

## Draft Amendment 23 Executive Summary

In New England, the New England Fishery Management Council (Council) is charged with developing management plans that meet the requirements of the Magnuson-Stevens Fishery Conservation and Management Act (M-S Act). The Northeast Multispecies (Groundfish) Fishery Management Plan (FMP) specifies the management measures for thirteen groundfish species (cod, haddock, yellowtail flounder, pollock, plaice, witch flounder, white hake, windowpane flounder, Atlantic halibut, winter flounder, redfish, ocean pout, and Atlantic wolffish) off the New England and Mid-Atlantic coasts. Commercial and recreational fishermen harvest these species. The commercial groundfish fishery consists of primarily “sectors”, voluntary self-selecting groups with individual catch entitlements, as well as “common pool” vessels that fish outside the sector system under more traditional input management measures such as possession limits and days-at-sea. The FMP has been updated through a series of amendments and framework adjustments.

Amendment 16, which became effective on May 1, 2010, adopted a broad suite of management measures to achieve the fishing mortality targets necessary to rebuild overfished stocks and meet other requirements of the M-S Act.

Amendment 16 also updated the requirements for sector and common pool monitoring programs, including at-sea monitoring and dockside monitoring requirements. Following that action, Framework 45 adjusted the dockside monitoring program. Framework 48 later discontinued the dockside monitoring program. Additionally, Framework 48 specified the overall goals and objectives of the groundfish monitoring program (Section 3.3.2). Framework 55 clarified that the primary goal of the monitoring program is to verify area fished, catch, and discards by species and gear type; and should be done in the most cost effective means practicable. Framework 55 further clarified that all other goals and objectives of groundfish monitoring programs are considered equally weighted secondary goals.

Amendment 23 would maintain the current goals and objectives of the groundfish monitoring program, but consider measures to further improve documentation of catch, or catch accounting. It is the Council’s intent that the catch reporting requirements are fair and equitable for all commercial groundfish fishermen, while maximizing the value of collected catch data, and minimizing costs for the fishing industry and the National Marine Fisheries Service (NMFS). The goals and objectives of this action are more fully described in Section 3.3., and the purpose and need is included in Section 3.2.

This draft amendment document and draft environmental impact statement (DEIS) encapsulates the work of the Council on this action. The components of this DEIS include the Alternatives Under Consideration (Section 4.0), the Alternatives Considered but Rejected (Section 5.0), the Affected Environment (Section 6.0), and the Environmental Impacts of the Management Alternatives (Section 0). In January 2020, the Council selected preferred alternatives and approved the DEIS for submission to NMFS.

### ***Proposed Action.***

Table 1 is a summary of the draft alternatives, with preferred alternatives identified. The Council recommends the following as preferred alternatives in Amendment 23. Preferred alternatives are subject to change.

- *Commercial Groundfish Monitoring Program Revisions (Sectors Only)*. Sets the standard at a fixed total at-sea target monitoring (ASM) coverage level, based on a percentage of trips, at 100% coverage. Allows additional sector monitoring tools, in addition to human ASM, including the audit model with electronic monitoring (EM) and maximized retention with electronic monitoring combined with dockside monitoring (DSM). Establishes a review process to evaluate the

monitoring coverage rate. Allows for additional monitoring tools and vessel specific coverage levels through a future framework adjustment.

- *Commercial Groundfish Monitoring Program Revisions (Sectors and Common Pool)*. No action would maintain the status quo, no mandatory dockside monitoring program for sectors and the common pool.
- *Sector Reporting*. The Council did not select a preferred alternative in this section. No action would maintain current sector reporting requirements.
- *Funding/Operation Provisions of Groundfish Monitoring (Sectors and Common Pool)*. Allows for waivers from monitoring requirements for sectors and common pool under certain conditions.
- *Management Uncertainty Buffers for the Commercial Groundfish Fishery (Sectors Only)*. Eliminates the management uncertainty buffer for sector sub-ACLs (allocated stocks only) with 100% monitoring of all sector trips.
- *Remove Commercial Groundfish Monitoring Requirements for Certain Vessel Under Certain Conditions*. Removes monitoring program requirement for vessels fishing exclusively west of 71 degrees 30 minutes west longitude from at-sea and dockside monitoring coverage requirements. Establishes a review process for vessel to be removed from commercial groundfish monitoring program requirements

### ***Environmental Consequences of Proposed Action.***

Table 2 summarizes the potential impacts of the management measures under consideration in Amendment 23 on each of the VECs identified in this amendment and described in the Affected Environment and compared to No Action.

#### *Impacts on Managed Resources.*

Monitoring coverage of 100 percent, much higher than past and current coverage levels, will be in place, which should result in more accurate information on catch and fully accounted for discard mortality. In the short term, improved catch accounting should reduce fishing effort and fishing mortality, which in the long term should allow for rebuilding of overfished stocks. In the longer-term analytical assessments should improve with better catch data. Allowing sectors to use additional sector monitoring tools should improve data quality and reduce uncertainty, and contribute to improved catch accounting. Establishing a review process for coverage levels and allowing new sector monitoring tools and vessel specific coverage levels to be considered in a framework action are administrative in nature, and may have indirect impacts on the managed resource but would not be expected to change total fishing effort. Allowing waivers from monitoring requirements if NMFS does not have shoreside funding is not expected to affect total fishing effort but could result in lower monitoring coverage levels, which could impact the managed resource. Eliminating the management uncertainty buffers for sector ACLs for allocated stocks may result in an increase in fishing effort, but this is uncertain. This option requires that 100% monitoring coverage is selected, which will reduce uncertainty in catch information and reduce fishing mortality. Removing monitoring requirements for vessels fishing in a certain geographic area is expected to have negative impacts on the managed resource, particularly for stocks with substantial catches in this area (SNE/MA stocks, some of which are in rebuilding plans) as catch information would be less accurate and fishing effort in this area may increase; however, total fishing effort is not expected to be affected.

#### *Impacts on Nontarget Species.*

Monitoring coverage of 100 percent, much higher than past and current coverage levels, will be in place, which should result in more accurate information on catch and fully accounted for discard mortality. In the short term, improved catch accounting should reduce fishing effort and fishing mortality, which in the

long term should allow for rebuilding of overfished stocks. Allowing sectors to use additional sector monitoring tools should improve data quality and reduce uncertainty, and contribute to improved catch accounting. Establishing a review process for coverage levels and allowing new sector monitoring tools and vessel specific coverage levels to be considered in a framework action are administrative in nature, and may have indirect impacts on non-target species but would not be expected to change total fishing effort. Allowing waivers from monitoring requirements if NMFS does not have shoreside funding is not expected to affect total fishing effort but could result in lower monitoring coverage levels, which could impact non-target species. Eliminating the management uncertainty buffers for sector ACLs for allocated stocks may result in an increase in fishing effort, but this is uncertain. This option requires that 100% monitoring coverage is selected, which will reduce uncertainty in catch information and reduce fishing mortality. Removing monitoring requirements for vessels fishing in a certain geographic area is expected to have negative impacts on non-target species, as catch information would be less accurate and fishing effort in this area may increase; however, total fishing effort is not expected to be affected.

