

INITIAL REVIEW DRAFT
Regulatory Impact Review
for Proposed Regulatory Amendment
to

**Address the potential for a shortage of
lead level 2 observers for deployment on
freezer longline vessels**

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Abstract: This Regulatory Impact Review (RIR) examines the benefits and costs of alternatives to address the potential for a shortage of lead level 2 endorsed (LL2) observers for deployment on freezer longline vessels in the groundfish and halibut fisheries of the Bering Sea and Aleutian Islands (BSAI) and Gulf of Alaska (GOA). Freezer longline vessels subject to monitoring requirements defined at 50 CFR §679.100 and operating under the scales monitoring option are required to have one lead level 2 endorsed observer onboard at all times when the Pacific cod fishery is open in the BSAI. Vessel owners and observer coverage providers have reported periodic shortages of LL2 observers that delay fishing trips, and increase costs to provide observers the opportunity to gain experience needed to qualify as a LL2 observer. This RIR analyzes alternatives to address the potential shortage of LL2 observers by allowing regulatory exceptions, creating additional opportunities for observers to gain the necessary experience, or by creating alternate observer coverage requirements which would allow a vessel to conduct fishing activity without a lead level 2 observer onboard. In addition, this analysis provides an option to apply any revisions to the regulations or training to all circumstances under which a LL2 observer is required on vessels using fixed gear. This would allow consideration of applying the management measures to freezer longliners choosing the two observer option and pot catcher/processors participating in the groundfish Community Development Quota fisheries.

List of Acronyms and Abbreviations

ABC	acceptable biological catch
ADF&G	Alaska Department of Fish and Game
AFA	American Fisheries Act
AFSC	Alaska Fisheries Science Center
AGDB	Alaska Groundfish Data Bank
AKFIN	Alaska Fisheries Information Network
BSAI	Bering Sea and Aleutian Islands
CAS	Catch Accounting System
CDQ	Community Development Quota
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
Council	North Pacific Fishery Management Council
CP	catcher/processor
CV	catcher vessel
E.O.	Executive Order
EA	Environmental Assessment
EEZ	Exclusive Economic Zone
EFH	essential fish habitat
EIS	Environmental Impact Statement
ESA	Endangered Species Act
FLC	Freezer Longline Coalition
FLCC	Freezer Longline Coalition Cooperative
FMA	Fisheries Monitoring and Analysis
FMP	fishery management plan
FONSI	Finding of No Significant Impact
FR	<i>Federal Register</i>
FRFA	Final Regulatory Flexibility Analysis
ft	foot or feet
GOA	Gulf of Alaska
H&L	Hook-and-line
ID	Identification
IRFA	Initial Regulatory Flexibility Analysis
IPA	Incentive Plan Agreement
IQF	individually quick frozen
lb(s)	pound(s)
LLP	license limitation program

LL2	lead level 2
L2	Level 2
LOA	length overall
m	meter or meters
Magnuson-Stevens Act	Magnuson-Stevens Fishery Conservation and Management Act
MMPA	Marine Mammal Protection Act
t	tonne, or metric ton
NAO	NOAA Administrative Order
NEFOP	North East Fisheries Observer Program
NEPA	National Environmental Policy Act
NMFS	National Marine Fishery Service
NOAA	National Oceanic and Atmospheric Administration
NPFMC	North Pacific Fishery Management Council
Observer Program	North Pacific Groundfish and Halibut Observer Program or North Pacific Observer Program
OMB	Office of Management and Budget
OST	Office of Science and Technology
PSC	prohibited species catch
PPA	Preliminary preferred alternative
PRA	Paperwork Reduction Act
RFA	Regulatory Flexibility Act
RFFA	reasonably foreseeable future action
RIR	Regulatory Impact Review
RPA	reasonable and prudent alternative
SAFE	Stock Assessment and Fishery Evaluation
SAR	stock assessment report
SBA	Small Business Act
Secretary	Secretary of Commerce
TAC	total allowable catch
U.S.	United States
USCG	United States Coast Guard
USFWS	United States Fish and Wildlife Service
VMS	vessel monitoring system
W	West

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Executive Summary

This Regulatory Impact Review (RIR)¹ examines the benefits and costs of alternatives to address the potential for a shortage of lead level 2 endorsed (LL2) observers for deployment on freezer longline vessels in the groundfish and halibut fisheries of the Bering Sea and Aleutian Islands (BSAI) and Gulf of Alaska (GOA). Freezer longline vessels subject to monitoring requirements defined at 50 CFR §679.100 and operating under the scales monitoring option are required to have one lead level 2 endorsed observer onboard at all times when the Pacific cod fishery is open in the BSAI. Vessel owners and observer coverage providers have reported periodic shortages of LL2 observers that delay fishing trips, and increase costs to provide observers the opportunity to gain experience needed to qualify as a LL2 observer. This RIR analyzes alternatives to address the potential shortage of LL2 observers by allowing regulatory exceptions, creating additional opportunities for observers to gain the necessary experience, or by creating alternate observer coverage requirements which would allow a vessel to conduct fishing activity without a lead level 2 observer onboard. In addition, this analysis provides an option to apply any revisions to the regulations or training to all circumstances under which a LL2 observer is required on vessels using fixed gear. This would allow consideration of applying the management measures to freezer longliners choosing the two observer option and pot catcher/processors participating in the groundfish Community Development Quota fisheries.

Purpose and Need

The Council adopted a purpose and need statement to originate this action in October 2016. The Council's purpose and need statement focused exclusively on LL2 observers deployed on freezer longline vessels. Through the analytical process, NMFS identified an additional group of vessels impacted by the availability of nontrawl LL2 observers. Two catcher/processor vessels have used pot gear to harvest groundfish Community Development Quota (CDQ) each year since 2013. These vessels are required to carry a nontrawl LL2 observer when participating in this fishery. In addition, a new full coverage observer provider has been approved to provide observers in the full coverage category.

NMFS recommends the purpose and need statement include additional language to address the potential shortage of nontrawl LL2 observers for deployment more generally (i.e., to include pot CPs) as well as to reflect the permitting of AIS as a full coverage observer provider.

NMFS's recommended additions to the Council's purpose and need statement are identified below in Bold and underline text:

*Under monitoring and enforcement regulations in place since October 2012, owners of freezer longline vessels named on License Limitation Program (LLP) licenses endorsed to catch and process Pacific cod in the (BSAI) are required to select between two monitoring options: carry two observers so that all catch can be sampled, or use a motion-compensated flow scale to weigh Pacific cod before it is processed and carry one observer. Under both monitoring options, at least one of the observers must be endorsed as a lead level 2 observer for vessels using fixed-gear. **In addition to freezer longline vessels selecting the scales option, freezer longliners selecting the two-observer option and pot catcher/processors participating in the groundfish CDQ fisheries also are required to carry a nontrawl LL2 observer.***

All freezer longline vessels except one have chosen the flow scales with a single LL2 observer option. This, combined with current observer deployment model that places most fixed-gear

¹ The proposed action has no potential to effect individually or cumulatively on the human environment. The only effects of the action are economic, as analyzed in this RIR/IRFA. As such, it is categorically excluded from the need to prepare an Environmental Assessment."

*catcher vessels in the partial observer coverage category, means that there are few fixed-gear vessels in the full observer coverage category which do not require a LL2 observer. Therefore, observers employed by **four of the five** full coverage observer providers have few opportunities to gain the necessary experience to obtain the LL2 endorsement for vessels using fixed-gear.*

NMFS, observer providers, and industry undertook a series of non-regulatory actions designed to build and retain a pool of available LL2 endorsed observers. This included industry voluntarily deploying second observers on some freezer longline vessels, at a cost to the industry, in order to allow them the experience to earn the LL2 endorsement.

The Council is concerned about the potential for a shortage of LL2 observers for deployment on freezer longline vessels and the resulting costs that could be incurred. This action is intended to address the need to maintain a high standard of observer data quality, and the need to minimize the potential for shortages of LL2 observers and additional costs to industry.

Alternatives

The Council recommended a set of alternatives at its October 2016 meeting (see Appendix A). **NMFS suggests revisions to the alternatives identified in the Council's motion, which do not substantially change the content, but reword and reorder them to maintain consistency with terminology used in existing regulations and help to illustrate the differences among the alternatives. In addition, NMFS recommends adding a new option under Alternative 3 (Option 3.2), and has identified two different ways Alternative 4 could be implemented, and recommends adding options 4.1 and 4.2 to clarify those distinctions.**

The new Option 3.2 would allow sampling experience on a trawl catcher/processor (CP) to count toward nontrawl LL2 endorsement, add an additional training requirement, and would also require vessel owners to participate in a pre-cruise meeting if requested to do so by NMFS. Option 3.2 would apply the changes to the nontrawl LL2 endorsement requirements to any vessel required to carry a nontrawl LL2 observer, including freezer longliners selecting the scales option or the two observer option as well as pot catcher/processors participating in the groundfish CDQ fisheries.

To limit the number of changes suggested to the Council alternatives and options, analysts did not add language to all alternatives and options to allow each to apply to all vessels with a nontrawl LL2 observer requirement (such as freezer longline vessels without a flowscale or pot CP vessels groundfish CDQ fishing). However, should the Council select a preliminary preferred alternative other than Alternative 3 Option 3.2, this feature could be added to the other alternatives or options and analyzed further in a later draft analysis.

NMFS has also identified two different ways to implement Alternative 4 (options 4.1 and 4.2). NMFS's recommended additions to the alternatives and options are identified below in bold and underline text.

The recommended revised alternatives are as follows:

Alternative 1: No action. Continue to require owners of freezer longline vessels selecting the scales with a single observer option to carry a nontrawl LL2 observer, and provide no exceptions if a nontrawl LL2 observer is not available.

Alternative 2: LL2 Exception. Create a regulatory exception that would allow a freezer longline vessel to carry a substitute observer if a nontrawl LL2 observer is not available.

Option 2.1: The substitute observer must have a LL2 endorsement for a catcher/processor using trawl gear.

Option 2.2: The substitute observer must have at least a Level 2 endorsement.

Option 2.3: The substitute observer must be a certified observer.

Alternative 3: Observer Options. Modify the nontrawl LL2 observer coverage requirement.

Option 3.1: Allow two observers to deploy as an alternate observer coverage option to the one nontrawl LL2 observer on a freezer longline vessel selecting the scales option.

Suboption 3.1.1: Both observers must have a Level 2 endorsement.

Suboption 3.1.2: One observer must have a Level 2 endorsement and the second observer may be any certified observer.

Option 3.2: Modify the nontrawl lead level 2 endorsement to allow sampling experience on trawl CPs to count toward nontrawl LL2 endorsement with an additional training requirement and require vessel owners to participate in a pre-cruise meeting if requested to do so by NMFS.

Alternative 4: Agency Funding. Institute an at-sea training component to the Federal observer training program, whereby the agency would pay for nontrawl LL2 endorsement.

Option 4.1: NMFS-funded deployment of second observers

Option 4.2: NMFS-funded At-Sea Training Program

Impacts

The RIR analyzes the impacts of the alternatives on individuals using observer data, vessel owners and operators, observer providers, observers, and NMFS using five categories; observer health and safety, observer data quality, observer availability, costs to the industry, and administrative costs. Where possible, the impacts are quantified, otherwise a qualitative discussion has been prepared comparing the relative impacts of the action alternatives.

For the sections of this analysis addressing the impact on vessel owners, the primary focus is on impacts to the freezer longline fleet selecting the scales monitoring option. As noted particularly under Alternative 3, Option 3.2, the single freezer longliner selecting the two observer option and a small number of catcher/processor vessels using pot gear to harvest groundfish CDQ also are required to carry a nontrawl LL2 observer and could be impacted by this action.

Under the Status quo, there are limited avenues for observers to gain experience on nontrawl vessels to become qualified to deploy as a nontrawl LL2 observer. In response to the potential for a shortage of nontrawl LL2 observers, second observers have been deployed voluntarily on freezer longline vessels since 2014 at the expense of the vessels. The existing observer coverage requirements are designed to maximize the quality of data used to estimate catch and bycatch by this fleet. Overall, nontrawl LL2 observers collect very high quality data on freezer longline vessels under the existing regulatory structure.

Implementation of Alternative 2 would be administratively burdensome for vessels, observer providers, and NMFS. It is unclear if implementation of an exception to the nontrawl LL2 endorsement could be provided that would entirely eliminate the possibility of a vessel being delayed at the dock. Implementation of this alternative would require NMFS to create an infrastructure to monitor and facilitate observer deployment in the full coverage category in a more involved capacity than under the status quo. Alternative 2 would reduce the cost to vessels by reducing the incentive to deploy second observers and could also result in lower data quality because of the potential deployment of observers on freezer longline vessels whom do not have experience on vessels using nontrawl gear. This could result in an increase in the amount of data deleted and decrease the precision and accuracy of total catch, bycatch and prohibited species catch (PSC) estimates for the specific vessel participating in a *de facto* catch share program.

