below the standard, no penalty applies in that target. In the rock sole target, the vessel harvested caught 2,500 mt of groundfish using 33 mt of halibut. Since the vessel's 13.2 kg/mt halibut rate exceeded the 12.6 kg/mt standard, the vessel is subject to a penalty of \$50,000. This is the minimum penalty, as the vessel exceeded the rate standard by only a small amount and had a relatively small amount of catch in the target. In the arrowtooth flounder/flathead sole target, the vessel had only 600 mt of catch. Since this amount is below the 750 mt catch threshold for the target, the vessel standard is not applied to the vessel.

Target	Groundfish		Halibut catch (mt)	Halibut rate (kg/mt of groundfish)	Rate Standard	Penalty
	Vessel catch	Threshold				
Yellowfin	12,000	1,000	45	3.8	10.2	0
Rock sole	2,500	1,000	33	13.2	12.6	\$50,000
Arrowtooth flounder/flathead	600	750 <sup>a</sup>	8	13.3	19.2	NA

<sup>a</sup> Since the catch is less than the threshold, the vessel is exempt from any penalty and the rate standard.

**Fourth Quarter Test**

Among the concerns expressed by the Council is that halibut rates rise in the fourth quarter. The rise is likely attributable to several factors, including dispersion of target fish on the grounds, halibut abundance and distribution, and incentives for halibut avoidance. The fourth quarter test will increase the incentive for halibut avoidance during the latter part of the year. Vessels with excess halibut at the end of the year will have an increased incentive for reducing their halibut and leaving unused halibut in the water.

Under the fourth quarter monitoring plan, vessels must maintain halibut rates at or below a threshold level in the three flatfish targets included in the program. Although the large majority of groundfish catch and halibut bycatch in the fourth quarter is from the yellowfin sole target, full accountability for halibut bycatch is better achieved by a more comprehensive program that also includes the rock sole and arrowtooth flounder/flathead sole targets.

The rate standard is set at the fourth quarter 2012-2014 fleet average halibut rate in the aggregated flatfish targets. Recognizing that halibut rates have historically been highest in the fourth quarter, no multiplier is applied to the historical rate. This results in a rate standard of 12.1 kg/mt. By simply requiring all vessels to stay below the historical fleet average, the fleet's overall rate will be reduced from historical levels.



Each vessel's individual halibut mortality rate (i.e., kg of halibut per metric ton of groundfish) will be calculated for aggregated yellowfin sole, rock sole, arrowtooth flounder, and flathead sole targets at the end of fourth quarter for comparison to the rate standard. Vessels that are above the test rate are considered outliers and will be subject to a monetary penalty.

***Minimum groundfish and halibut thresholds for test***

If a vessel has engaged in substantial fishing in the fourth quarter and finds that halibut rates are increasing to an unacceptable level, the fourth quarter program will create an incentive for this vessel to depart the fishery to avoid exceeding the rate standard. On the other hand, a vessel just beginning to fish in the fourth quarter that immediately realizes poor halibut rates may also wish to leave the fishery, but if facing penalties, the vessel would have an incentive to remain in the fishery in an attempt to reduce its rate and avoid the penalty. To remove that incentive, the fourth quarter program exempts any vessel from the penalties that has minimal catch (defined as less than 750 mt). This catch threshold is intended to strike a reasonable balance, allowing a vessel a reasonable opportunity to find acceptably clean fishing, but not creating an incentive for a vessel to remain in the fishery for an extended period, if acceptable fishing cannot be found.

The program also recognizes that a vessel's quarterly halibut catch, in and of itself, could reach an unacceptable level, regardless of the amount of target catch of the vessel. To prevent a vessel from taking an excessive amount of halibut a 20 mt threshold will be applied, after which the penalty system will apply to the vessel, regardless of whether the 750 mt threshold is reached. This threshold should create an incentive for a vessel with unacceptably high rates from continuing in the fishery, up to the 750 mt catch threshold.

Together the combination of a groundfish threshold and a halibut threshold in the fourth quarter create an incentive for vessels with unacceptably high halibut rates to depart the fishery quickly to avoid possible penalties.