#### *Impacts on Physical Environment and Essential Fish Habitat.*

Monitoring coverage of 100 percent, much higher than past and current coverage levels, will be in place, may result in reduced groundfish fishing activity and provide some minor short-term benefits to habitat. Over the long term, if 100% coverage contributes to higher catch limits, fishing effort could increase in the future, which would have negative impacts to habitat. Allowing sectors to use additional sector monitoring tools could increase fishing effort, if the use of EM in place of human at-sea monitors as a monitoring tool facilitates greater effort. Establishing a review process for coverage levels and allowing new sector monitoring tools and vessel specific coverage levels to be considered in a framework action are administrative in nature, and would not be expected to change total fishing effort. Allowing waivers from monitoring requirements if NMFS does not have shoreside funding is not expected to affect total fishing effort. Eliminating the management uncertainty buffers for sector ACLs for allocated stocks may result in an increase in fishing effort, but this is uncertain. Removing monitoring requirements for vessels fishing in a certain geographic area is expected to have slight negative impacts on habitat, as fishing effort in this area may increase; however, total fishing effort is not expected to be affected.

#### *Impacts on Protected Resources.*

The modifications in management measures may affect protected resources, but the preferred alternatives identified in this action are not expected to have substantial impacts on protected resources. Monitoring coverage of 100 percent, much higher than past and current coverage levels, will be in place, which should have indirect benefits to protected resources by providing additional information on interactions with fishing gear, which should reduce uncertainty in bycatch estimates. While changes in total fishing effort are not expected, if over the long term 100% monitoring coverage contributes to rebuilding of stocks to sustainable levels and higher catch limits, fishing effort could increase in the future, which may increase potential interactions with protected species. Allowing sectors to use additional sector monitoring tools is expected to have indirect negative impacts on protected resources, as there may be a loss of data on interactions with fishing gear compared to use of human at-sea monitors if information on protected species is not collected through EM. However, any indirect negative impacts would not be expected to have a significant adverse impact, and could be mitigated with a properly designed protocol including specific camera angles and data recording standards to potentially document more protected species interactions. Establishing a review process for coverage levels and allowing new sector monitoring tools and vessel specific coverage levels to be considered in a framework action are administrative in nature, and would not have impacts on protected resources. Allowing waivers from monitoring requirements if NMFS does not have shoreside funding is not expected to affect total fishing effort but could result in lower monitoring coverage levels, which could indirectly impact protected resources.

Eliminating the management uncertainty buffers for sector ACLs for allocated stocks may result in an increase in fishing effort, but this is uncertain. This option requires that 100% monitoring coverage is selected, which will provide additional information on gear interactions which reduces uncertainty in bycatch estimates. Removing monitoring requirements for vessels fishing in a certain geographic area is expected to have direct and indirect low negative impacts on protected resources, as fishing effort may increase in the exemption area, and a loss of data on interactions with fishing gear would occur; however, total fishing effort is not expected to be affected.

#### *Impacts on Human Communities.*

The preferred alternatives proposed in this action are expected to have substantial socioeconomic impacts. Monitoring coverage of 100 percent, much higher than past and current coverage levels, will be in place, which will result in higher operating costs than under past and current coverage levels. 100% monitoring coverage may be seen as overly burdensome by fishing communities. However, under 100% monitoring coverage enforceability and risk of non-compliance improve, which should improve the fairness and equitability of management measures. In the short term, impacts of 100% monitoring coverage on human communities could be reduced if federal reimbursements for monitoring costs and government subsidies are available. Impacts over the long-term will vary depending on whether federal reimbursements of monitoring costs will continue into the future. Allowing sectors to use additional sector monitoring tools reduces costs of monitoring relative to human at-sea monitors and should improve flexibility in the management system. Initial costs of installing EM may be high which may have negative impacts in the short term, but over the long-term EM may be more cost effective than human at-sea monitors. Distributional impacts of allowing sectors to use EM as a sector monitoring tools are expected, as vessels that participate more, or are more efficient, may have positive impacts as EM is cheaper than human observers for these vessels, and vessels that participate less may have negative impacts, as EM is less cost effective for these vessels.

Establishing a review process for coverage levels and allowing new sector monitoring tools and vessel specific coverage levels to be considered in a framework action are administrative in nature, and may have indirect impacts on human communities but would not be expected to impose additional costs. Allowing waivers from monitoring requirements if NMFS does not have shoreside funding is expected to have positive impacts, to the extent that fishing effort is constrained by the selected coverage level. Eliminating the management uncertainty buffers for sector ACLs for allocated stocks results in higher operating costs since 100% monitoring coverage required for this option; however, revenues are maximized relative to other monitoring options in this action, maximizing operating profits relative to the other 100% monitoring options. Removing monitoring requirements for vessels fishing in a certain geographic area is expected to have positive impacts on fishing communities that fish exclusively in the exemption area as monitoring costs would be reduced; however, low positive impacts for the fleet overall.

#### ***Alternatives to the Proposed Action.***

There are a number of alternatives analyzed in the document that are not identified as preferred alternatives (Table 1). The potential impacts for all alternatives under consideration compared to No Action are provided (Table 2). Summaries of the most substantial impacts are provided.

**Table 1 - Amendment 23 Alternatives, with Council preferred alternatives indicated (Pref).**

	Alternatives	Description
<b>4.1</b>	<b>Commercial Groundfish Monitoring Program (Sectors only)</b>	
<b>4.1.1</b>	<b>Sector monitoring standard (coverage level)</b>	
4.1.1.1	Sector Monitoring Standard Option 1 (No Action)	Minimum coverage levels must meet CV precision standard specified in SBRM using fishery performance criteria, and other factors can be considered
4.1.1.2	<b>(Pref)</b> Sector Monitoring Standard Option 2 (Fixed total at-sea monitoring coverage level based on <u>% of trips</u> )	Fixed total would be identified for deploying human observers at-sea. Sectors would achieve the standard through use of human observers or options for substitute sector monitoring tools (Section 4.1.2)
	Sub-option 2A – 25%	
	Sub-option 2B – 50%	
	Sub-option 2C – 75%	
	<b>(Pref)</b> Sub-option 2D – 100%	
4.1.1.3	Sector Monitoring Standard Option 3 (Fixed total at-sea monitoring coverage level based on <u>% of catch</u> )	Fixed total would be identified for deploying human observers at-sea. Sectors would achieve the standard through use of human observers or options for substitute sector monitoring tools (Section 4.1.2)
	Sub-option 3A – 25%	
	Sub-option 3B – 50%	
	Sub-option 3C – 75%	
	Sub-option 3D – 100%	
<b>4.1.2</b>	<b>Sector monitoring tools (options for meeting monitoring standards)</b>	
4.1.2.1	Sector Monitoring Tools Option 1 – EM in place of human at-sea monitors	Sectors could choose EM to monitor catch in place of human at-sea monitors (but not to replace NEFOP human observers). EM would only be required to run on trips selected for coverage under the selected coverage rate selected above.