Implementation of either option under Alternative 3 would increase the pool of observers qualified to deploy on freezer longline vessels. Option 3.1 would allow deployment of two level 2 observers instead

of one lead level 2 observer and Option 2 would modify the experience and training requirements necessary for an observer to gain the nontrawl LL2 endorsement. Both Options 3.1 and 3.2 could be implemented by a simple regulatory amendment and would not require the development of an ongoing administrative approval process making these two options relatively simple to implement relative to Alternative 2. Alternative 3, Option 3.2 would result in lower observer coverage costs to industry than Option 3.1 because the necessity to deploy two observers would be more likely under Option 3.1 than Option 3.2. Option 3.2 would likely double the number of observers that qualify for the nontrawl LL2 endorsement and could deploy as the sole observer. The cost to NMFS would likely be equivalent to the status quo under Option 3.1 and slightly increased due to the additional training component of alternative 3.2. Either Option 3.1 or 3.2 under Alternative 3 would be less costly to NMFS than either Alternative 2 or Alternative 4.

The impacts of Alternative 4 are largely economic. This alternative was designed to shift the economic burden of supplementing the pool of LL2 observers from the industry to NMFS. The Observer Program is already limited by the availability of funds, this alternative would place even greater demand on an already limited budget and would increase the NMFS's role in the logistical process of deploying observers on freezer longline vessels in the full coverage category.

The Council's current purpose and need statement identifies the priority to reduce the potential for a shortage of LL2 observers for deployment on freezer longline vessels. To address the potential shortage of nontrawl LL2 observers for deployment more generally, i.e., to include pot CPs, the purpose and need statement, Alternative 2, and Alternative 3, Option 3.1 would need to be modified to apply to all vessels with a nontrawl LL2 requirement.

Table ES 1 summarizes the impacts of the alternatives relative to the five impact categories (observer health and safety, observer data quality, observer availability, costs to the industry, and administrative costs) on individuals using observer data, vessel owners and operators, observer providers, observers, and NMFS. Table ES 1 provides specific detail on Options 3.1 and 3.2 under Alternative 3 because the impacts of these two options differs.

Comparison of Alternatives for Decision making

Table ES 1 Major elements and impacts of the alternatives and options

Affected Entity	Alt 1 Status quo	Alt 2 LL2 exception	Alt 3, Opt 3.1 Two observers	Alt 3, Opt 3.2 LL2 endorsement	Alt 4, Opts 4.1 & 4.2 At-sea training
Impact Category: Obs. Health & Safety					
Observers	<ul style="list-style-type: none"> Stressful as single observer with heavy workload NMFS reviewing Data collection protocols 	<ul style="list-style-type: none"> Status quo plus: Increased stress due to less experienced observer Deploying newly certified observers is highest risk 	<ul style="list-style-type: none"> Status quo plus: Increased stress due to less experienced observers, but balanced by having two observers Deploying newly certified observers is highest risk 	<ul style="list-style-type: none"> Minimal change from status quo as observer has comparable at-sea experience 	<ul style="list-style-type: none"> No change from status quo
Impact Category: Data quality					
Individuals using observer data, vessel owners and operators, and NMFS	<ul style="list-style-type: none"> High quality data 	<ul style="list-style-type: none"> In most cases, status quo Reduced data quality with less experienced observers Risk decreases with experienced observers (more than 2 contracts) 	<ul style="list-style-type: none"> In most cases, status quo Reduced data quality of less experienced observers balanced by having two 	<ul style="list-style-type: none"> Minimal change from status quo, observers would have comparable at-sea experience and gear-specific training 	<ul style="list-style-type: none"> No change from status quo
Impact Category: Observer Availability					
Observer Providers: Pathways to create LL2 observers	<ul style="list-style-type: none"> Deployment on pot or LL CPs in full coverage, Fixed gear CVs in partial coverage 	<ul style="list-style-type: none"> Status quo plus: Substitute observers deployed if exception granted 	<ul style="list-style-type: none"> Status quo plus: Deployment of 2 less experienced observers on freezer longline vessels 	<ul style="list-style-type: none"> Status quo plus: Trawl LL2s with additional training 	<ul style="list-style-type: none"> No change from status quo
Impact Category: Costs to Industry					
Vessel owners and operators	<ul style="list-style-type: none"> Potential for vessel delays \$110-180k/ year for voluntary seconds 	<ul style="list-style-type: none"> Reduces potential for vessel delays Possibly eliminate or reduce the cost of voluntary seconds Time and information burden of requesting an exception Cost of available LL2 observers would not be considered 	<ul style="list-style-type: none"> Reduces potential for vessel delays Possibly reduces cost of second observers, seconds deployed as-needed basis, rather than a proactive calculation 	<ul style="list-style-type: none"> Reduces potential for vessel delays Eliminates cost of voluntary seconds 	<ul style="list-style-type: none"> Eliminates cost of voluntary seconds if Federal funding, otherwise no change from status quo
Observer Providers	<ul style="list-style-type: none"> Track and calculate LL2 availability, and organize voluntary seconds Deployment incentives for LL2 observers 	<ul style="list-style-type: none"> May be required to help vessel or NMFS document exception request 	<ul style="list-style-type: none"> organize seconds as needed 	<ul style="list-style-type: none"> Additional training for some new nontrawl LL2 observers 	<ul style="list-style-type: none"> No change from status quo except will organize 2nds with NMFS
Impact Category: Administrative Costs					
NMFS	<ul style="list-style-type: none"> Current level of Administrative costs of observer training, advising, debriefing. 	<ul style="list-style-type: none"> Status quo plus: Costs and workload to implement regulatory change Ongoing costs and workload to process exception requests 	<ul style="list-style-type: none"> Status quo plus: Costs and workload to implement regulatory change 	<ul style="list-style-type: none"> Status quo plus: Costs and workload to implement regulatory change Costs and workload to develop and provide nontrawl observer training 	<ul style="list-style-type: none"> Status quo plus: Additional Federal funding for deployment that is not anticipated to be available & costs of new contract administration

NMFS Recommendations

Through the analytical process, NMFS identified several Agency recommendations that are included within this document and summarized here.

- NMFS recommends revising the purpose and need statement include additional language to address the potential shortage of nontrawl LL2 observers for deployment more generally, i.e., to include pot CPs, as well as to reflect the permitting of AIS as a full coverage observer provider. (Section 1.1)
- NMFS recommends revising the alternatives to maintain consistency with terminology used in existing regulations and help to illustrate the differences among the alternatives. In addition, NMFS recommends adding a new option under Alternative 3 (Option 3.2), and has identified two different ways Alternative 4 could be implemented, and recommends adding options 4.1 and 4.2 to clarify those distinctions. (Section 2)
- NMFS does not recommend further consideration of option 2.2 or option 2.3 under Alternative 2 because of the concerns identified in Section 4.2 of the RIR on observer health and safety and data quality. The RIR indicates that options 2.2 and 2.3 would not adequately prepare an observer to be successful as the sole observer aboard a freezer longline vessel. We recommend moving options 2.2 and 2.3 into the section for alternatives considered but not considered further in the next version of the RIR. (Section 4.2)
- NMFS does not recommend further analysis of Alternative 4. NMFS does not currently have funding to support existing demands on Observer Program resources. Given funding limitations, and the complicated administration of this alternative as described in Section 4.4. NMFS recommends moving Alternative 4 into the section for alternatives considered but not considered further in the next version of the RIR. (Section 4.4)

1 Introduction

This document is a Regulatory Impact Review (RIR)². An RIR provides assessments of the economic benefits and costs of the action alternatives, as well as their distribution (the RIR). This RIR addresses the statutory requirements of the Magnuson Stevens Fishery Conservation and Management Act and Presidential Executive Order 12866. An RIR is a standard document produced by the North Pacific Fishery Management Council (Council) and the National Marine Fisheries Service (NMFS) Alaska Region to provide the analytical background for decision-making.

This Regulatory Impact Review (RIR) examines the benefits and costs of alternatives to address the potential for a shortage of lead level 2 endorsed (LL2) observers for deployment on freezer longline vessels in the groundfish and halibut fisheries of the Bering Sea and Aleutian Islands (BSAI) and Gulf of Alaska (GOA). Freezer longline vessels subject to monitoring requirements defined at 50 CFR §679.100 and operating under the scales monitoring option are required to have one lead level 2 endorsed observer onboard at all times when the Pacific cod fishery is open in the BSAI. Vessel owners and observer coverage providers have reported periodic shortages of LL2 observers that delay fishing trips, and increase costs to provide observers the opportunity to gain experience needed to qualify as a LL2 observer. This RIR analyzes alternatives to address the potential shortage of LL2 observers by allowing regulatory exceptions, creating additional opportunities for observers to gain the necessary experience, or by creating alternate observer coverage requirements which would allow a vessel to conduct fishing activity without a lead level 2 observer onboard. In addition, this analysis provides an option to apply any revisions to the regulations or training to all circumstances under which a LL2 observer is required on vessels using fixed gear. This would allow consideration of applying the management measures to freezer longliners choosing the two observer option and pot catcher/processors participating in the groundfish Community Development Quota fisheries.

The preparation of an RIR is required under Presidential Executive Order (E.O.) 12866 (58 FR 51735, October 4, 1993). The requirements for all regulatory actions specified in E.O. 12866 are summarized in the following Statement from the E.O.:

In deciding whether and how to regulate, agencies should assess all costs and benefits of available regulatory alternatives, including the alternative of not regulating. Costs and Benefits shall be understood to include both quantifiable measures (to the fullest extent that these can be usefully estimated) and qualitative measures of costs and benefits that are difficult to quantify, but nonetheless essential to consider. Further, in choosing among alternative regulatory approaches agencies should select those approaches that maximize net benefits (including potential economic, environmental, public health and safety, and other advantages; distributive impacts; and equity), unless a statute requires another regulatory approach.

E.O. 12866 requires that the Office of Management and Budget review proposed regulatory programs that are considered to be “significant.” A “significant regulatory action” is one that is likely to:

- Have an annual effect on the economy of \$100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, local or tribal governments or communities;
- Create a serious inconsistency or otherwise interfere with an action taken or planned by another agency;

² The proposed action has no potential to effect individually or cumulatively on the human environment. The only effects of the action are economic, as analyzed in this RIR/IRFA. As such, it is categorically excluded from the need to prepare an Environmental Assessment."

- Materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or
- Raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in this Executive Order.

1.1 Purpose and Need

The Council adopted a purpose and need statement to originate this action in October 2016. The Council's purpose and need statement focused exclusively on LL2 observers deployed on freezer longline vessels. Through the analytical process, NMFS identified an additional group of vessels impacted by the availability of nontrawl LL2 observers. Two catcher/processor vessels have used pot gear to harvest groundfish Community Development Quota (CDQ) each year since 2013. These vessels are required to carry a nontrawl LL2 observer when participating in this fishery. In addition, a new full coverage observer provider has been approved to provide observers in the full coverage category.

NMFS recommends the purpose and need statement include additional language to address the potential shortage of nontrawl LL2 observers for deployment more generally (i.e., to include pot CPs) as well as to reflect the permitting of AIS as a full coverage observer provider.

NMFS's recommended additions to the Council's purpose and need statement are identified below in Bold and underline text:

*Under monitoring and enforcement regulations in place since October 2012, owners of freezer longline vessels named on License Limitation Program (LLP) licenses endorsed to catch and process Pacific cod in the (BSAI) are required to select between two monitoring options: carry two observers so that all catch can be sampled, or use a motion-compensated flow scale to weigh Pacific cod before it is processed and carry one observer. Under both monitoring options, at least one of the observers must be endorsed as a lead level 2 observer for vessels using fixed-gear. **In addition to freezer longline vessels selecting the scales option, freezer longliners selecting the two-observer option and pot catcher/processors participating in the groundfish CDQ fisheries also are required to carry a nontrawl LL2 observer.***

*All freezer longline vessels except one have chosen the flow scales with a single LL2 observer option. This, combined with current observer deployment model that places most fixed-gear catcher vessels in the partial observer coverage category, means that there are few fixed-gear vessels in the full observer coverage category which do not require a LL2 observer. Therefore, observers employed by **four of the five** full coverage observer providers have few opportunities to gain the necessary experience to obtain the LL2 endorsement for vessels using fixed-gear.*

NMFS, observer providers, and industry undertook a series of non-regulatory actions designed to build and retain a pool of available LL2 endorsed observers. This included industry voluntarily deploying second observers on some freezer longline vessels, at a cost to the industry, in order to allow them the experience to earn the LL2 endorsement.

The Council is concerned about the potential for a shortage of LL2 observers for deployment on freezer longline vessels and the resulting costs that could be incurred. This action is intended to address the need to maintain a high standard of observer data quality, and the need to minimize the potential for shortages of LL2 observers and additional costs to industry.