***Monetary penalties***

Vessels that do not meet the fourth quarter rate standard in the aggregated flatfish targets will be subject to a fine. Fines range from a minimum of \$25,000 to a maximum of \$50,000, and are in addition to any annual fine assessed. Fines increase with both the halibut rate of the vessel and the amount of groundfish catch by the vessel. Increasing penalties with groundfish catch will create an incentive for a vessel to stop fishing, if it is unable to improve its rates.

Fourth Quarter Test Penalties				
Multiplier	Rate Standard (kg/mt)	Groundfish catch		
		750-3,499 mt	3,500-6,999 mt	Over 7,000 mt
1.00	12.2	\$25,000	\$27,500	\$30,000
1.50	18.1	\$35,000	\$37,500	\$40,000
2.00	24.2	\$45,000	\$47,500	\$50,000

**Example of the fourth quarter test**

The following illustration shows the application of the fourth quarter test to a vessel's performance in the fourth quarter in flatfish targets and the associated penalty calculation. The vessel had catches in all three of the flatfish targets included in the program. Since the calculation is based strictly on the halibut rate in all flatfish combined, the rates in the different targets and whether a vessel meets a catch threshold and rate standard in a specific target is not relevant. Instead, the vessel must exceed either the overall catch threshold or the halibut catch threshold and rate standard to be subject to a penalty. In the example, the vessel exceeded the both the overall catch and halibut thresholds and had a rate of 12.4 kg/mt of groundfish, which exceeds the halibut rate standard. As a result, the vessel would receive a penalty of \$27,500.

Target	Groundfish (mt)		Halibut (mt)		Halibut rate (kg/mt of groundfish)	Rate Standard	Penalty
	Vessel catch	Threshold	Vessel catch	Threshold			
Yellowfin	3,500	-	39	-	11.1	-	-
Rock sole	100	-	4	-	40.0	-	-
Arrowtooth flounder/flathead	100	-	3	-	30.0	-	-
Total	3,700	750	46	20	12.4	12.1	\$27,500

**Quarterly Outlier Test - Tier 2**

The quarterly outlier program provides additional scrutiny of vessels that fail to meet an annual halibut rate standard. The additional scrutiny is intended to increase the incentive for non-performing vessels to meet acceptable rate standards in the subsequent year. A vessel is subject to the quarterly monitoring program for any targets for which it failed the annual rate test the preceding year. Quarterly monitoring is in addition to the other monitoring under the plan. All vessels (including those subject to quarterly monitoring) will be subject to both the annual monitoring program and the fourth quarter monitoring program.

The quarterly rate standard for the first three quarters will be the same as the annual rate standard applicable in that calendar year. For example, a vessel that is subject to quarterly monitoring in a target would be subject to quarterly monitoring in the target at the annual rate standard for that target for the first three quarters of the year.

In the fourth quarter, vessels subject to quarterly monitoring will be required to meet the fourth quarter test rate that applies to all flatfish targets. Given the lack of substantial fishing in the rock sole and arrowtooth/flathead targets and the relatively higher rates in the quarter, applying the aggregated fourth quarter standard will induce the desired level of halibut avoidance across all targets. Vessels that are subject to quarterly monitoring would have an additional incentive to maintain low halibut bycatch rates. Vessels under quarterly monitoring would be subject to two penalties for failing to meet the fourth quarter rate, a halibut penalty under the quarterly plan (as described below) and a monetary penalty under the fourth quarter monitoring plan. This added incentive is intended to ensure that these vessels fish at an acceptable annual rate.

#### ***Minimum groundfish and halibut thresholds for test***

As with the other tests under the program, quarterly monitoring should not be structured in a manner that discourages a vessel that has done little fishing from exiting a fishery because it is finding unacceptable halibut rates. To do so, the quarterly rate standards will not be applied to vessels that do not reach a threshold catch amount. For the first three quarters the catch threshold would be the same as the annual catch threshold in the applicable target fishery (i.e., 1,000 mt in the yellowfin sole and rock sole targets and 500 mt in the arrowtooth flounder/flathead sole target). In the fourth quarter, the threshold catch amount would be 750 mt, which is the same threshold used in the fourth quarter test.