	<b>Alternatives</b>	<b>Description</b>
4.1.2.2	<b>(Pref)</b> Sector Monitoring Tools Option 2 – Audit model EM	Approve the use of audit model EM in place of human at-sea monitors (but not to replace NEFOP human observers). EM runs 100% of trips and subset of hauls or trips reviewed to verify VTR reported discards. Video review rate would be determined by NMFS and could be reduced through evaluation by NMFS. The Council supports the initial review rates provided from NMFS in its proposed EM option for sectors.
4.1.2.3	<b>(Pref)</b> Sector Monitoring Tools Option 3 – Maximized retention EM	Approve the use of maximized retention EM in place of human at-sea monitors (but not to replace NEFOP human observers). EM runs 100% of trips and verifies that all allocated, non-prohibited GF are landed, paired with dockside monitoring to sample catch. Vessels would be required to land all GF of all sizes, no discarding of non-prohibited fish.
<b>4.1.3</b>	<b>Total Monitoring Coverage Level Timing</b>	Has varied over time, but ASM coverage level usually available before SBRM analysis used to determine NEFOP levels. Regulations require sectors submit prelim rosters by Dec 1.
4.1.3.1	Coverage Level Timing Option 1 (No Action)	Announced when necessary analyses are available.
4.1.3.2	Coverage Level Timing Option 2 – Knowing total monitoring coverage level at a time certain	3 weeks prior to annual sector enrollment deadline – this option would only apply to current CV method for target coverage levels (4.1.1.1).
<b>4.1.4</b>	<b>Review process for sector monitoring coverage</b>	
4.1.4.1	Coverage Review Process Option 1 (No Action)	No official schedule – sector monitoring coverage rates would be reviewed periodically as part of the goals and objectives of the sector monitoring program
4.1.4.2	<b>(Pref)</b> Coverage Review Process Option 2 –Establish a review process for monitoring coverage rates	Once 2 years of fishing year data is available and periodically after that. Metrics would be developed and indicators for how well program has improved accuracy while minimizing costs. This review would most likely be done by the Groundfish PDT with substantial support by NEFSC and GARFO.
4.1.5	<b>(Pref)</b> Addition to list of framework items	Council would be able to consider adding new sector monitoring tools that meet or exceed monitoring standards or vessel specific coverage levels by framework action.
<b>4.2</b>	<b>Commercial Groundfish Monitoring Program Revisions (Sectors and Common Pool)</b>	
<b>4.2.1</b>	<b>Dockside monitoring program (DSM) (Sectors and Common Pool)</b>	

	<b>Alternatives</b>	<b>Description</b>
4.2.1.1	<b>(Pref)</b> DMS Option 1 (No Action)	No current requirement, but a sector can develop as part of its operations plan, and NMFS can approve.
4.2.1.2	DSM Option 2 – Mandatory DSM for entire commercial GF fishery	Mandatory DSM for entire GF fishery (sectors and common pool) at 100% of all trips.
<b>4.2.2</b>	<b>Dockside monitoring program structure and design</b>	
4.2.2.1	DSM funding responsibility	
4.2.2.1.1	DSM Funding Responsibility Option A – Dealer responsibility	Dealers responsible for DSM costs.
4.2.2.1.2	DSM Funding Responsibility Option B – Vessel responsibility	Vessels responsible for DSM costs.
4.2.2.2	DSM program administration	
4.2.2.2.1	DSM Administration Option A – Individual contracts with DSM providers	Dealers or vessels contract directly with third-party dockside monitor providers.
4.2.2.2.2	DSM Administration Option B – NMFS administered DSM program	Single DSM program administered by NMFS, through approved independent third-party dockside monitor providers.
4.2.2.3	Options for lower dockside monitoring coverage levels (20% coverage)	
4.2.2.3.1	Lower coverage levels Option A	DSM would be randomly assigned to ports with low volumes of groundfish landings (2016-2018) - all ports except New Bedford, MA; Gloucester, MA; Boston, MA; Portland, ME; Chatham, MA; Point Judith, RI; Seabrook, NH; Rye, NH; and Portsmouth, NH - at a lower coverage level, 20%. Periodic re-evaluation of what constitutes a low volume port would occur after 2 years of data available, every 3 years after that.
4.2.2.3.2	Lower coverage levels Option B	Vessels with less than 46,297 pounds annual average (2016-2018) or dealers that receive landings from vessels with less than 46,297lbs pounds would have lower coverage, 20%. Periodic re-evaluation of what constitutes a low volume vessel would occur after 2 years of data available, every 3 years after that.

	<b>Alternatives</b>	<b>Description</b>
4.2.2.4	Options for DSM safety and liability associated with fish hold inspections	
4.2.2.4.1	Fish hold inspection Option A – DSM fish hold inspections required	Would be allowed access for inspection, they must have insurance, they can refuse but must document reason.
4.2.2.4.2	Fish hold inspection Option B – Alternative methods for inspecting fish holds (cameras)	Cameras can be used to verify all retained catch is offloaded, as an alternative to dockside monitors directly accessing fish holds.
4.2.2.5.3	Fish hold inspection Option C – No fish hold inspection required, captain signs affidavit	Captain certify all catch has been removed, subject to penalties
<b>4.3</b>	<b><i>Sector Reporting</i></b>	
4.3.1	Sector Reporting Option 1 (No Action)	Weekly reporting of landings and discards and year end reports.
4.3.2	Sector Reporting Option 2 – Grant RA authority to streamline sector reporting requirements	RA could revise reporting requirements if specific details are deemed sufficient by the RA.
<b>4.4</b>	<b><i>Funding/Operational provisions of groundfish monitoring program (Sectors and Common Pool)</i></b>	
4.4.1	Funding Provisions Option 1 (No Action)	Industry is required to fund at-sea monitoring costs.
4.4.2	Funding Provisions Option 2 – Provisions for an increase or decrease in funding for the GF monitoring program	
4.4.2.1	Funding Provisions Sub-option 2A – Higher monitoring coverage levels if NFMS funds are available (Sectors Only)	At-sea monitoring could be set at higher coverage levels than required if NMFS gets additional funds. Could be done on a limited basis to evaluate bias.
4.2.2.2	<b>(Pref)</b> Funding Provisions Sub-option 2B – waivers for monitoring requirements allowed (Sectors and Common Pool)	Vessels could be issued waivers to exempt them from industry-funded monitoring requirements, for either a trip or the fishing year, if coverage was unavailable due to insufficient funding for NMFS shoreside costs for the specified target coverage level.



	<b>Alternatives</b>	<b>Description</b>
<b>4.5</b>	<b><i>Management uncertainty buffers for the commercial groundfish fishery (Sectors only)</i></b>	
4.5.1	Management Uncertainty Buffer Option 1 (No Action)	5% of the ABC by default, and for stocks with less uncertainty it is set at 3% (no state water catch), for stocks with more it is set at 7% (zero possession and discard only stocks)
4.5.2	<b>(Pref)</b> Management Uncertainty Buffer Option 2 – Elimination of management uncertainty buffer for Sector ACLs with 100% monitoring of all sector trips	Revise the management uncertainty buffer for the sector ACL for each allocated groundfish stock to be zero, if the option for 100 percent at-sea monitoring is selected.
<b>4.6</b>	<b><i>Remove commercial groundfish monitoring program requirements for certain vessels fishing under certain conditions</i></b>	
4.6.1	Removal of monitoring requirements Option 1 (No Action)	Sector vessels fishing exclusively with extra-large mesh gillnets greater than 10 inches and in the SNE/MA or inshore GB BSA are not subject to at-sea monitoring
4.6.2	Removal of monitoring requirements Option 2 – Vessels fishing exclusively west of <u>72 30 W</u> would not be subject to monitoring requirements on trips in that area	
4.6.2.1	Removal of monitoring requirements Option 2A (Sectors only)	Sector vessels fishing exclusively west of 72 30 W would not be subject to <u>at-sea monitoring</u> . Measures under No Action would remain in place.
4.6.2.2	Removal of monitoring requirements Option 2B (Sectors and Common Pool)	Vessels fishing exclusively west of 72 30 W would not be subject to <u>DSM</u> . Measures under No Action would remain in place.
4.6.3	<b>(Pref)</b> Removal of monitoring requirements Option 3 – Vessels fishing exclusively west of <u>71 30 W</u> would not be subject to monitoring requirements on trips in that area	
4.6.3.1	<b>(Pref)</b> Removal of monitoring requirements Option 3A (Sectors only)	Sector vessels fishing exclusively west of 71 30 W would not be subject to <u>at-sea monitoring</u> . Measures under No Action would remain in place.
4.6.3.2	<b>(Pref)</b> Removal of monitoring requirements Option 3B (Sectors and Common Pool)	Vessels fishing exclusively west of 72 30 W would not be subject to <u>DSM</u> . Measures under No Action would remain in place.