1.2 Statutory Authority

Under the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) (16 U.S.C. 1801, *et seq.*), the United States has exclusive fishery management authority over all marine

fishery resources found within the exclusive economic zone (EEZ). The management of these marine resources is vested in the Secretary of Commerce (Secretary) and in the regional fishery management councils. In the Alaska Region, the Council has the responsibility for preparing fishery management plans (FMPs) and FMP amendments for the marine fisheries that require conservation and management, and for submitting its recommendations to the Secretary. Upon approval by the Secretary, NMFS is charged with carrying out the Federal mandates of the Department of Commerce with regard to marine and anadromous fish.

The Pacific cod and groundfish CDQ fishery in the EEZ off Alaska is managed under the FMP for Groundfish of the Bering Sea and Aleutian Islands management area (BSAI) and the Gulf of Alaska management area (GOA). The Observer Program is authorized by section 3.2.4.1 of the BSAI FMP and the GOA FMP. The experience requirements for observers deployed on specific vessels or fleets are specified in regulation and not specifically identified in the FMP's. Therefore, none of the proposed alternatives would require an amendment to the FMPs to be implemented. Depending on the alternative selected, the proposed action could amend Federal regulations at 50 CFR 679.

1.3 Description of Management Area

The proposed action affects the owners of longline catcher/processors participating in the groundfish fisheries in the BSAI and Gulf of Alaska (Figure 1), and the owners of pot catcher/processors participating in the Western Alaska CDQ fisheries in the BSAI.

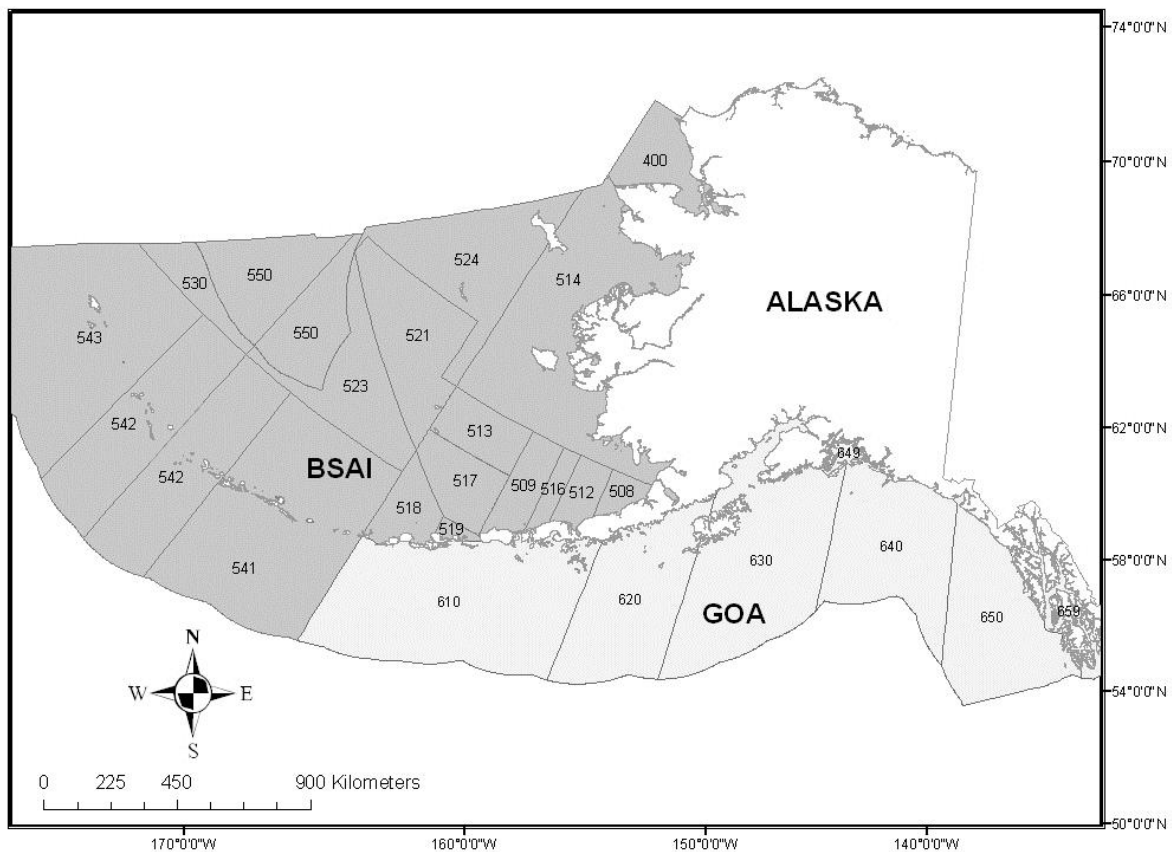


Figure 1 Regulatory and reporting areas in the Bering Sea, Aleutian Islands, and Gulf of Alaska

1.4 Observer Coverage and Experience Requirements

All vessels and processors that participate in federally managed or parallel groundfish and halibut fisheries off Alaska are in one of two observer coverage categories: (1) the full observer coverage category (full coverage), where vessels and processors obtain observer coverage by contracting directly with observer providers, and (2) the partial observer coverage category (partial coverage), where NMFS determines when and where observer coverage is needed, as described in the Annual Deployment Plan (ADP) for observers in the partial coverage category developed in consultation with the Council. Some vessels and processors may be in full coverage for part of the year and partial coverage at other times of the year, depending on the observer coverage requirements for specific fisheries. Funds for deploying observers on vessels in the partial coverage category are provided through a system of fees based on the gross ex-vessel value of retained groundfish and halibut. This observer fee is assessed on all landings by vessels that are not otherwise in full coverage.












Since 1999 with the implementation of CDQ program, closely followed by the implementation of American Fisheries Act (AFA) Program in 2002, NMFS has consistently required more experienced observers with specific deployment endorsements for vessels participating in groundfish catch share programs. This experience is necessary because of the unique incentives to misreport catch that are created by the act of assigning quota and therefore accountability to individual entities (cooperatives or vessels). Additional detail about why experienced observers are required for deployment on vessels participating in the freezer longline voluntary cooperative is discussed in Section 1.5 of this analysis. Catch share programs with additional monitoring and equipment requirements include: the CDQ Program (63 FR 30381; June 4, 1998), the Pollock Fishery AFA Program (67 FR 79692; December 30, 2002), the Amendment 80 Trawl Program (72 FR 52668; September 14, 2007), the GOA Rockfish Pilot Project (71 FR 67210; November 20, 2006), and its successor Rockfish Program (76 FR 81248; December 27, 2011).³ The minimum number of observers required and the deployment endorsements required for vessels are summarized below in Table 1.

According to regulations at 50 CFR 679.7(a), any person participating in the groundfish or halibut fisheries in the BSAI or GOA management areas is prohibited from harvesting or processing fish except in compliance with observer coverage requirements.

³ The Halibut and Sablefish IFQ Program does not include transferrable PSC limits that would necessitate vessel level accountability for discards at sea. The revised Rockfish Program adopted existing lead level 2 requirements, so the rule cited does not reference the lead level 2 requirement.

Table 1 Number of observers and deployment endorsement requirements for commercial fishing vessels.⁴

These requirements apply to vessels in full coverage (blue) at all times when fish are being harvested or processed and for vessels in the partial coverage on selected fishing trips. The darker shades of blue indicate additional deployment endorsements and more than one observer may be required.

Vessel and Gear type		Fishery	Min number of observers and Deployment endorsements
Full Coverage	Mothership ⁵	Groundfish CDQ – delivery of unsorted codends	 
	Trawl CPs & Motherships	Pollock CDQ Groundfish CDQ BSAI Pollock Amendment 80 vessels in BSAI Rockfish Program	 
	H&L CP ⁶	BSAI Pacific cod Groundfish CDQ	 
		Two observer option	
	Pot CP	Groundfish CDQ	
	CP & MS All gear types	All other fisheries (including H&L CPs that “opt out” of the BSAI Pacific cod fishery)	
	Trawl CV	Groundfish CDQ BS Pollock CGOA Rockfish Program	
	H&L CV	46’ LOA CDQ Groundfish	
Partial Coverage ⁷	H&L CP	Small CPs, except full coverage	
	CV ≤ 46’ LOA	Groundfish CDQ fishing	
	CV ≥ 40’ LOA	All other fisheries except full coverage	
	CV < 40’ LOA ⁸	All Fisheries	
	EM Selection pool		

 = certified observer  = level 2  = lead level 2  = electronic monitoring

⁴ Information in this table is summarized. Observer coverage requirements are detailed in regulations at 50 CFR 679.51 included in Appendix B.

⁵ The requirement for two level 2 observers for motherships in the CDQ fisheries was implemented in 1998. Very few CPs have operated as motherships by taking deliveries from catcher vessels in the non-pollock CDQ fisheries until more recent years. NMFS will review this requirement relative to requirements for the same operation type in the non-CDQ fisheries and determine if regulatory amendments are needed to better align these requirements.

⁶ Freezer longline vessels subject to monitoring requirements at 50 CFR §679.100.

⁷ In the partial coverage category, one certified observer is required on selected trips. Observer coverage selection rates are determined in the Annual Deployment Plan (NMFS 2016c).

⁸ CVs < 40’ LOA have been in the zero selection pool under each ADP since 2013.

Observer deployment endorsements

Observer deployment endorsements are defined at 50 CFR 679.53 and include general certification and annual deployment endorsement requirements as well as “Level 2” and three types of “Lead level 2” endorsements based on specific experience and gear type requirements. All observers must attend an annual briefing and a subsequent pre-cruise briefing for additional deployments throughout the year. The training and experience requirements to gain the various deployment endorsements are summarized in Table 2.

Table 2 Observer training and experience requirements for the various observer deployment endorsements.

Endorsement	Requirements*
Observer Certification	Minimum eligibility Initial observer training
Level 2	Observer certification 60 data collection days as an observer in the North Pacific fisheries Met expectation on last cruise
Lead Level 2 nontrawl gear	Level 2 endorsement 2 cruises (contracts) - at least 10 days each 30 sampled sets on a vessel using non-trawl gear
CP Lead Level 2 trawl gear	Level 2 endorsement 2 cruises (contracts) 100 sampled hauls on a CP using trawl gear or a MS
CV Lead Level 2 trawl gear	Level 2 endorsement 2 cruises (contracts) 50 sampled sets on a CV using trawl gear

*Regulations at 679.53(a)(5) define the training and experience requirements for observer deployment endorsements.

In previous discussion papers, NMFS used the terms “fixed gear lead level 2” or fixed gear LL2, and “nontrawl lead level 2” or nontrawl LL2, interchangeably. Analysts are attempting to standardize this term to nontrawl LL2 observer because this is the term used in the regulations governing LL2 endorsements.⁹ Both terms mean an observer with the experience required for the level 2 “lead” deployment endorsement for a catcher/processor vessel using nontrawl (primarily hook-and-line and pot) gear.

Permitted observer providers are responsible for tracking observer deployment endorsements and ensuring observers assigned to vessels that require additional endorsements have the appropriate endorsements for those assignments. Observer providers do this by verifying observer experience with Observer Program staff. The Observer Program Office does not issue documentation of endorsements. The Observer Program has tracked nontrawl LL2 observers since 2014 when this information was requested by the Council to be included in the Observer Program Annual Report.

⁹ In 50 CFR 679.2, nontrawl gear is defined as “longline and pot gear,” and longline gear is defined as “hook-and-line, jig, troll, and handline or the taking of fish by means of such a device.” Fixed gear is defined in 50 CFR 679.2 as applying specifically to authorized gear for the halibut and sablefish IFQ or CDQ programs and the term generally is not used in part 679 to refer to gear used in any other groundfish fisheries.

1.5 Freezer Longline Monitoring Requirements

Existing observer coverage requirements for vessels participating in the longline CP subsector voluntary cooperative were implemented on October 26, 2012 (77 FR 59053, September 26, 2012). NMFS implemented the monitoring and enforcement provisions as a result of several pieces of legislation passed by Congress and recent changes to fishery management regulations, including (1) legislation that created a defined class of participants in the BSAI longline CP subsector—the 2005 Consolidated Appropriations Act (Pub. L. 108–447), (2) regulatory amendments allocating a specific quantity of Pacific cod resources in the BSAI to the defined class of longline CP subsector participants—detailed in the final rule implementing Amendment 85 to the BSAI FMP (74 FR 56728, November 3, 2009), and (3) legislation that allows BSAI longline CP subsector participants to receive exclusive catch privileges—the Longline Catcher Processor Subsector Single Fishery Cooperative Act of 2010 (Pub. L. 111–335). In combination, these changes created the opportunity for the BSAI longline CP subsector to form a voluntary fishing cooperative whose members have a *de facto* catch share program because they control fishing for the longline C/P subsector’s allocation of Pacific cod in the BSAI.

The formation of the voluntary cooperative in 2011 resulted in a significant change in the operations of the freezer longliners in the BSAI Pacific cod fishery. Under the voluntary cooperative, members allocate a proportion of the available Pacific cod resources among their members based on private contractual arrangements. This change essentially ended the race for fish in the BSAI Pacific cod CP sector and increased economic efficiency for the fleet, but it also created management challenges. Catch share programs create new demands for enhanced catch accounting, monitoring, and enforcement. They increase incentives for participants to misreport catch through unauthorized discards or inaccurate catch reports. If catch can be successfully misreported or underreported, the fishing season continues longer than it should, and the vessel owners and operators are able to catch more Pacific cod than are allocated to the subsector. The fact that the vessel owners and operators are fishing cooperatively under contract to maximize the harvest and value of the Pacific cod allocation for a given halibut prohibited species catch (PSC) limit provides additional opportunities for them to communicate and cooperate to underreport catch.