As in the fourth quarter test, the quarterly test recognizes that a vessel's quarterly halibut catch, in and of itself, could reach an unacceptable level, regardless of the amount of target catch of the vessel. To prevent a vessel from taking an excessive amount of halibut, a 20 mt threshold will be applied in each quarter. If that threshold is exceeded the penalty system will apply to the vessel, regardless of whether the applicable catch threshold is reached. The catch and halibut thresholds together create an incentive for vessels with unacceptably high halibut catch or rates to depart the fishery quickly to avoid possible penalties.

#### ***Halibut penalties***

A vessel that fails to meet the quarterly rate standard will be subject to a halibut penalty equal to the additional halibut that the vessel used as a result of exceeding the target rate. This amount is calculated as the difference between the vessel's actual halibut use and the use that the vessel would have achieved had it met the applicable rate standard. In other words, the vessel's halibut use in the quarter minus the vessel's groundfish catch in that quarter times the applicable rate standard.

#### ***Examples of the quarterly test***

Two illustrations of the quarterly test are shown below. In the first, the vessel is assumed to have exceeded the arrowtooth flounder/flathead sole halibut standard in 2016 and is monitored on a quarterly basis in 2017. For the first three quarters and annually, the vessel is monitored in the arrowtooth flounder/flathead sole target at a rate of 19.2 kg/metric ton, which is the 2017 annual rate. In the fourth quarter the vessel is monitored at the fourth quarter rate of 12.1 kg/mt of groundfish, which is the fourth quarter rate. The annual monitoring in the two other flatfish targets is not shown here.

The vessel has little catch in the arrowtooth flounder/flathead sole targets, in neither case reaching either the groundfish or halibut threshold needed to trigger application of the rate standard. In the first quarter, the vessel's rate exceeded the halibut rate standard, but that did not trigger a penalty because of the minimal catches and halibut of the vessel. In the third quarter, the vessel's arrowtooth flounder/flathead sole catch exceeded the groundfish threshold. The vessel's halibut bycatch was substantially below the rate standard, so the vessel avoided any penalty in that quarter. In the fourth quarter, the vessel's catch again exceeded the groundfish threshold, but the vessel again maintained a halibut bycatch rate below the rate standard avoiding any penalty for its fourth quarter fishing under either the quarterly test or the fourth quarter test. Annually, the vessel exceeded the groundfish threshold for the arrowtooth flounder/flathead sole target, but maintained a halibut rate below the standard, avoiding any penalty under the annual test.

Example 1 – Vessel that failed the 2016 annual test in the arrowtooth flounder/flathead sole target.

2017							
Quarter	Groundfish (mt)		Halibut (mt)		Halibut rate (kg/mt of groundfish)	Rate Standard	Penalty
	Vessel catch	Threshold	Vessel catch	Threshold			
1st - Arrowtooth/flathead	100	500	3	20	30.0	19.2	-
2nd - Arrowtooth/flathead	240	500	3	20	12.5	19.2	-
3rd - Arrowtooth/flathead	1,750	500	16	20	9.1	19.2	-
4th - All flatfish	3,000	750	8	20	2.7	12.1	-
Annual - Arrowtooth/flathead <sup>a</sup>	2,090	750	22	-	10.5	19.2	-

<sup>a</sup> Vessel had no arrowtooth or flathead target catch in fourth quarter.

In the second example, the vessel failed the yellowfin sole annual test in 2017. The vessel is then subject to quarterly monitoring in the first three quarters applying the 2018 annual yellowfin sole rate standard of 8.7 kg/mt of groundfish. In the fourth quarter the vessel is subject to monitoring at the fourth quarter rate of 12.1 kg/mt of halibut. The vessel is also subject to the annual test in the program's flatfish targets, but only the performance in the yellowfin target is shown here. It is monitored at the 2017 annual yellowfin sole rate standard of 8.7 kg/mt of groundfish.