	<b>Alternatives</b>	<b>Description</b>
4.6.4	Review process for vessels removed from commercial groundfish monitoring program requirements	
4.6.4.1	Review process for vessels removed from commercial groundfish monitoring program requirements Option 1 (No Action)	Currently there is no formal review process to verify that the catch composition from vessels fishing on trips not subject to monitoring requirements have little to no groundfish.
4.6.4.2	<b>(Pref)</b> Review process for vessels removed from commercial groundfish monitoring program requirements Option 2: Implement a review process	After two years of fishing data is available, and every three years after that, the PDT would review catch composition from vessels fishing on trips not subject to monitoring requirements to verify that the catch composition has little to no groundfish.

Table 2 - Draft Impacts of Amendment 23 alternatives.

	Alternatives	Biological and Physical Impacts	Economic and Social Impacts
<b>4.1</b>	<b>Commercial Groundfish Monitoring Program (Sectors only)</b>		
<b>4.1.1</b>	<b>Sector monitoring standard (coverage level)</b>		
4.1.1.1	Sector Monitoring Standard Option 1 (No Action)	<p>The average total, target and realized coverage levels from 2010-2017 have been 25% and 22% respectively (13% ASM-only). There are multiple uncertainties with the current system (i.e. observed trips are not representative of unobserved trips), which have <b>negative</b> biological impacts on regulated groundfish and other species.</p> <p>For all human at-sea monitoring coverage options: at-sea monitoring has indirect <b>low positive to positive</b> impacts on protected species, depending on the coverage level option, by providing information on interactions with fishing gear.</p> <p>For all human at-sea monitoring coverage options: impacts to EFH are <b>negligible to positive</b>, depending on the coverage level option.</p>	<p><u>Static monitoring costs</u> – Estimated at 13% and 22%. At 13% \$0.86 - \$0.93 mil. and \$1.45-\$1.57 mil. at 22%. NEFOP contribution to observer coverage rates overall is about \$0.64 mil.</p> <p><u>Dynamic fleet and vessel impacts</u> – Similar costs to static estimates above for 13% and 22% (\$0.9 mil. and \$1.5 mil. respectively). Aggregate fleet-wide revenue \$1 mil. lower under 13% coverage (\$70.8 vs. \$71.3 mil.). Increased cost may induce fisherman with higher operating costs to exit fishery. Larger vessels that participate more could see increase in gross revenue and operating profits.</p> <p><u>Enforceability and Compliance</u> – Low and Low. The risk of noncompliance under status-quo levels of monitoring has a high risk of non-compliance with reporting requirements, and a very low ability for enforcement to detect and prosecute violations. <b>Overall, if the industry bears the cost for monitoring (No Action) there will be negative impacts relative to status quo, since industry has been reimbursed for monitoring costs. Impacts are increasingly negative when risks of non-compliance and low enforceability are considered.</b></p> <p><u>Social Impacts</u> – For all at-sea monitoring options: <b>neutral to negative</b> social impacts depending on the coverage level option. Higher at-sea monitoring coverage levels could produce <b>negative impacts</b> on crew attitudes if the increased costs result in decreases in crew compensation, and could exacerbate existing negative attitudes towards fisheries management.</p>

	Alternatives	Biological and Physical Impacts	Economic and Social Impacts
4.1.1.2	Sector Monitoring Standard Option 2 (Fixed total at-sea monitoring coverage level based on % of trips)	Higher levels of monitoring are expected to have <b>positive</b> biological impacts on groundfish and other species. In the short-term improvements in monitoring reduce fishing mortality through better catch accounting. In the long-term analytical assessments should improve with better catch data, thus improvements in catch advice and management.	Overall, the static and dynamic economic impacts of Option 2 range from neutral to negative (more negative as coverage rate increases). The risk of non-compliance and ability to enforce violations improves under higher coverage standards (higher scores under higher coverage standards).  <b>Overall, operating costs are higher (negative impacts from reduced profits) under higher coverage standards, but enforceability and risk of non-compliance improve under higher standards (positive impacts).</b>
	Sub-option 2A – 25%	A 25% fixed percentage coverage rate is expected to have <b>neutral</b> biological impacts relative to the No Action, and would continue to have <b>negative</b> biological impacts. Further, 75% of the groundfish trips would not have accurate estimates of discards since PDT analysis has shown that observed trips are not representative of unobserved trips.	<u>Static monitoring costs</u> - \$1.64-\$1.8 mil., similar to No Action at 22%.  <u>Dynamic fleet and vessel impacts</u> – Aggregate fleet-wide revenue slightly higher than No Action 22% coverage (\$71.5 mil.). Operating profits slightly lower than 13% coverage, and equal to 22% estimate.  <u>Enforceability and Compliance</u> – Low and Low.
	Sub-option 2B – 50%	<b>Low positive</b> compared to No Action (22% average coverage rate). This option would provide accurate estimates of groundfish landings and discards for half of all the groundfish trips. However, there is the potential for strong incentives to misreport on the unobserved trips under 50% coverage. Therefore, impacts to regulated groundfish from this option would still be considered to be <b>negative</b> , similar to the option for 25% coverage.	<u>Static monitoring costs</u> - \$3.24 - \$3.54 mil.  <u>Dynamic fleet and vessel impacts</u> – Aggregate fleet-wide revenue slightly lower than at 25% (\$71.1 mil). Operating profits substantially lower than at 25% (\$48.2 mil, or \$2 mil. lower than at 25%).  <u>Enforceability and Compliance</u> – Medium and Low.
	Sub-option 2C – 75%	<b>Positive</b> compared to No Action (22% average coverage rate). Since 75% of all groundfish trips will have accurate estimates of discards this option has positive biological impacts on groundfish and other species.	<u>Static monitoring costs</u> - \$4.57 - \$5.2 mil.  <u>Dynamic fleet and vessel impacts</u> - Aggregate fleet-wide revenue higher than at 50% (\$72.3 mil). Operating profits lower than at 50% (\$47.6 mil).