Catch share programs require participants to cease fishing when their individual quota allocations are reached. In the case of the voluntary cooperative, NMFS retains the authority to issue a closure to directed fishing for Pacific cod by the BSAI longline CP sector if its allocation is reached. However, because the cooperative has divided the Pacific cod and halibut PSC sector allocations among its members, industry participants need near-real time catch accounting data so they can closely monitor their catch and prevent fishing in excess of the allocation. For all catch share programs implemented since 1998, NMFS has required the use of observer data as the best available source of information about the catch of the allocated species. Observer information is used in the NMFS Catch Accounting System and participants in the catch share programs access their vessel’s observer data to monitor catch against their allocations on a daily basis. All concerned parties (NMFS, other management agencies, and fishery participants) must have access to a single, authoritative database that clearly and accurately details the amount of quota harvested. If NMFS makes corrections when reviewing observer data during the observer debriefing process, all parties must receive, or have access to, the edited data.

To meet the increased monitoring needs in other GOA and BSAI catch share programs, NMFS developed a suite of monitoring and enforcement measures designed to ensure accurate and near real-time catch accounting for allocated species. These measures include observer coverage requirements, observer sampling protocols, at-sea scale requirements, electronic reporting, and other measures to ensure that catch is accurately accounted for.

In 2012, regulations were put in place to increase monitoring of the freezer longline voluntary cooperative. The monitoring requirements apply to vessels in the longline CP subsector when those vessels (1) operate in either the BSAI or GOA groundfish fisheries when directed fishing for Pacific cod

is open in the BSAI, or (2) while the vessel is participating in the CDQ fisheries (“groundfish CDQ fishing”). Members of the subsector who do not intend to fish for Pacific cod in the BSAI or to conduct groundfish CDQ fishing during the upcoming calendar year may “opt out” and are not subject to the enhanced monitoring requirements in that calendar year. Except for vessels that opt out, any vessel that participates in the BSAI Pacific cod fishery must comply with the monitoring requirements at all times when operating in either the BSAI or GOA groundfish fisheries when directed fishing for Pacific cod is open in the BSAI, or while the vessel is groundfish CDQ fishing. Since formation of the voluntary cooperative and the implementation of these requirements, NMFS has not issued a closure of the CP longline BSAI Pacific cod fishery, therefore, these monitoring requirements have applied at all times of the year since implementation.

Members of the longline CP subsector who fish for Pacific cod in the BSAI or to conduct groundfish CDQ fishing are required to select one of two monitoring options: (1) increased observer coverage; where two observers are required so that all catch can be sampled, or (2) one observer and a motion-compensated scale (flowscale) is used to weigh Pacific cod before it is processed. Under the increased observer coverage option, one of the observers onboard the vessel must have a lead level 2 deployment endorsement. Under the scales option, the sole observer aboard the vessel is required to have a lead level 2 deployment endorsement. The scales provide data on the weight of retained Pacific cod and the single observer is responsible for obtaining Pacific cod discard estimates and halibut PSC estimates for debiting the voluntary cooperatives quota accounts. To minimize the potential for problems with this approach, NMFS requires the single observer to have a lead level 2 endorsement. These experienced observers are more likely to have the skills necessary to deal with unexpected sampling issues, reliably collect high quality data, and subsequently reduce the potential for data loss.

The implementation of the two monitoring options for freezer longline voluntary cooperative was the first quota share program since 1999 involving catcher/processors in which only a single observer is required. The use of scales to facilitate measurement of the volume of retained Pacific cod with a single observer, was previously untested. To minimize potential problems with this approach, NMFS required the single observer to meet the minimum experience for the lead level 2 endorsement. These experienced observers are more likely to have the skills necessary to deal with unexpected sampling issues and reliably collect high quality data.

Unless all sets are sampled, observer sampling protocols require random selection of which hauls to sample. This sampling regimen is very demanding and can involve erratic sleep schedules over long periods of time. More experienced observers are typically better able to cope with this kind of demanding schedule, have developed personal time management strategies to maximize sampling efficiency, and maintain a high level of performance over a longer period of time. Under the scales monitoring option, the only source for Pacific cod discard, and halibut PSC catch estimates, will be from the single observer aboard the vessel. A lead level 2 observer is more likely to be able to quickly and independently determine the best methods for collecting these two important sources of data. Observers with little or no experience aboard a longline vessel are unfamiliar with vessel operations and layouts that could affect the ability to correctly collect this essential information to provide discard estimates and halibut PSC estimates.

In all other catch share programs, two observers, one of whom is a LL2 observer, monitor scale performance. In this program, only one observer is aboard the vessel under the scales option. The scale location and process for weighing is very different in this program. Unlike other catch share programs, catch is sorted and bled prior to weighing. The observer may only directly monitor the catch being weighed during short periods of time while cameras monitor all points where catch may be sorted or discarded prior to the flowscale. An observer with more experience will be more likely to address issues with scale performance with the responsible vessel representatives prior to disembarking the vessel.

The implementation of these monitoring and enforcement requirements has improved Pacific cod catch estimates due to the increased observer coverage. It allows vessel owners to choose between two monitoring options, one with two observers and one with one observer and a flowscale, and reduces the potential for vessel behavior to bias estimates of catch and bycatch. Improvements to catch estimation were achieved under these monitoring requirements by weighing all Pacific cod retained on vessels selecting the scales monitoring option and by decreasing the number of unsampled sets on vessels selecting the increased observer coverage options. Additional increases to the proportion of each set that is sampled and electronic monitoring requirements have also contributed to improved quality of Pacific cod catch estimates compared to the prior monitoring requirements (NMFS 2012).

All but one vessel that regularly operates in the BSAI Pacific cod or CDQ fisheries has installed a flowscale and operates under the scales monitoring option. The one vessel that has not installed a flowscale has operated under the increased observer coverage monitoring option since 2013. Therefore, the majority of the catch estimates for Pacific cod are derived from scale weights of Pacific cod supplemented by observer data documenting discarded catch or catch that dropped off the line and was not retained. Observer data are the only source of information used to estimate CPUE, discard of groundfish species, incidental catch and bycatch of other species (including seabirds), and PSC.

1.6 Enforcement Considerations

In December 2011, NMFS Office for Law Enforcement (OLE) noted an increase in the number of complaints from observers about intimidation and interference issues in the freezer longline sector. The number of complaints tripled from 4 in 2008 to 13 in 2011 with a total of 37 complaints in this period (NMFS 2012). Over the 4 year period 2013 thru 2016, NMFS OLE received 48 complaints of intimidation, interference, or sample biasing from observers deployed to the freezer longline sector, with the annual number of complaints ranging from 10 to 13. The freezer longline fleet continues to be an area of concern for NMFS OLE. In March 2016, NOAA OLE sent a letter identifying examples of sample interference and other compliance concerns in each of the catcher/processor sectors (Lagerwey, 2016). The letter was intended to serve as a reminder of applicable requirements and to inform vessel owners and operators that OLE was aware of the complaints and that vessel companies should implement corrective actions. Anecdotal reports since the March 2016 letter indicates that interactions between freezer longline vessels and observers has improved overall (Lagerwey, Pers. Comm. March 7, 2017).

1.7 History of this Action

Concerns about LL2 observer availability first arose during the development of equipment and operational requirements for BSAI freezer longline vessels in 2011. The new monitoring requirements were implemented in 2012 (77 FR 59053, September 26, 2012) whereby NMFS required all vessels participating in the voluntary cooperative to harvest Pacific cod in the BSAI to comply with additional monitoring requirements that include observer coverage and other equipment requirements. Under both monitoring options, at least one observer must have the lead level 2 deployment endorsement. In response to observer provider and industry concerns about the long term availability of LL2 endorsed observers, the rule implementing the new monitoring requirements reduced the experience requirements for lead level 2 endorsed observers from 60 sampled sets to 30 sampled sets.

In February 2014, the Council, the Council's Observer Advisory Committee (OAC), and NMFS received letters and comments from observer providers and vessel representatives concerned with the availability of LL2 observers for deployment on freezer longline vessels. Table 3 documents significant Council and NMFS's actions related to this issue with additional detail provided in Appendix C. The need for a discussion paper exploring potential long term regulatory solutions to the LL2 observer availability issue was identified by the Council in June 2014. This project remained a low analytical priority until April 2016 after the completion of higher priority projects allowed staff to be tasked with the completion of

work on this project. A discussion paper was presented to the OAC in September 2016 and to the Council in October 2016.

Table 3 Summary of Council and NMFS actions related to nontrawl lead level 2 observer availability.

Year	Council Action	NMFS Action
2011	<u>October</u> – Reviewed draft RIR/EA including information about LL2 requirement.	<u>October</u> – Draft RIR/EA presented to the Council.
2012		<u>June 15</u> – Proposed Rule to implement monitoring and enforcement requirements in the BSAI Freezer Longline fleet. LL2 experience requirements proposed to be reduced from 60 sampled sets to 30 sampled sets. <u>October 26</u> – Final rule implementing monitoring and enforcement requirements in the BSAI Freezer Longline Fleet.
2014	<u>June</u> 1) Request for information about LL2 observer availability. 2) Request for a discussion paper to identify options to create an adequate and renewable pool of LL2 observers. 3) Request NMFS accurately credit observers for sampling experience. <u>October</u> 1) Recognized a shortage of LL2 observers for deployment on freezer longline vessels. 2) Request for a discussion paper to explore regulatory solutions to LL2 observer availability. 3) Request an industry work group meeting to identify possible non-regulatory short term solutions. <u>December</u> – Received an update from FLC on non-regulatory actions identified during November 13 work group meeting.	<u>June</u> – Provided information on LL2 availability in the 2013 Observer Program Annual Report. <u>November 13</u> – Work group meeting with Observer Providers, FLC representatives and members to discuss non-regulatory short term solutions to LL2 observer availability.
2015	<u>October</u> – 1) Request discussion paper to evaluate specified options to address the shortage of LL2 observers. 2) Request for updated information on LL2 observer availability. 3) Encourage A.I.S., Inc. (AIS) to become permitted observer provider.	<u>Jan</u> – Modified the random sample tables to reduce observer workload on freezer longline vessels. <u>Feb 3</u> – Implemented changes to the Observer Program policy to credit observers for sampled hauls toward LL2 endorsement. <u>June</u> – Provided information on LL2 availability in the 2014 Observer Program Annual Report.
2016	<u>April</u> – Discussion paper scheduled to be reviewed by the OAC in September and the Council in October 2016. <u>June</u> – Request NMFS delay action on AIS permit application until LL2 discussion paper is completed. <u>October</u> 1) Reviewed discussion paper. 2) Request Initial Review Draft Analysis prepared to analyze the identified alternatives & purpose and need.	<u>March 24</u> – Received AIS full coverage observer provider permit application. <u>June</u> – Provided information on LL2 availability in the 2015 Observer Program Annual Report. <u>August 31</u> – Approved AIS full coverage observer provider permit.

1.8 Ongoing NMFS Actions

The Observer Program recommended three non-regulatory actions in the October 2016 discussion paper designed to reduce the stress and workload and subsequently address data quality concerns resulting from the stressful workload for observer assigned as a sole observer on a freezer longline vessel. These recommendations were supported by the Council during the October, 2016 meeting and will be pursued in the future. An update on the status of these three recommendations is detailed below.

Revise data collection protocols

Reducing an observer's daily workload would allow an observer more time to rest or sleep, and would likely result in improved observer health and safety as well as an overall increase in data quality. By reducing the total amount of time an observer spends collecting samples, the observer may be better rested and alert and therefore less likely to make mistakes that may result in inaccurate information used for catch accounting. Observers that are able to maintain adequate rest while deployed are less likely to "burn out" and therefore more likely to deploy on a subsequent assignment on a freezer longline vessel, potentially increasing retention of nontrawl LL2 endorsed observers. Possible reductions could occur within the collection of effort data, composition data, biological data collections as well as expectations associated with compliance monitoring. Observer Program staff routinely assist observers to evaluate sampling situations on the vessels and determine how best to apply sampling procedures to specific at-sea situations, this practice would continue while the data collection protocols are under reviewed.

The process of revising data collection protocols requires Observer Program staff to engage with data users to evaluate data collection needs and assess potential opportunities to reduce or eliminate some data collection requirements. Observer data are used by a variety of clients including fishery managers, fishery scientists, and the fishing industry for a variety of purposes that include inseason quota management, stock assessments, protected species interactions, and marine ecosystem studies, to name a few. The Fisheries Monitoring and Analysis Division at the Alaska Fisheries Science Center will be engaging with stakeholders in 2017 to evaluate the broad suite of observer program data collection requirements and opportunities to reduce or possibly eliminate some of these data collections. This will require a significant amount of staff time to complete, and once agreed upon, the new data collection protocols will need to be incorporated into observer training materials, data collection forms, and the AFSC Observer Program database (NORPAC). Potential benefits include reduced time for observers in training, debriefing, and with at-sea data collection, and potential reductions in staff time spent on training, debriefing, and other program activities.