In all quarters and annually, the vessel exceeded the groundfish catch threshold amounts, so it would need to maintain rates at or below the applicable standard to avoid penalties. In the first and third quarters, the vessel performed below the rate standard avoiding any penalties. In the second quarter, the vessel exceeded the 8.7 kg/mt of groundfish standard incurring a halibut penalty. The penalty is equal to its usage above the standard. The penalty is 29 mt of halibut, which is its halibut use minus its groundfish catch times the rate standard, which is 55 mt minus 3,000 mt times 0.0087 mt of halibut/mt of groundfish.

In the fourth quarter, the vessel exceeded the fourth quarter rate of 12.1 kg/mt of groundfish. The vessel's halibut penalty in that quarter is 12 mt, which is its usage (60 mt) minus the product of its groundfish and the rate standard (or 4,000 times 0.0121 mt of halibut/mt of groundfish). The vessel is also subject to a monetary penalty under the fourth quarter test of \$27,500, based on the fourth quarter monetary penalty schedule. The combined penalties are intended to provide an increased incentive to fish at an acceptable rate in the fourth quarter, when conditions are prone to higher halibut bycatch.

The vessel is also subject to the annual test in the yellowfin sole target. In the example, the vessel receives a \$65,000 penalty for exceeding the annual rate standard based on the 2018 yellowfin sole target penalty schedule. The penalty is greater than would have been applied in prior years, as the multiplier is decreased to require improvement from outliers over time.

Example 2 – Vessel that failed the 2017 annual test in the yellowfin sole target.

2018								
Quarter	Groundfish (mt)		Halibut (mt)		Halibut rate (kg/mt of groundfish)	Rate Standard	Halibut penalty	Monetary
	Vessel catch	Threshold	Vessel catch	Threshold				
1st - Yellowfin sole	2,500	1,000	18	20	7.2	8.7	-	NA
2nd - Yellowfin sole	3,000	1,000	55	20	18.3	8.7	29	NA
3rd - Yellowfin sole	1,500	1,000	6	20	4.0	8.7	-	NA
4th - All flatfish	4,000	750	60	20	15.0	12.1	12	\$27,000
Annual - Yellowfin sole <sup>a</sup>	8,000	-	86	-	10.8	8.7	NA	\$65,000

<sup>a</sup> Vessel had 3,000 mt of yellowfin sole target catch with 7 mt of halibut bycatch in fourth quarter.

**Conclusion**

The Amendment 80 sector has utilized a suite of tools to reduce halibut bycatch. Members of the sector have developed a variety of halibut avoidance measures that are formalized and documented in its halibut avoidance rules, which vessels use to guide their use of bycatch reduction tools. Member of the sector have devoted great efforts to develop and refine excluders that allow halibut to escape from target catch. The sector has also worked hard to develop the basis for regulatory revisions that would allow for the sorting and quick discard of halibut on deck to reduce halibut mortality. The sector and its vessel crews will continue to utilize and develop these tools as technology improves and deck sorting becomes a widespread, viable, and cost effective option for all vessels.

This report is part of a series of effective responses to requests to the sector to achieve the Council's bycatch goals. The sector efforts have included both achieving measurable bycatch reductions, as well as undertaking efforts to develop bycatch reduction technologies, particularly excluders and deck sorting. With the halibut avoidance plan, which is a primary focus of this report, the sector has created an environment in which all vessels have a strong incentive to use the best available means to reduce halibut bycatch throughout the year. The development of best practices, a halibut avoidance plan, and the advancement of the deck sorting EFP are all a necessary part of the sector's goal of fully harvesting its allocations despite the recent Council action to reduce the halibut available to the sector by 25 percent and the Council's request to work toward reducing halibut below that limit.

## Appendix

### **Alaska Seafood Cooperative Halibut Bycatch Rules for 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 O26 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 O26 bycatch rates, including the effects on halibut rates and O26 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 (including O26 bycatch rates) in the fisheries. These charts will show halibut bycatch (including O26 bycatch) by target fishery.

**Decksorting** - On approval of the cooperative's 2015 decksorting Exempted Fishing Permit, vessels are encouraged to use decksorting to reduce mortality of halibut (particularly O26 halibut 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 O26 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 O26 halibut bycatch performance. Meetings will include discussions of:

- 1) Prevailing halibut bycatch rates and performance (and particularly 4CDE accounting area O26 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.