	Alternatives	Biological and Physical Impacts	Economic and Social Impacts
			<i>Enforceability and Compliance</i> – Medium-high and medium.
	Sub-option 2D – 100%	<b>Positive</b> compared to No Action (22% average coverage rate). Discard mortality would be fully accounted for under 100% coverage.	<i>Static monitoring costs</i> - \$5.44 - \$6.0 at 91% ASM (assuming 9% NEFOP coverage). <i>Dynamic fleet and vessel impacts</i> - Aggregate fleet-wide revenue lower than 75% (\$71 mil). Operating profits lower than at 75% (\$46.2 mil). <i>Enforceability and Compliance</i> – High and High.
4.1.1.3	Sector Monitoring Standard Option 3 (Fixed total at-sea monitoring coverage level based on <u>% of catch</u> )	Higher levels of monitoring are expected to have <b>positive</b> biological impacts on groundfish and other species. The PDT completed a simulation analysis of what coverage levels would be necessary to achieve a given coverage rate of total catch for any given allocated stock. The simulations show that 50% coverage across all trips would result in a 90% probability that at least 25% of the total catch of every allocated stock was observed.	Overall, the static and dynamic economic impacts of Option 3 are negative (more negative as coverage rate increases). The risk of non-compliance and ability to enforce violations improves under higher coverage standards (higher scores under higher coverage standards).  <b>Overall, operating costs are higher (negative impacts from reduced profits) under higher coverage standards, but enforceability and risk of non-compliance improve under higher standards (positive impacts).</b>
	Sub-option 3A – 25%	A 25% percentage coverage rate of total catch of each allocated groundfish stock is expected to have <b>low positive</b> biological impacts for regulated groundfish relative to the No Action. However, there are still concerns that the unobserved portion of groundfish trips would not have accurate estimates of discards since PDT analysis has shown that observed trips are not representative of unobserved trips.	<i>Static monitoring costs</i> - \$3.24 - \$3.54 mil.  <i>Dynamic fleet and vessel impacts</i> – Aggregate fleet-wide revenue slightly lower than at 25% (\$71.1 mil). Operating profits substantially lower than at 25% (\$48.2 mil, or \$2 mil. lower than at 25%).  <i>Enforceability and Compliance</i> – Medium and Low.

	Alternatives	Biological and Physical Impacts	Economic and Social Impacts
	Sub-option 3B – 50%	The simulation exercise showed that increasing coverage rates to 70% of trips would confer roughly a 90% chance that 50% of total catch was observed for each allocated groundfish stock. Thus, 50% monitoring coverage rate of total catch of each allocated groundfish stock is expected to have <b>positive</b> biological impacts. However, there are still concerns that the unobserved portion of groundfish trips would not have accurate estimates of discards since PDT analysis has shown that observed trips are not representative of unobserved trips.	<p><u>Static monitoring costs</u> - \$4.3 - \$4.8 mil.</p> <p><u>Dynamic fleet and vessel impacts (under 75% coverage):</u> Fleetwide revenue may increase by \$1.4 million, offsetting static costs.</p> <p><u>Enforceability and Compliance</u> – Medium and medium.</p>
	Sub-option 3C – 75%	Increasing coverage rates to 90% of trips would confer roughly a 90% chance that 75% of total catch was observed for each stock. Therefore a 75% percentage coverage rate of total catch of each allocated groundfish stock is expected to have <b>positive</b> biological impacts relative to the No Action. However, there are still concerns that the unobserved portion of groundfish trips would not have accurate estimates of discards.	<p><u>Static monitoring costs</u> - \$5.44 - \$6.0 at 91% ASM (assuming 9% NEFOP coverage).</p> <p><u>Dynamic fleet and vessel impacts</u> - Aggregate fleet-wide revenue lower than 75% (\$71 mil). Operating profits lower than at 75% (\$46.2 mil).</p> <p><u>Enforceability and Compliance</u> – High and High.</p>
	Sub-option 3D – 100%	<b>Positive</b> compared to No Action (22% average coverage rate). Discard mortality would be fully accounted for under 100% coverage.	<p><u>Static monitoring costs</u> - \$5.44 - \$6.0 at 91% ASM (assuming 9% NEFOP coverage).</p> <p><u>Dynamic fleet and vessel impacts</u> - Aggregate fleet-wide revenue lower than 75% (\$71 mil). Operating profits lower than at 75% (\$46.2 mil).</p> <p><u>Enforceability and Compliance</u> – High and High.</p>

	Alternatives	Biological and Physical Impacts	Economic and Social Impacts
<b>4.1.2</b>	<b>Sector monitoring tools (options for meeting monitoring standards)</b>		
4.1.2.1	Sector Monitoring Tools Option 1 – EM in place of human at-sea monitors	<p>Generally <b>neutral</b> impacts assuming data from EM equivalent to human observers. For stocks that are more difficult to identify from video (red hake), potential low negative impacts compared to human observers. But EM can monitor every tow and there is no potential for coercion or falsifying data.</p> <p>For all sector monitoring tools options: EM may have <b>indirect negative</b> impacts to protected species – potential loss of information on interactions. However, any loss of data is not expected to have a significant adverse impact.</p> <p>For all sector monitoring tools options: <b>low negative impacts</b> to EFH if substitution facilitates greater fishing effort.</p>	<p>Depending on the coverage level selected, this option may be more costly than human observers as year one equipment and installation costs are approximately \$10k per vessel. That equates to approximately 15-20 observed sea days. Video review can be anywhere from \$150 to \$700 per day. If video review for these vessels were to average \$400 per day, the Council would need to select an ASM level that induces more than approximately 35 observed sea days for vessels opting EM in place of ASM in order for this option to reduce costs. Distributional impacts expected – vessels that participate more, or are more efficient may have <b>positive economic impacts</b> (EM cheaper than human observers), and vessels that participate less may have <b>negative economic impacts</b>.</p> <p><u>Enforceability and compliance</u> – low, and similar to scores above under each coverage level</p> <p>Social Impacts – For all Sector Monitoring Tools options: <b>Long-term neutral to positive social impacts</b> if EM is more cost effective than human at-sea monitors over time, but <b>short-term negative impacts</b> as a result of the initial costs associated with installing EM equipment and additional responsibilities that accompany the maintenance of EM systems.</p>

	Alternatives	Biological and Physical Impacts	Economic and Social Impacts
4.1.2.2	Sector Monitoring Tools Option 2 – Audit model EM	If developed correctly, audit model EM should produce similar biological impacts to 100% human observer coverage, and <b>positive</b> biological impacts compared to current No action rates. Potentially low negative impacts for stocks difficult to identify from video.	<p><u>Static monitoring costs</u> – In year 1 cost of \$5.72 mil. (\$2.68 with subsidy); year2 = \$2.01 mil.; and year3 = \$1.23 mil.</p> <p><u>Enforceability and Compliance</u> – High and High, but non-compliance still possible if review rate is low, cameras focused on discards rather than landings, and no dockside monitoring component.</p> <p><b>Overall, year 1 static monitoring costs are slightly higher than Sub-Option 3D, 100% ASM, but are significantly lower in subsequent years or under the subsidized scenario. Un-subsidized costs under Option 2 would have a negative impact on the fishery relative to No Action, and possibly more highly negative impacts relative to Status Quo.</b></p>
4.1.2.3	Sector Monitoring Tools Option 3 – Maximized retention EM	If developed correctly, max retention EM should produce similar biological impacts to 100% human observer coverage, and <b>positive</b> biological impacts compared to current No action rates. Potentially low negative impacts for stocks difficult to identify from video. If there is a shift to targeting smaller younger fish likely negative biological impacts.	<p><u>Static monitoring costs</u> - In year 1 cost of \$5.19 mil. (\$2.15 with subsidy); year2 = \$2.15 mil.; and year3 = \$1.82 mil.</p> <p><u>Enforceability and Compliance</u> – High and High, but non-compliance still possible if review rate is low, cameras focused on discards rather than landings, and no dockside monitoring component.</p> <p><b>Overall, year 1 static monitoring costs are slightly higher than Sub-Option 3D, 100% ASM, but are significantly lower in subsequent years or under the subsidized scenario. Un-subsidized costs under Option 2 would have a negative impact on the fishery relative to No Action, and possibly more highly negative impacts relative to Status Quo.</b></p>
<b>4.1.3</b>	<b>Total Monitoring Coverage Level Timing</b>		
4.1.3.1	Coverage Level Timing Option 1 (No Action)	Option 1/No Action and Option 2 would not be expected to have direct or indirect impacts on regulated groundfish species. This measure is administrative because it only affects the timing of	<b>Low negative</b> to the extent it affects the ability for businesses to anticipate annual operating costs and make participation decisions as a result. Vessels have been compensated so unclear what impacts have been to date.