Nontrawl LL2 Observer Training

Observer Program staff have already developed additional freezer longline specific training materials as part of the new Observer Program policy about how observers may earn credit for partially sampled hauls (Appendix D). Because the materials already exist, there would be minimal staff time required for the implementation of a new training program but would require additional staff time to provide the training. This new training is currently offered on a voluntary basis as an additional option to add a couple of hours of training to existing training classes to better prepare observers that do not have a current nontrawl LL2 endorsement. Because the voluntary training class is incorporated into an existing training class, the additional costs to an observer provider are minimal. Since the implementation of the LL2 policy in February 2015 through 2016, only one observer has received the additional training.

Pre-Cruise meetings

A pre-cruise meeting provides an opportunity for Observer Program staff to participate in a conversation between the vessel crew and a new observer prior to embarking on a trip. This allows staff to clarify expectations, and provide knowledgeable advice about anticipated sampling scenarios that an observer may encounter at sea. Establishing a habit of conducting pre-cruise meetings prior to an observer's first assignment on a freezer longline vessels will better prepare the observer and the crew to work together

collaboratively and develop clear communication strategies. Pre-cruise meetings are currently a requirements in other fisheries and are offered on a voluntary basis to vessels in the freezer longline fleet. Pre-cruise meetings are typically available in Dutch Harbor or Kodiak or, upon request and pending staff availability, in other ports such as Seattle or Anchorage.

2 Description of Alternatives

The Council recommended a set of alternatives at its October 2016 meeting (see Appendix A). **NMFS suggests revisions to the alternatives identified in the Council's motion, which do not substantially change the content, but reword and reorder them to maintain consistency with terminology used in existing regulations and help to illustrate the differences among the alternatives. In addition, NMFS recommends adding a new option under Alternative 3 (Option 3.2), and has identified two different ways Alternative 4 could be implemented, and recommends adding options 4.1 and 4.2 to clarify those distinctions.**

The new Option 3.2 would allow sampling experience on trawl CPs to count toward nontrawl LL2 endorsement, add an additional training requirement, and would also require vessel owners to participate in a pre-cruise meeting if requested to do so by NMFS. Option 3.2 would apply the changes to the nontrawl LL2 endorsement requirements to any vessel required to carry a nontrawl LL2 observer, including freezer longliners selecting the scales option or the two observer option as well as pot catcher/processors participating in the groundfish CDQ fisheries.

To limit the number of changes suggested to the Council alternatives and options, analysts did not add language to all alternatives and options to allow each to apply to all vessels with a nontrawl LL2 observer requirement (such as freezer longline vessels without a flowscale or pot CP vessels groundfish CDQ fishing). However, should the Council select a preliminary preferred alternative other than Alternative 3 Option 3.2, this feature could be added to the other alternatives or options and analyzed further in a later draft analysis.

NMFS has also identified two different ways to implement Alternative 4 (options 4.1 and 4.2). NMFS's recommended additions to the alternatives and options are identified below in bold and underline text.

The recommended revised alternatives are as follows:

Alternative 1: No action. Continue to require owners of freezer longline vessels selecting the scales with a single observer option to carry a nontrawl LL2 observer, and provide no exceptions if a nontrawl LL2 observer is not available.

Alternative 2: LL2 Exception. Create a regulatory exception that would allow a freezer longline vessel to carry a substitute observer if a nontrawl LL2 observer is not available.

Option 2.1: The substitute observer must have a LL2 endorsement for a catcher/processor using trawl gear.

Option 2.2: The substitute observer must have at least a Level 2 endorsement.

Option 2.3: The substitute observer must be a certified observer.

Alternative 3: Observer Options. Modify the nontrawl LL2 observer coverage requirement.

Option 3.1: Allow two observers to deploy as an alternate observer coverage option to the one nontrawl LL2 observer on a freezer longline vessel selecting the scales option.

Suboption 3.1.1: Both observers must have a Level 2 endorsement.

Suboption 3.1.2: One observer must have a Level 2 endorsement and the second observer may be any certified observer.

Option 3.2: Modify the nontrawl lead level 2 endorsement to allow sampling experience on trawl CPs to count toward nontrawl LL2 endorsement with an additional training requirement and require vessel owners to participate in a pre-cruise meeting if requested to do so by NMFS.

Alternative 4: Agency Funding. Institute an at-sea training component to the Federal observer training program, whereby the agency would pay for nontrawl LL2 endorsement.

Option 4.1: NMFS-funded deployment of second observers

Option 4.2: NMFS-funded At-Sea Training Program

Table 4 summarizes the observer requirements, vessel options if a shortage of LL2 observers occurs, and the primary mechanism to reduce the potential for a shortage of LL2 observers for each of the alternatives and options.

Table 4 Summary of the alternatives

Alternative	Observer Requirement	Options if a shortage of LL2 observers:	Mechanism to reduce the potential for a shortage of LL2 observers:
Alternative 1: No Action	1 nontrawl LL2 observer		Industry pays for voluntary deployment of second observers to increase pool of LL2 endorsed observers.
Alternative 2: LL2 Exception	1 nontrawl LL2 observer	Opt. 2.1 Trawl LL2 Obs. Opt. 2.2 Level 2 Obs. Opt. 2.3 Certified Obs.	Removes LL2 requirement under specific circumstances.
Alternative 3: Observer Options	Opt. 3.1 1 nontrawl LL2 observer OR 2 observers	Subopt. 3.1.1 Two level 2 Obs. Subopt. 3.1.2 One level 2 and a certified obs.	Creates a substitute observer coverage choice that does not require a LL2 observer.
	Opt. 3.2 1 nontrawl LL2 observer		Increases number of LL2 observers by allowing trawl CP sampling experience to count towards a fixed gear LL2 endorsement.
Alternative 4: Agency Funding	1 nontrawl LL2 observer		Agency pays to increase the pool of LL2 endorsed observers by: Opt. 4.1 NMFS deploys second Observers Opt. 4.2 NMFS At-Sea training program

2.1 Alternative 1, No Action.

This alternative would maintain observer coverage and nontrawl LL2 endorsement requirements for BSAI freezer longline vessels and pot catcher/processors participating in the groundfish CDQ fisheries as they currently exist in 50 CFR part 679. Vessels that are named on a BS or AI Pacific cod-endorsed limited license program (LLP) permit must either opt out of fishing for Pacific cod in the BSAI with longline gear and fishing for groundfish CDQ, or choose from one of two monitoring options for all fishing activity when the BSAI Pacific cod fishery is open or when directed fishing for groundfish CDQ: carry two observers, or install at-sea scales and carry a single observer who is endorsed as a nontrawl LL2¹⁰. Pot catcher/processors would continue to be required to carry at least one nontrawl LL2 observer at all times while participating in the groundfish CDQ fisheries.

Vessels would procure observer coverage by contracting with a permitted observer provider and the observer provider would continue to be responsible to ensure qualified observers are available for deployment. Vessels are prohibited from conducting fishing activity without required observer coverage under regulations at 679.7(a)(3). There is no mechanism to relieve a vessel from an observer coverage requirement in the full observer coverage category.

Observer providers would continue to coordinate with vessel owners and operators to plan necessary observer coverage for vessel operations. Vessel owners may contract with any permitted observer provider (there are currently 5) to obtain an observer with the required endorsements. Observer providers would continue to be responsible to recruit qualified observers, ensure observers receive required training, assign observers to a vessel, and ensure observers complete debriefing in a timely manner. Observers would continue to earn the required experience toward a nontrawl LL2 endorsement on a catcher vessel (CV) or catcher/processor (CP) using nontrawl gear that does not require an observer with a nontrawl LL2 endorsement. The conditions that currently exist, which necessitate vessel operators to cooperate with observer providers to develop and maintain an adequate pool of nontrawl LL2 endorsed observers, is likely to continue to exist into the future.

Under this and all alternatives, NMFS has recommended that the protocols and observer sampling duties defined in the Observer Sampling Manual be reviewed with the intent to reduce the at-sea workload for observers deployed as a sole LL2 on a freezer longline vessel. Observer workload is influenced by the pace of fishing and the number of hauls retrieved each day by a vessel. In October 2016, NMFS recommended three non-regulatory actions that could be taken to improve observer workload and therefore improve observer's health and safety when deployed as a sole observer on a freezer longline vessel. These non-regulatory actions are described in Section 1.8.

2.2 Alternative 2, LL2 Exception.

This alternative would maintain the choice of two monitoring options for vessels participating in the BSAI Pacific cod CP fishery, including the existing observer coverage requirements for vessels that have selected the scales monitoring option and are required to carry one observer with a nontrawl LL2 endorsement during all fishing activity when the BSAI Pacific cod fishery is open or when directed fishing for groundfish CDQ. This alternative would, however, create a regulatory exception that would allow the owner of a freezer longline vessel to request approval to carry a substitute observer under specific circumstances when a nontrawl LL2 observer is not available. All other aspects of the alternative remain the same as under Alternative 1.

¹⁰ Experience requirements for the various observer deployment endorsements are summarized in Table 2 in Section 1.3 of this analysis.

To implement this alternative, the regulations would define criteria or specific circumstances under which an exception could be approved, and the steps in an approval process. If the circumstances described in regulation were met, NMFS would authorize the deployment of a substitute observer on a freezer longline vessel for the duration of one trip. The LL2 exception would not allow a vessel to fish without an observer onboard, but would allow the deployment of an observer with an alternate experience level. The alternative includes three endorsement or certification options for the substitute observer¹¹:

Option 2.1: Observer with a trawl CP LL2 endorsement

Option 2.2: Observer with a level 2 endorsement

Option 2.3: Certified observer

To request an exception to the LL2 requirement, the vessel owner would submit detailed information to NMFS regarding anticipated fishing plans, attempts to procure observer services and LL2 observer availability at the time fishing would start. NMFS would review the information and determine whether an exception should be approved or denied. If approved, the vessel would be authorized to fish with a substitute observer in lieu of a nontrawl LL2 observer for the duration of one trip. Section 4.2 describes in more detail the ways in which NMFS could implement this alternative including the specific circumstances that would need to be met to qualify for an exception, and the administrative approval process, including appropriate timeframes for determining that a nontrawl LL2 observer is unavailable, and granting exceptions.

2.3 Alternative 3, Observer Options.

This alternative would revise or add to the options for the observer coverage requirements for BSAI freezer longline vessels, and under Option 3.2, for pot catcher/processors while participating in the groundfish CDQ fisheries. Option 3.1 would add an additional monitoring option to the two currently provided, for vessels that have installed at-sea scales: to allow the deployment of two observers in lieu of one nontrawl LL2 observer. In contrast, Option 3.2 would maintain the two existing options, but would modify the sampling experience and training requirements for a nontrawl LL2 endorsement, and add a regulation that would allow NMFS to require a pre-cruise meeting.

Option 3.1: Two Observers

This option would define in regulation an additional observer coverage option to allow two observers to deploy in lieu of one nontrawl LL2 observer. Suboption 3.1.1 and 3.1.2 describe two different options for the minimum experience requirements of the two observers. The option to carry two observers in lieu of one nontrawl LL2 observer would only be available to freezer longline vessels selecting the scales monitoring option, but would be available at any time of the year and without an approval process. This option would not modify the observer requirement for a freezer longline vessel selecting the increased observer coverage monitoring option that does not require flowscale.

Suboption 3.1.1: Two Level 2 Observers

This suboption would require both observers to have a Level 2 endorsement. This would mean that if a vessel that has at-sea scales installed chooses to carry two observers in lieu of one nontrawl LL2 observer, both observers must meet the minimum experience requirements for the Level 2 deployment endorsement.

¹¹ Experience requirements for the various observer deployment endorsement are summarized Table 2 in Section 0 of this analysis.

Suboption 3.1.2: Two Observers, One with a Level 2 Endorsement

This suboption would require that one of the two observers have a Level 2 endorsement. The second observer could be any certified observer, with no minimum level of experience required.

Option 3.2: Modify the nontrawl LL2 endorsement requirements.

This option would modify the experience and training requirements for the LL2 deployment endorsement required for an observer to deploy as a lead on a freezer longline vessel operating under either of the two monitoring options described at 679.100, or on a pot catcher/processor participating in the groundfish CDQ fisheries. In addition, this option would require vessel owners to participate in a pre-cruise meeting if requested to do so by NMFS.