	Alternatives	Biological and Physical Impacts	Economic and Social Impacts
4.1.3.2	Coverage Level Timing Option 2 – Knowing total monitoring coverage level at a time certain	information availability for business planning ( <i>no impact</i> ).	<i>Indirect positive</i> impacts if individuals able to forecast monitoring costs and compare costs across providers to adopt cost-minimizing strategies. Federal reimbursement has been uncertain so difficult to assess realized impacts.
<b>4.1.4</b>	<b>Review process for sector monitoring coverage</b>		
4.1.4.1	Coverage Review Process Option 1 (No Action)	Option 1/No Action would not be expected to have direct or indirect impacts on regulated groundfish species. This measure is primarily administrative ( <i>no impact</i> ).	<i>No direct economic impacts</i> are anticipated.
4.1.4.2	Coverage Review Process Option 2 –Establish a review process for monitoring coverage rates	Establishing a review could have <i>indirect positive impacts</i> on groundfish from an evaluation of the efficacy of monitoring coverage rates to determine, for example, whether there is evidence of bias, and whether the monitoring standards are being met.	If review occurs more frequently than under Option 1/No Action, some <i>positive</i> economic impacts may result if issues with monitoring coverage levels or other components of the monitoring program are detected and determined to be suboptimal to achieve the goals of the program, such as if illegal behavior persists affecting ex-vessel markets, the ACE lease market, and reduced competitiveness among rule-followers and rule-breakers.
4.1.5	Addition to list of framework items	This option would not be expected to have direct or indirect impacts on regulated groundfish species or other species. Impacts would be fully analyzed in future actions ( <i>no impact</i> ).	This measure is expected to have <i>neutral</i> economic impacts. There is no expectation that the establishment of this administrative measure will have any discernibly positive or negative economic impact.
<b>4.2</b>	<b>Commercial Groundfish Monitoring Program Revisions (Sectors and Common Pool)</b>		
<b>4.2.1</b>	<b>Dockside monitoring program (DSM) (Sectors and Common Pool)</b>		

	Alternatives	Biological and Physical Impacts	Economic and Social Impacts
4.2.1.1	DSM Option 1 (No Action)	<p>In the absence of dockside monitoring, information on sector catches is expected to be less reliable, and it is possible that sectors could exceed their ACE, increasing the risk of overfishing. Under No Action, there is a much greater probability that landings could be misreported and/or underreported, which has occurred in the groundfish fishery in the recent past. Thus, <b>negative</b> impacts on groundfish and other species are possible under this option.</p> <p>For all dockside monitoring options: dockside monitoring has <b>no impacts, direct or indirect</b>, on protected species.</p>	<p><b>No direct economic impacts</b> to the fishing industry since DSM costs will be similar to recent fishing years (\$0).</p> <p><b>Enforceability and Compliance</b> – Low and low to medium, so <b>indirect negative impacts</b>.</p> <p>Reduced quota accountability decreases the functionality of the quota market to send appropriate price signals when quota is limiting and reduces the benefits of efficient harvesting strategies, such as decreased catch of non-target stocks. Additionally, overharvesting degrades long-term fishing revenue.</p> <p><b>Social Impacts</b> – <b>Neutral to positive social impacts</b> as this would maintain status quo of no DSM requirement, and could precipitate <b>positive impacts</b> on the attitudes and beliefs among fishery participants and stakeholders who have in the past voiced concerns with such a DSM program.</p>
4.2.1.2	DSM Option 2 – Mandatory DSM for entire commercial GF fishery	<p>This option intended to deter misreported landings, and provide independent verification of groundfish landings; therefore, should result in increased certainty in the magnitude of groundfish catches at the species level. More accurate in-season monitoring of landings, which will help ensure that sectors do not exceed the ACE, and that common pool vessel do not exceed daily catch limits. This independent verification of catch will reduce the risk of overfishing. Therefore, <b>positive</b> biological impacts for regulated groundfish species and <b>low positive</b> for other species.</p>	<p><b>Low negative direct impacts</b> since operating costs would increase, could increase consolidation into major ports to reduce monitoring costs, but increased dockside monitoring <b>may lead to indirect positive economic impacts</b> from increased quota accountability.</p> <p>Range of total dockside monitoring costs about \$900,000, approximately \$130 per trip, or about \$4,000 per vessel annually (in 2010 average cost was \$110 per trip). Additional uncertainties and caveats were explored and sensitivity analyses presented to provide greater range of possible costs. Common pool costs are expected to be higher than sector costs because over 50% of common pool offloads in minor ports.</p> <p>Predicted monitoring costs at vessel-level varies greatly, with larger proportion of total revenues for smaller vessels and vessels landing farther from major ports. For larger vessels over 50 feet, average costs for DMS ranges from 0.5% to under 3%.</p>

	Alternatives	Biological and Physical Impacts	Economic and Social Impacts
			<p><u>Enforceability and Compliance</u> – High and high, but only ensures dockside reporting requirements unless coupled with at-sea monitoring.</p> <p><u>Social Impacts</u> – <b>Negative social impacts</b> due to increased costs and responsibilities for commercial groundfish captains and crew.</p>
<b>4.2.2</b>	<b>Dockside monitoring program structure and design</b>		
4.2.2.1	DSM funding responsibility		
4.2.2.1.1	DSM Funding Responsibility Option A – Dealer responsibility	Option A and Option B would not be expected to have direct or indirect impacts on regulated groundfish or other species. This measure is primarily administrative, <b>no impact</b> .	<p>Direct economic impacts <b>are uncertain</b></p> <p><u>Enforceability and Compliance:</u> neutral, neutral</p>
4.2.2.1.2	DSM Funding Responsibility Option B – Vessel responsibility		<p>Direct economic impacts <b>are uncertain</b></p> <p><u>Enforceability and Compliance:</u> neutral, neutral</p>
4.2.2.2	DSM program administration		
4.2.2.2.1	DSM Administration Option A – Individual contracts with DSM providers	Option A and Option B would not be expected to have direct or indirect impacts on regulated groundfish or other species. This measure is primarily administrative, <b>no impact</b> .	<p>Relative to Option B, economic impacts may be <b>neutral to low positive</b>, because of flexibility in contract negotiation, but may increase possible transaction costs.</p> <p><u>Enforceability and Compliance:</u> neutral, neutral</p>
4.2.2.2.2	DSM Administration Option B –NMFS administered, single DSM provider		<p>Relative to Option A, economic impacts may be <b>neutral to low negative</b>, because of decreased flexibility in contract negotiation, but this option may minimize possible transaction costs.</p> <p><u>Enforceability and Compliance:</u> neutral, neutral</p>