NMFS recommends applying Option 3.2 to any vessel required to carry a nontrawl LL2 observer. The problem brought to the Council by industry focused on the availability of nontrawl LL2 observers for freezer longline vessels choosing the scales option. However, as noted in Section 0, a nontrawl LL2 observer also is required for freezer longliners selecting the two observer option and for pot catcher/processors participating in the groundfish CDQ Program. If there is a problem with the availability of nontrawl LL2 observers, these vessels also may be affected by that issue in the future. In addition, to apply any regulatory change to all vessels required to carry a nontrawl LL2 observer would eliminate the need to have separate definitions of nontrawl LL2 observers for different vessel types or fisheries.

Vessels would still be required to carry a LL2 endorsed observer, but regulations at 50 CFR 679.53 that describe the necessary requirements for a nontrawl LL2 endorsement would be modified to allow prior experience collecting data on catcher/processor vessels of any gear type to qualify an observer to enroll in a required training class. Successful completion of the experience requirements and nontrawl training class as determined by the Observer Program would allow an observer to deploy as a lead level 2 observer on a nontrawl vessel. Regulations at 50 CFR §679.100 and 50 CFR §679.32 would be modified to require a vessel with a nontrawl LL2 observer requirement to participate in a pre-cruise meeting if notified to do so by NMFS. This requirement would authorize NMFS to request a pre-cruise meeting when it is determined by NMFS to be necessary, and would not be an across the board requirement for all trips or all vessels.

All other aspects of the alternative including how vessels procure observer coverage would remain the same as under Alternative 1.

2.4 Alternative 4, Agency Funding

This alternative would not change the existing observer coverage requirements for freezer longline vessels defined in regulations at 50 CFR 679.51(a)(2)(vi)(E)(2). This alternative would shift the cost burden of supplementing the pool of nontrawl LL2 endorsed observers from the industry to the Agency. Two substantively different implementation options have been identified and are discussed in the following sections.

Under either option, NMFS funds would be used to either deploy second observers or implement a training program for the purpose of getting observers the nontrawl LL2 endorsement. This would require dedicated NMFS funds to ensure that training could be provided through a contract either with observer providers or vessels.

Option 4.1: NMFS funded deployment of second observers.

Under option 4.1 to Alternative 4, a contract would be created between NMFS and permitted observer providers whereby the Agency would pay for the deployment of second observers on freezer longline

vessels. This option would closely mimic the existing practice of voluntary deployment of second observers to increase the pool of qualified observers for deployment as a lead on freezer longline vessels, but it shifts the cost burden from industry to NMFS. Under this option, observers deployed as second observers would gain experience toward the nontrawl LL2 endorsement.

Observer providers would continue to be responsible to recruit qualified observers, ensure observers receive required training, assign observers to a vessel, and ensure observers complete debriefing in a timely manner. Observer providers would also be responsible to project demand for nontrawl LL2 observers and notify NMFS when the deployment of second observers is necessary to supplement the pool of lead observers for deployment on freezer longline vessels.

Option 4.2: NMFS funded At Sea Training Program

This option would create an at-sea component of the existing observer training program to provide at-sea sampling experience and training to observers in order to prepare them to successfully deploy as the lead observer on a freezer longline vessel. At-sea training is currently a component of the North East Fisheries Observer Program (NEFOP) observer certification training program. All NEFOP observers are required to participate in a “training trip” for each gear type. The NEFOP contracts with a vessel to conduct a day-long training trip with program staff and a group of trainee observers.

These training trips introduce new observers to hands on sampling techniques and at-sea conditions. This is basically an on-the-water classroom experience where a vessel is contracted to conduct fishing as directed by program staff to facilitate observer training. Multiple observers and NMFS staff are deployed on each training trip. Under this option, to shorten the duration of training trips, regulations could be amended to modify the observer experience requirements for the nontrawl LL2 endorsement to allow at-sea training experience to count in lieu of the 30 sampled sets, or in combination with a level of sampling experience.

The NEFOP model would be a significantly different approach to implementing an at-sea training component than the approach described under option 4.1 of this alternative. The NEFOP model would require additional permits and funding to conduct fishing activities and would more closely resemble a research charter than a standard commercial fishing trip. NMFS staff could be deployed onboard the vessel to provide training and guidance to observers. Trip duration and number of training trips each year would be limited by the available budget.

2.5 Alternatives Considered but not Analyzed Further

The Council considered six different potential alternatives to address a shortage of LL2 observers at its October, 2016 meeting. Six options were reviewed in the discussion paper prepared for the October 2016 meeting. Of those six options, three were not recommended for further analysis and the Council expressed support for the implementation of the policy and procedural changes recommended by the Observer Program. The alternatives considered but not further analyzed are summarized below.

Allow observer experience on fixed gear vessels in other regions to count towards LL2 certification.

This option would have modified the experience requirements to allow experience from other Regional Observer Programs to count toward the LL2 endorsement. This option was considered and rejected for further analysis due to the limited crossover of observers from other regions and the relatively low likelihood that experience in another region would result in the development of skills directly applicable to work on a freezer longline vessel in Alaska.

Allow full coverage providers to deploy observers on pot CVs in the partial coverage category to secure nontrawl LL2 certification.

This option would have either modified the partial observer coverage contract or created a regulatory option to allow the permitted observer providers to deploy observers on pot catcher vessels in the partial observer coverage category to gain experience toward the LL2 endorsement. This option was rejected for further analysis due to the relatively low level of interest expected from pot catcher vessels to carry an observer on a voluntary basis. The observer program also expressed concern that deployment on a pot catcher vessel is not necessarily adequate to properly prepare an observer for the challenges of deployment as a single LL2 observer on a freezer longline vessels.

Encourage AIS to become a certified observer provider, and supply LL2 Observers to FLC vessels

NMFS approved the request for AIS to become a permitted full coverage observer provider on August 31, 2016. Additional detail about the permit review process and the factors considered in reviewing AIS's permit application were provided in NMFS's August 31, 2016 letter (Balsiger 2016). Further discussion of this option and the impacts are included in the description of the status quo in Section 2.1 and Section 4.1.

3 Background

3.1 Description of the Freezer Longline Fleet

The Council and NMFS annually establish total allowable catch limits (TACs) for Pacific cod in the BSAI and GOA. TAC amounts are annual catch limits based on the scientifically determined acceptable biological catch and ensure the sustainability of the Pacific cod fishery. The TAC amounts are allocated among user groups as part of the annual specifications process. In the BSAI, Pacific cod is apportioned among allocations made to the CDQ Program and non-CDQ participants. Each year, 10.7 percent of the Pacific cod TAC is allocated the CDQ reserve for use by the CDQ Program. Allocations to the CDQ Program are assigned as exclusive catch privileges to specific CDQ groups as defined by section 305(i) of the Magnuson-Stevens Act. The CDQ groups harvest almost all their Pacific cod allocations with vessels that are members of the longline CP subsector.

The non-CDQ TAC is further apportioned between seasons, gear types, and processing modes. The longline CP sector receives 48.7 percent of the non-CDQ allocation as two separate seasonal allowances. An A season allowance of 60 percent of the total allocation is made available on January 1 and a B season allowance of 40 percent is made available on June 20.

NMFS manages the harvest of Pacific cod and halibut PSC limits for the nontrawl fisheries through fishery closures. If NMFS concludes that a nontrawl sector will reach its Pacific cod allocation or halibut PSC allowance (or a seasonal apportionment of an allowance), it will close that nontrawl fishery in the entire BSAI or GOA for the rest of the year (or the rest of the season). For the Freezer Longline Coalition Cooperative (FLCC) participants selecting the scales option, NMFS estimates total Pacific cod catch using scale weights of Pacific cod retained catch and observer data documenting discarded catch or catch that dropped off the line. Observer data are the only source of information used to estimate CPUE, discard of groundfish species, incidental catch and bycatch of other species (including seabirds), and halibut PSC. PSC rates are estimated using observer sample data and rates from sampled hauls are applied to unsampled hauls. Preliminary observer data are sent to NMFS from observers at sea and sometimes subsequently modified during the debriefing and quality control process. Vessels participating in the harvest of CDQ are managed under separate CDQ sector Pacific cod and PSC allocations. Each CDQ group receives a portion of the CDQ sector halibut PSC limit as prohibited species quota (PSQ) and each CDQ group is responsible to manage the use of its halibut PSQ and is prohibited from exceeding its apportionment.

3.1.1 Vessels in the Freezer Longline Sector

This action affects vessels that are named on catcher/processor LLP licenses that are endorsed for Pacific cod for either the Bering Sea or Aleutian Islands, and do not choose to opt out of fishing either for BSAI cod with longline gear, or CDQ groundfish. There are currently 36 LLP licenses that are potentially affected by this action, which are associated with 31 vessels. Of these, 29 vessels have participated in the BSAI longline cod or CDQ groundfish fisheries since 2013, and so have been subject to the choice of monitoring requirements, to carry two observers or flow scales and a single observer.

The vessels in this sector are catcher/processors using longline gear in the BSAI to target Pacific cod and other species. Longline gear is set on the sea floor, with baited hooks, or gangions, attached. Each longline can be several miles in length, and have thousands of hooks. A longline vessel typically sets several lines for varying amounts of time. The lines are retrieved with hydraulic power over a roller, mounted on the side of the vessel. The vessel will typically rotate between hauling and resetting the gear, a cycle that may continue for many sets a day.

Most vessels are equipped with automatic baiting machines that enable them to bait and haul about 30,000 to 40,000 hooks per day. Vessels with an automatic baiter travel about 7 miles per hour when setting gear, which is roughly the speed at which the baiting machine can keep up. The amount of gear set depends on sea conditions and how long the operators want to fish before they pick up the gear. The length of a set varies from 3 miles to 30 miles.

Vessels pick up gear more slowly than when they set it, with the pickup rate governed by how fast they can handle the catch. Observers monitor portions of the gear retrieval, and count everything caught by the gear during those periods. Fish hauled onboard are immediately shaken loose and thrown into a trough. A crewmember known as a “bleeder” bleeds the fish as soon as possible. At the bleeding station, additional sorting takes place, undesirable catch is discarded and large species such as skates are removed for separate processing. Fish are then headed and gutted by hand or by machine. Fish are sorted by size/weight, packed, and frozen. Product is offloaded to cold storage, in port, or onto a tramper at sea.

These vessels are able to produce relatively high-value products that compensate for the relatively low catch volumes associated with longline gear. Most of these vessels are steel-hulled, shelter-decked, and predominantly schooner in style. Below deck, these vessels are set up with heading and gutting machines, plate freezers, and lower level freezer holds for their frozen products. The majority of the freezer longline product is marketed overseas, with price determining where product is sold.

Production capacity is directly related to vessel length and overall vessel design—larger vessels can accommodate larger freezer holds that allow vessels to stay at sea for longer periods. Larger vessels also allow more processing and automated baiting equipment to be installed, which can be optimally located to increase overall daily throughput.

Since 2006, most of the holders of LLP licenses endorsed as Pacific cod hook-and-line catcher/processors in the BSAI have been members of the voluntary FLCC. In June 2010, the remaining LLP holders joined the cooperative. Each year, a Pacific cod allocation is made to the BSAI freezer longline catcher/processor sector through the annual harvest specifications process. FLCC members each receive a share of the quota for harvest; shares are issued in proportion to historical fishing activity associated with each LLP. FLCC members are free to exchange their quota shares among themselves, and to stack quota shares on individual vessels. Compliance with the agreement is monitored by SeaState, Inc., and the contract, signed by the members, imposes heavy financial penalties for non-compliance. Dissolution of the cooperative requires the agreement of an 85 percent supermajority of LLP license holders.

3.1.2 BSAI Pacific cod harvest

3.1.2.1 Pacific cod allocation and harvest

Since 1994, the BSAI Pacific cod ITAC¹² has been allocated among sectors. Since the implementation of Amendment 85 in 2008, the freezer longline sector has been allocated 48.7 percent of the BSAI Pacific cod ITAC (September 4, 2007; 72 FR 50788).

Table 5 shows the sector's allocation and catch from 2013 through 2016, and summarizes information on the number of vessels participating in the Pacific cod target fishery over the years 2013 to 2016, and the proportion of Pacific cod that was retained by the fleet. Twenty-eight or 29 vessels fished Pacific cod in the BSAI freezer longline sector in each year between 2013 and 2016. Retained harvests range from about 108,000 mt to over 113,000 mt during that time period. Since 1998, under fishery regulations for "Increased Retention/Increased Utilization" (IR/IU), no Pacific cod may be discarded. All Pacific cod that is fit for human consumption must, at a minimum, be processed into a primary product, as defined in the regulations.

Table 5 BSAI Pacific cod allocation and catch data for freezer longline vessels

Year	Sector allocation ¹ (mt)	Number of vessels	Pacific cod catch (mt)	% retained
2013	112,671	29	108,412	97.5%
2014	110,016	28	107,723	97.6%
2015	108,071	28	113,622	98.1%
2016	108,983	29	111,804	98.0%

¹At beginning of year, does not include rollovers.

Source: NMFS Catch Accounting data, compiled by AKFIN, January 2017.

3.1.2.2 Pacific cod CDQ harvest by freezer longline vessels

Freezer longline vessels also lease Pacific cod CDQ allocated to the six CDQ groups. In some instances, vessels owned or partially owned by CDQ groups may fish CDQ obtained as part of the joint venture. About half of the vessels in the sector fish Pacific cod for the CDQ groups (Table 5).

¹² ITAC is equal to the total allowable catch (TAC), minus the 10.7 percent community development quota (CDQ) allocation. Note also that a 3 percent deduction from acceptable biological catch (ABC) is made before calculation of the TAC, to accommodate the State of Alaska Aleutian Islands Pacific cod GHL.

Table 6 BSAI CDQ Pacific cod catch data for freezer longline vessels

Year	Sector allocation	Number of vessels	mt	% retained
2013	27,820	13	16,690	98.1%
2014	27,167	15	17,136	98.1%
2015	26,688	15	16,068	98.7%
2016	26,913	12	16,593	97.9%

Source: NMFS Catch Accounting data, compiled by AKFIN, January 2017.

3.1.2.3 Incidental catch in the BSAI Pacific cod freezer longline fishery

Table 7 contains estimates of the incidental catch (i.e., non-target groundfish species that are retained) of species in the freezer longline Pacific cod target fishery. The table only includes estimates of the four most significant incidental catch species in terms of volume. In general, most of the pollock incidental catch is retained, along with 20 to 30 percent of skates. The longline cod fishery also intercepts sculpins and yellowfin sole, which are almost entirely discarded.

Table 7 Incidental catch by BSAI freezer longline vessels targeting Pacific cod (CDQ and non-CDQ)

Year	Skates		Pollock		Sculpin		Yellowfin sole	
	mt	% retained	mt	% retained	mt	% retained	mt	% retained
2013	20,190	28%	5,103	88%	1,129	0%	1,422	0%
2014	21,642	30%	5,970	90%	1,395	0%	1,861	3%
2015	24,168	27%	6,981	91%	1,874	0%	1,821	1%
2016	25,148	20%	6,481	89%	1,565	0%	1,494	0%

Source: NMFS Catch Accounting data, compiled by AKFIN, January 2017.

3.1.2.4 Halibut prohibited species catch in the BSAI Pacific cod freezer longline fishery

The freezer longline fisheries are also subject to PSC limits when targeting groundfish. Halibut PSC limits for the freezer longline Pacific cod fishery are apportioned to the sector as a whole, and through the FLCC, the sector-wide halibut PSC apportionment is distributed individually based on the groundfish catch histories of the member vessels. SeaState uses unprocessed observer data to produce area specific reports and PSC rate assessments. Observer data are made available to vessel owners and operators within two hours after an observer transmits data to NMFS. The goal of the program is to allow the fleet to rapidly respond (both individually and collectively) to high PSC rates so that the catch of prohibited species can be minimized and the industry can more effectively stay within its overall PSC limits.

Table 8 illustrates that halibut PSC mortality in the BSAI by the freezer longline vessels in 2013 through 2016 has consistently remained below their halibut PSC apportionment. Every year from 2008 to 2014, the freezer longline sector appears to have improved its performance in avoiding halibut PSC. A large

change occurred between 2010 and 2011, the year that hook-and-line voluntary cooperative formed and fishing activity was extended throughout the year. This sector shows more annual variation of PSC rates than other sectors, but it is consistently toward one direction, a reduction in rates (NMFS 2016, Appendix B). The 2016 reduction of halibut PSC limits for the BSAI freezer longline sector is unlikely to limit the harvest of Pacific cod on an annual basis.

Table 8 Halibut prohibited species catch by BSAI freezer longline vessels targeting Pacific cod, in mt

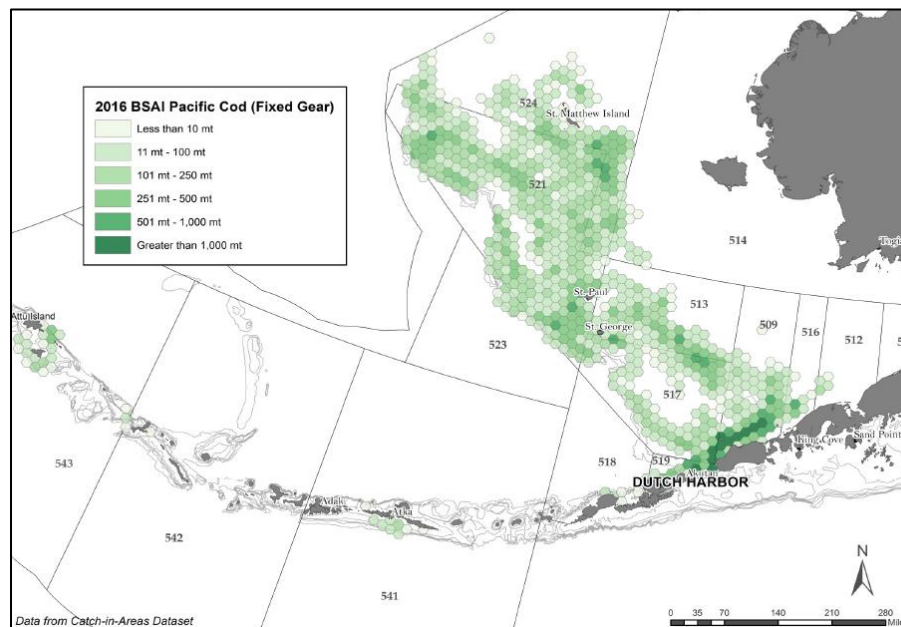
Year	Halibut PSC apportionment	Halibut intercepted	Mortality of intercepted halibut
2013	760	5,724	521
2014	760	4,767	433
2015	710	3,442	313
2016	710	2,412	220

Source: NMFS Catch Accounting data, compiled by AKFIN, January 2017.

3.1.2.5 Spatial and temporal distribution of freezer longline Pacific cod harvests

Most Pacific cod fishing activity in the Bering Sea and Aleutian Islands by freezer longliners occurs along the continental shelf break, in the Bering Sea (Figure 2), and especially along the area of the break to the west and north of the Pribilof Islands. Figure 2 shows other activity taking place along the Aleutian Islands, although Steller sea lion protection measures, which became effective in the 2011 season, limit activity in Area 541 and 542, and eliminate it in Area 543.

Figure 2 Locations of Pacific cod catch by non-trawl gear in the Bering Sea and Aleutian Islands in 2016



The BSAI target fishery is divided into two regulatory seasons, January 1 to June 10, and June 10 to December 31. Prior to establishing the voluntary cooperative in mid-2010, freezer longliners generally

began fishing for Pacific cod on January 1st. Since establishing the voluntary cooperative, the freezer longline vessels fish year-round, with fishing continuing into November and December. Figure 3 provides the average number of vessels prosecuting the fishery by quarter. There is a high concentration of Pacific cod in the first quarter (weeks 1 through 13), increasing the catch per unit effort. Conversely, during the spring and summer months, Pacific cod disperse and begin to aggregate again during the winter months. Figure 4 provides a more in-depth distribution of vessel activity by week for the 33 vessels that were active in 2015. The blue, green, and yellow colors in the main part of the figure represent the primary target of the vessel during that week. The furthest right column summarizes the number of weeks each individual vessel was active in 2015. The bottom row of the matrix shows the number of unique vessels that were active in a given week. For example, the deep red shows when between 27 and 29 vessels were active during a week. The figure illustrates the times of the year when the freezer longline fleet is most active, and potential choke-points in availability of qualified observers.

Figure 3 Average number of freezer longline vessels executing the Pacific cod fishery in all areas per week, 2015

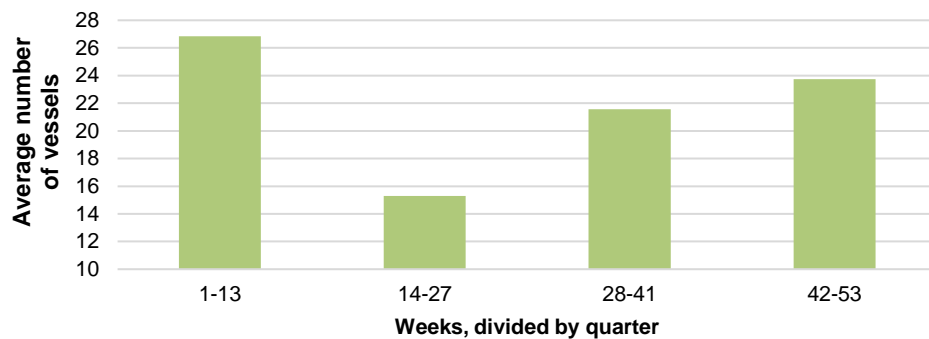
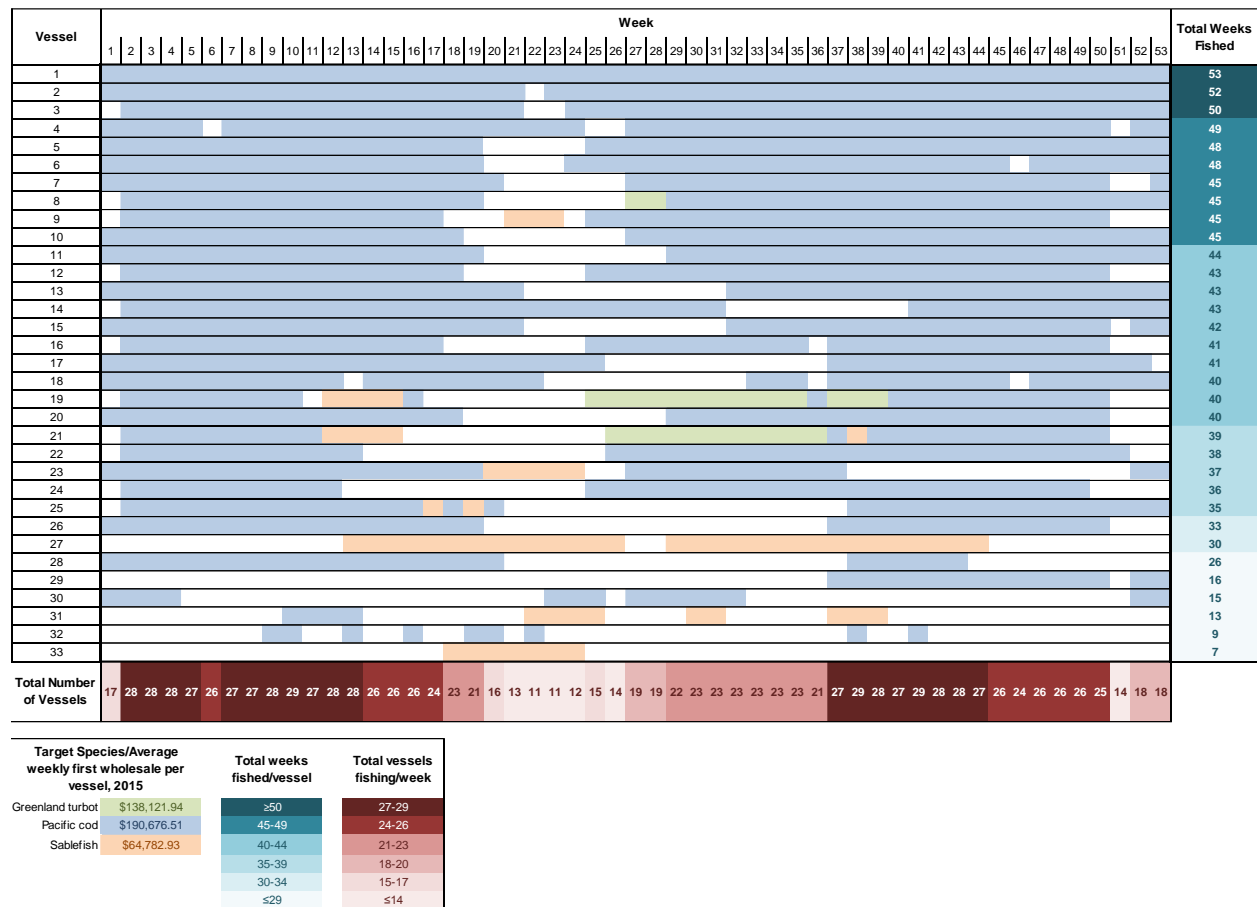


Figure 4 Participation matrix for freezer longline vessels prosecuting BSAI target fisheries for Pacific cod, Greenland turbot, and sablefish fisheries, in 2015



Source: NMFS Catch Accounting System, compiled by AKFIN.

3.1.2.6 Pacific cod products and markets

The freezer longline fleet primarily produces headed and gutted products. The most important Pacific cod products processed by this fleet are frozen eastern and western cut headed-and-gutted (H&G) Pacific cod.

Over these years, both together accounted for greater than 95 percent of total output weight. Other primary products included whole or bled Pacific cod, and ancillary products such as roe, pectoral girdles, heads, cheeks, chins, belly flaps, milt, stomachs, and “other” products.

Pacific cod produced by the freezer longliners is ultimately sold in a wide variety of places (white tablecloth restaurants, fast food restaurants, food service operations in school and hospitals, grocery stores, in the United States or in foreign countries), and in a wide variety of product forms (fillets, sticks, portions, breaded or unbreaded, and salt cod, in addition to the ancillary products).