	Alternatives	Biological and Physical Impacts	Economic and Social Impacts
4.2.2.3	Options for lower dockside monitoring coverage levels (20% coverage)		
4.2.2.3.1	Lower coverage levels Option A	Relative to No Action (no required dockside monitoring program), Option A and Option B would have <b>positive</b> impacts on regulated groundfish, since the dockside monitoring program is intended to deter misreported landings, and provide independent verification of groundfish landings, and therefore should result in increased certainty regarding the magnitude of groundfish landings at the species level.	Compared to No Action (no DSM) this option has <b>low negative direct economic impacts</b> , less than 1% fleetwide revenue. Under 30% of recent offloads to ports with low gf landings and 50% of total DSM costs from these ports. If coverage reduced from 100% to 20% coverage at these ports, total estimated costs of DMS go to \$600,000 (from \$900,000), 39% reduction.  <i>Enforceability and Compliance</i> – medium to high and medium to high.
4.2.2.3.2	Lower coverage levels Option B		This includes about 100 unique or common pool vessels from 2016-2018, if coverage reduced to Compared to No Action (no DSM) this option has <b>low negative to negative direct economic impacts</b> . Coverage of 20% DSM for these vessels would cost about \$600,000, a 36% reduction from 100% DSM. Overall, low-volume vessels account for 65% of landed non-groundfish pounds, but only 2.3% of all landed groundfish pounds.  <i>Enforceability and Compliance</i> - medium to high and medium to high.
4.2.2.4	Options for DSM safety and liability associated with fish hold inspections		
4.2.2.5.1	Fish hold inspection Option A – DSM fish hold inspections required	Fish hold inspections as part of a DSM help to ensure that all landings are accounted for, which therefore should result in increased certainty in the magnitude of groundfish catches at the species level. This independent verification of catch will reduce the risk of overfishing; <b>positive</b> biological impacts for regulated groundfish and <b>low positive</b> for other species.	<b>Low negative to low positive impacts</b>  This option may increase the cost burden to either dealers or vessels, thus low negative economic impacts. However, without hold inspections, the ability to misreport landings is increased, and in a quota managed fishery there exists an incentive to evade quota constraints through misreporting or underreporting catch. Therefore, overall fish hold inspections are expected to have low positive impacts from improved compliance and enforceability of reporting requirements.

	<b>Alternatives</b>	<b>Biological and Physical Impacts</b>	<b>Economic and Social Impacts</b>
4.2.2.4.2	Fish hold inspection Option B – Alternative methods for inspecting fish holds (cameras)	Similar <b>positive and low positive</b> impacts to Option A, provided that alternative methods (cameras) can account for all catch.	<b>Neutral to negative impacts</b> , relative to Options A or C due to possible increased cost burden associated with purchasing cameras, to the extent this occurs.  Low positive impacts from improved compliance and enforceability of reporting requirements.
4.2.2.4.3	Fish hold inspection Option C – No fish hold inspection required, captain signs affidavit	<b>Low positive</b> impacts since this option would not include an independent verification of catch, captain only.	This alternative would have <b>neutral economic impacts</b> relative to Option A, since neither requires vessels to purchase and maintain additional equipment, but potentially <b>positive economic impacts</b> relative to Option B, for vessels that do not already have cameras as part of an EM system.  <b>Negative impact</b> on both compliance and enforceability relative to Option B or C since reducing the ability to perform hold inspections has been noted by enforcement to limit their capabilities to investigate possible illegal activities
<b>4.3</b>	<b>Sector Reporting</b>		
4.3.1	Sector Reporting Option 1 (No Action)	Option 1/No Action and Option 2 would not be expected to have direct or indirect impacts on regulated groundfish species. This measure is primarily administrative ( <b>no impact</b> ).	<b>Neutral to low negative</b> impacts on the groundfish fishery to the extent that it simplifies the reporting process and reduces transaction costs associated with complying with regulations.
4.3.2	Sector Reporting Option 2 – Grant RA authority to streamline sector reporting requirements		<b>Neutral to low positive</b> impacts on the groundfish fishery to the extent that it simplifies the reporting process and reduces transaction costs associated with complying with regulations. In addition, if discards and ACE balances were determined more quickly, fishing businesses might make benefit from more certain financial planning, such as when to lease in or lease out quota.

	Alternatives	Biological and Physical Impacts	Economic and Social Impacts
<b>4.4</b>	<b>Funding/Operational provisions of groundfish monitoring program (Sectors and Common Pool)</b>		
4.4.1	Funding Provisions Option 1 (No Action)	Option 1/No Action would not be expected to have direct or indirect impacts on regulated groundfish species. This measure is primarily administrative ( <b>no impact</b> ).	<b>Neutral to high negative impacts</b> on the groundfish fishery, depending if and what the degree of funding limitations might be for NMFS to administer the program.
4.4.2	Funding Provisions Option 2 – Provisions for an increase or decrease in funding for the GF monitoring program		
4.4.2.1	Funding Provisions Sub-option 2A – Higher monitoring coverage levels if NMFS funds are available (Sectors Only)	Sub-Option 2A would be expected to have <b>indirect positive</b> impacts on regulated groundfish species, as there is a potential for higher monitoring coverage levels under this option.	<b>Neutral to strongly positive</b> impacts relative to No Action/Option 1 depending on the coverage rate and programs selected under Sector Monitoring Standards and Tools since it could cover up to 100% of monitoring costs in a given year which could compromise a significant proportion of operating costs in any given year.
4.2.2.2	Funding Provisions Sub-option 2B – waivers for monitoring requirements allowed (Sectors and Common Pool)	Sub-Option 2B would be expected to have <b>indirect low negative</b> impacts on regulated groundfish species, as there is a potential for lower monitoring coverage levels under this option.	<b>Positive</b> impacts on fishing businesses to the extent that fishing effort would be constrained by the monitoring standard and coverage rate selected in this action.

	Alternatives	Biological and Physical Impacts	Economic and Social Impacts
<b>4.5</b>	<b><i>Management uncertainty buffers for the commercial groundfish fishery (Sectors only)</i></b>		
4.5.1	Management Uncertainty Buffer Option 1 (No Action)	Option 1/No Action would likely have <b>neutral to low positive</b> biological impacts to regulated groundfish, as management uncertainty buffers are a part of the ACL-setting process, designed to constrain fishing effort to allowable levels. Maintaining current management uncertainty buffers would likely keep the groundfish fishery operating at current levels, and changes in effort would not be expected.	Overall, the direct economic impacts of Option A/No Action are the loss of potential fishery revenue, 3-7% of each stock's ACL, which has a <b>neutral to low-negative impact</b> on the fishery, depending on the stock and fishing effort in any given year.  <i>Enforceability and Compliance</i> – neutral and neutral to low negative.
4.5.2	Management Uncertainty Buffer Option 2 – Elimination of management uncertainty buffer for Sector ACLs with 100% monitoring of all sector trips	It is difficult to predict whether the removing the buffers would result in substantial increases in fishing effort. This option has the potential to increase fishing effort and landings since setting the buffer to zero would result in higher sector ACLs. Therefore, relative to No Action, Option 2 has the potential to result in <b>low negative</b> impacts on regulated groundfish. However, 100% monitoring is required to select Option 2, and having comprehensive monitoring would essentially create a census of commercial catch. This would provide <b>positive</b> impacts to regulated groundfish as there would be greater certainty in the magnitude and age structure of the commercial catch, and lower risks of the sector ACL being exceeded.  Impacts on protected species range from <b>direct low negative to negative impacts, to indirect low positive impacts</b> . This option has the potential to increase fishing effort, which would have <b>negative impacts</b> on protected species. However relative to Option 1/ No Action, Option 2 may also result in	Under FY18 conditions, a ~3-5% increase in the sector sub-ACLs allows fleet-wide catch and revenues from groundfish to increase by 7-8%, and overall catch and revenue to increase by greater than 5% (~5.5%). However, compared to No Action, monitoring costs under any of the 100% coverage options (ASM, EM, or blended) increase operating costs and decrease operating profits relative to status quo, meaning the direct economic impact is <b>low-negative to negative</b> .  <i>Enforceability and Compliance</i> – high and high.  <b><i>Overall, while operating expenses increase under Option 2 relative to No Action, where No Action represents status quo levels of monitoring, revenues are maximized under this option relative to other monitoring options in this action, maximizing operating profits relative to the other 100% monitoring options in this action.</i></b>

	Alternatives	Biological and Physical Impacts	Economic and Social Impacts
		<i>indirect positive impacts</i> to protected species since 100% monitoring is required to select Option 2.	
<b>4.6</b>	<b><i>Remove commercial groundfish monitoring program requirements for certain vessels fishing under certain conditions</i></b>		
4.6.1	Removal of monitoring requirements Option 1 (No Action)	<p>Under Option 1/No Action, impacts on regulated groundfish are expected to be <b>low negative</b> because reducing observer coverage also reduces the precision of discard estimates. Groundfish catches are low on these trips, but have the potential to introduce bias if not applied across all broad stock areas – limiting the ability of using info in stock assessments.</p> <p>For all removal of at-sea monitoring requirements: Impacts on protected species are <b>(directly and indirectly) low negative to negative</b>. Reducing monitoring coverage may result in increased fishing effort in these areas, and results in loss of data on interactions with fishing gear.</p>	<p>No Action has <b>positive</b> economic impacts on the groundfish fishery to the extent that it minimizes monitoring costs, but may carry some risk of non-compliance since discards and landings are not independently verified and incentives for non-compliance exist in the fishery, even when catch of allocated stocks may be small.</p> <p><u>Social Impacts</u> - For all removal of monitoring requirements: <b>neutral</b> social impacts for commercial groundfish fishery participants and communities, since the measures to remove monitoring requirements apply to vessels that catch very few groundfish and primarily target non-groundfish stocks and species.</p>
4.6.2	Removal of monitoring requirements Option 2 – Vessels fishing exclusively west of <u>72 30 W</u> would not be subject to monitoring requirements on trips in that area		
4.6.2.1	Removal of monitoring requirements Option 2A (Sectors only)	<b>Low Negative</b> biological impacts to regulated groundfish from Option 2A and 2B, as lower monitoring coverage would likely reduce the accuracy of catch estimates. However, catch composition for groundfish on trips fishing in this area is relatively low (less than 5% with exception of S. windowpane) and majority of total groundfish catch would receive monitoring.	<p>Because of the low levels of groundfish landings in this area, exempting these trips from monitoring coverage is expected to result in positive economic impacts to those who fish in the exempted area, but <b>neutral</b> economic impacts on the fishery as a whole, relative to No Action/Option 1.</p> <p><i>Enforceability and Compliance</i> – neutral to positive and positive. May nevertheless incentivize increased effort and possibly illegal behavior in the fishery in order to avoid observer costs as well as costs imposed</p>



	Alternatives	Biological and Physical Impacts	Economic and Social Impacts
4.6.2.2	Removal of monitoring requirements Option 2B (Sectors and Common Pool)	For all removal of monitoring requirements, impacts on EFH are <b>negligible to slight negative</b> .	Direct economic impacts of Sub-Option 2B are <b>low positive to positive</b> when compared to a comprehensive DSM program under Option 2, alternative 7.4.4.1.2. Overall direct economic impacts are <b>low positive</b> because the overall cost reductions of this alternative are small compared to the estimated cost of a comprehensive DSM program, but distributional impacts may be more <b>strongly positive</b> .  <u>Compliance/Enforceability:</u> Indirect economic impacts may be low negative relative to No Action due to <b>possible negative impacts</b> on compliance and enforceability of reporting requirements
4.6.3	Removal of monitoring requirements Option 3 – Vessels fishing exclusively west of <u>71 30 W</u> would not be subject to monitoring requirements on trips in that area		
4.6.3.1	Removal of monitoring requirements Option 3A (Sectors only)	<b>Negative</b> biological impacts to regulated groundfish from Option 3A and 3B, as lower monitoring coverage would likely reduce the accuracy of catch estimates. Catch composition for groundfish on trips fishing in this area is relatively low for some stocks, but substantial for others (S. windowpane, SNE/MA winter flounder, SNE/MA YT flounder, and ocean pout). Some of these stocks are in rebuilding plans. Impacts on GOM and GB stocks are expected to be <b>low negative</b> , but impacts on SNE/MA stocks expected to be <b>high negative</b> .	Compared to Sub-Option 2A, levels of groundfish landings in the proposed exemption area are substantially higher, exempting these trips from monitoring coverage is expected to result in <b>positive to high positive economic impacts</b> to those who fish in the exempted area, but at most low positive economic impacts on the fishery as a whole, relative to No Action/Option 1, depending on the coverage rate selected under 4.1.1.1.  <u>Compliance/Enforceability:</u> Compared to Sub-Option 2A, this option is expected to have <b>negative</b> effects on compliance since it affects a larger proportion of total fishing effort. With respect to enforceability, this alternative is expected to have <b>neutral to low negative</b> impacts compared to No Action and neutral to low negative impacts relative to Sub-Option 2A.
4.6.3.2	Removal of monitoring requirements Option 3B (Sectors and Common Pool)		Exempting trips in this area from monitoring coverage is expected to result in <b>positive to high positive</b> economic impacts to those who fish in the exempted area, and <b>low positive to positive</b> economic impacts on the fishery as a whole, relative to No Action/Option 1, depending on the DSM coverage rate selected under 4.1.1.1.

	Alternatives	Biological and Physical Impacts	Economic and Social Impacts
			<u>Compliance/Enforceability:</u> Compared to Sub-Option 2B, this option is expected to have <b>negative effects</b> on compliance since it affects a larger proportion of total fishing effort. With respect to enforceability, this alternative is expected to have <b>negative impacts</b> compared to No Action and low negative impacts relative to Sub-Option 2B since it may reduce the ability for enforcement to detect misreporting dockside.
4.6.4	Review process for vessels removed from commercial groundfish monitoring program requirements		
4.6.4.1	Vessels removed from monitoring requirements do not have formal review process (No Action)	This option would not be expected to have direct or indirect impacts on regulated groundfish species. This measure is primarily administrative, <b>no impact</b> .	There may be some <b>negative, indirect economic impacts</b> if no review process is implemented and changes in effort or catch composition by exempted vessels change drastically.
4.6.4.2	Implement a review process for vessels removed from commercial groundfish monitoring program requirements	Requiring a periodic review could have <b>indirect positive impacts</b> on groundfish by confirming that measures for removal of monitoring requirements are not impacting estimates of groundfish catch. If impacts are found in the review exemptions can be revisited.	Overall, this alternative is expected to have <b>neutral</b> economic impacts since it is not expected that a review will impose any additional costs on fishing businesses.  <u>Compliance/Enforceability:</u> <b>Neutral to low positive</b> impacts on compliance relative to status quo if it limits potential effort shifts in the two years before the review begins, however, if fishermen have a high discount rate, they may still perceive that benefits associated with reducing or eliminating short-term (1-2 year) monitoring costs to be worth shifting operations to an exempted area, depending on whether Option 2 or 3 is ultimately selected.