The BSAI freezer longliner vessels are primarily producing trays of frozen headed and gutted Pacific cod. This product is processed further, once it leaves the catcher/processor. Additional processing may take place in the United States. However, much of the processing takes place overseas. Pacific cod processed in second countries may be exported to third countries for consumption. For example, large Pacific cod produced from the Aleutian Islands may be shipped to Norway for further processing, and then shipped to Brazil for final processing and consumption as salt cod. Pacific cod receiving secondary processing overseas may be re-exported to the United States, for consumption.

3.1.3 Other target fisheries

Vessels that opt into the BSAI freezer longline Pacific cod fishery are required to adhere to monitoring requirements for all of the fisheries in which they participate, in the BSAI or the GOA. The following describes other target fisheries in which these vessels participate.

BSAI target fisheries

In the BSAI, 3 to 5 freezer longline vessels also participate in the target fisheries for Greenland turbot, 1 to 3 vessels participate in the target fishery for sablefish. The vessels have harvested between 500 and 1,000 mt of Greenland turbot annually, from 2013 to 2016. One vessel also uses pot gear to participate in the pot target fishery for Pacific cod. Some vessels in the freezer longline sector may also participate in other, fishery-related activities during the course of the year; for example, tendering or processing salmon during the summer. NMFS does not presently compile data on these activities.

GOA target fisheries

From 2013 to 2016, between four and nine vessels in the BSAI freezer longliner fleet with the requisite LLP endorsement also fished Pacific cod with hook and line gear in the GOA. A sector allocation of Pacific cod TAC was implemented in the GOA in January 2012, which provided a direct allocation to the GOA freezer longline sector. The eligible LLPs subsequently formed a GOA cooperative. The Pacific cod quota available to the sector in the GOA is much smaller than the quota that is available in the BSAI. For example, in 2016, the allocation was 5,417 mt in the Western GOA, and 1,869 mt in the Central GOA, compared to 108,983 mt for the BSAI. BSAI freezer longline vessels have harvested approximately 4,500 mt of Pacific cod in the GOA from 2014 to 2016, and about 1,900 mt in 2013. Between four and six BSAI freezer longline vessels also target sablefish in the GOA, harvesting a low of 267 mt in 2016, and a high of 549 mt in 2013.

3.1.4 Duration of fishing

Since 2011 with the formation of the freezer longline voluntary cooperative, the number of vessels participating in the Pacific cod fishery has decreased from around 40 vessels in 2004 to 29 vessels in 2013 to 2016 (NMFS 2012). With fewer vessels participating in the fishery and the Freezer Longline Coalition (FLC) coordinating and monitoring the harvest of Pacific cod, the fishing season has extended from what was a seasonal fishery to a year-round fishery as shown in Figure 3, above. NMFS has not issued a closure for catcher/processors using hook-and-line gear to target Pacific Cod since the formation of the voluntary cooperative.

3.1.5 Gross revenue

Table 9 provides estimates of average gross revenue, and the number of freezer longliners fishing for Pacific cod in from 2011 through 2015 (the most recent year for which revenue is available). Average gross revenue includes non-CDQ and CDQ, targeted and incidental, and BSAI and GOA Pacific cod first wholesale gross revenues. These gross revenues have been converted to constant 2015 dollars, to factor out the impact of inflation. Average revenue appears to have declined in 2013, but was otherwise fairly steady.

Table 9 Average gross first wholesale revenue per vessel and number of vessels from BSAI and GOA Pacific cod for the BSAI freezer longline fleet

Year	Number of vessels	Average revenue (\$ million)
2011	28	9.0
2012	29	7.9
2013	28	6.3
2014	28	8.0
2015	28	8.7

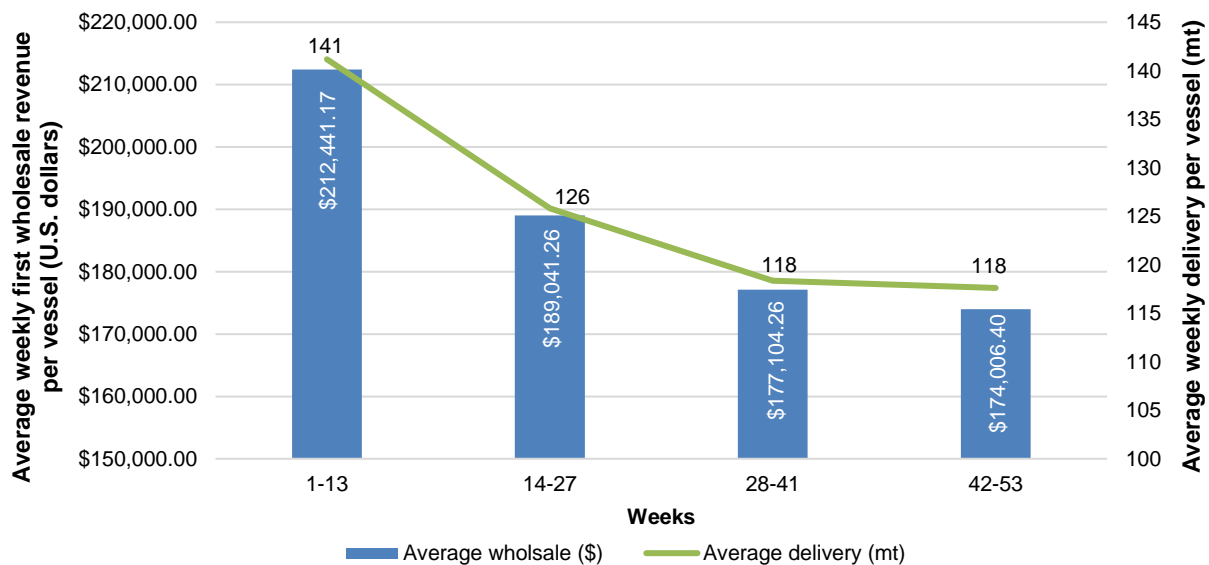
Source: AFSC Gross Revenue Procedure compiled by AKFIN

Figure 4 also lists the average weekly first wholesale revenue from each target fishery, based on an annual average, in the bottom left hand corner. The weekly first wholesale revenue per vessel in 2015 was approximately \$191,000 for Pacific cod, \$138,000 for Greenland turbot, and \$65,000 for sablefish. These values are useful for a broad brush understanding of the gross value of the freezer longline fishery, but do not reflect the seasonal differences in the fishery.

Figure 5 illustrates the average weekly delivery and first wholesale revenue per vessel, per quarter, in all areas during the 2015 calendar year. For example, during weeks 1 through 13 (the first quarter), each of the average 27 vessels per week delivered an average of 141 mt of product with a first wholesale revenue of about \$212,440. Therefore, simple multiplication will show that during each of the first 13 weeks of the 2015 season, the total production of the Pacific cod freezer longline fishery was about 3,807 mt per week, worth more than \$5.7 million per week. This equates to an average of roughly \$0.68/pound.

Similar calculations for each quarter show that each has an average first wholesale value of roughly \$0.68/pound, with the exception of weeks 42 through 53, which was about \$0.67/pound. This suggests that higher and lower prices throughout the year are not the result of fluctuating Pacific cod prices.

Figure 5 Average weekly delivery and first wholesale revenue per vessel for the Pacific cod freezer longline fishery in all areas, 2015



3.2 Observer Coverage Costs

Observer coverage cost is a function of how many days an observer is assigned to a vessel, so the number of vessels and duration of fishing activity influence the observer coverage costs for this fleet. Observer providers invoice vessel companies based on a daily coverage rate for days an observer is assigned to a vessels and additional travel and lodging costs to and from the vessel. Table 10 summarizes the total annual observer coverage costs as submitted by observer providers in monthly invoices submitted to NMFS, for the 29 freezer longline vessels that have participated in the BSAI Pacific cod or groundfish CDQ fisheries 2013-2016 (the vessels with a LL2 observer coverage requirement).

Table 10 also summarizes observer coverage costs for the Amendment 80 and AFA catcher/processor fleet, which allows for a comparison of the overall observer coverage cost across fleets. Looking at the metric of observer cost as a proportion of gross revenue, Table 10 illustrates that of the rationalized catcher/processor fleets, the freezer longline pays the highest proportional observer coverage cost of those compared.

Table 10 Summary of annual observer coverage costs for the freezer longline fleet, the Amendment 80 trawl catcher/processor fleet, and the AFA trawl Catcher/processor fleet. The freezer longline fleet includes vessels that participate in the BSAI Pacific Cod fishery.

	2013	2014	2015
FLCC Fleet			
Total Obs Cost Invoiced	\$2.6M	\$3.1M	\$3.4M
Total Observer days billed	7,250	8,500	9,050
Number of vessels	29	29	29
Avg. Days per vessel	250	293	312
# Observer Provider Firms	4	4	4
Gross revenue (\$Millions)	\$176.1M	\$224.7M	\$244.5M
Observer cost as percent of gross revenue	1.49%	1.39%	1.39%
Estimated Observer cost as percent of gross revenue without voluntary second observer costs	1.49%	1.30%	1.32%
AFA CPs & MS			
Total Obs Cost Invoiced	\$2.2M	\$2.3M	\$2.2M
Total Observer days billed	5,943	6,090	5,805
Number of vessels	17	17	17
Avg. Days per vessel	350	358	341
# Observer Provider firms	3	3	3
Gross revenue (\$Millions)	\$710.9M	\$680.2M	\$683.6M
Observer cost as percent of gross revenue	0.31 %	0.33 %	0.32%
Amendment 80 CPs & MS			
Total Obs Cost Invoiced	\$3.4M	\$3.6M	\$3.6M
Total Observer days billed	9292	9725	9763
Number of vessels	17	17	17
Avg. Days per vessel	547	572	574
# Observer Provider firms	3	3	3
Gross revenue (\$Millions)	\$323.8M	\$358.5M	\$328.5M
Observer cost as percent of gross revenue	1.05%	0.99%	1.11%

Source: Observer coverage Invoice data and AFSC Gross Revenue Procedure compiled by AKFIN

3.3 Observer Deployment & Logistics

Fishing operations in federal waters off of Alaska do not hire their own observers directly. Five observer provider companies are currently permitted by NMFS and actively provide observer services to vessels and processors participating in fisheries of the North Pacific. The five companies are: A.I.S., Inc.; Alaskan Observers, Inc.; Saltwater Observers, Inc.; TechSea International; and MRAG Americas, Inc. (MRAG). Of these, two are based in the Seattle area, one in Anchorage, one in Florida, and one in Marion, Massachusetts¹³.

A principal activity of these companies is to provide observers for the North Pacific Observer Program, and most of them also provide observers for other observer programs within or outside of Alaska, or are involved in other business activities. These observer providers contract with individual fishing operations to supply observers. They also contract with individual observers and deploy them on fishing vessels and at processing plants as necessary to meet the requirements of the fishing operations. Fishing firms cannot request specific individuals and are prohibited from discriminating on a number of other grounds, including gender.

This structure creates two separate markets: (1) one in which the observer provider companies hire individual persons as observers; and (2) one in which the observer provider companies contract with individual fishing firms to supply observers. These two markets are characterized by larger numbers of parties on one side (qualified observers and fishing firms) and smaller numbers of parties on the other (observer provider companies). While the small number of observer providers suggests that there are opportunities for the industry to exercise market power, industry participants indicate that firms compete energetically for fishery operation business. The situation is complicated by the diversity of fishing operations with which observer providers contract: some contracts are made with large companies deploying many vessels, and others are made with individual vessels. Moreover an observer union exists, and for many years observer contracts with several observer providers were covered by union contracts (excerpted from the RIR in NMFS 2012).

There are substantial differences among the observer providers in terms of both the proportion of their income generated by providing observers for the Alaska groundfish fishery and the proportion of the total groundfish observer deployment days they provide. One observer provider is awarded the contract by NMFS to provide observers in the partial observer coverage category. The vessels and processors in the full observer coverage category contract directly with any permitted observer provider to procure observer coverage as required by regulation.

Each observer provider is responsible to hire qualified observer candidates, ensure each observer completes required trainings, provide travel and housing before and after assignments, and assign observers to vessels¹⁴. Managing the specific requirements for each vessel and observer can be complicated and involves significant planning. For example, an observer provider contracted to supply observers for the beginning of the pollock season on January 20 may start planning in October by putting a call out to all their current and former employees to start registering observers for training classes in December and January or start recruiting potential new observers.

Each observer provider manages the many moving parts e.g., balancing training and debriefing schedules with each individual observer as well as ensuring an observer is available for each of the fishing vessels they contract with. A change at any point along the way could influence the ability of each observer provider to deploy observers to a vessels they contract with. A failed training class, unexpected injury,

¹³ Information found on the website for each observer provider, listed as References in Section 7. Accessed on December 13, 2016.

¹⁴ Observer Provider responsibilities are detailed in regulations at 50 CFR 679.52.

lost or delayed luggage or gear, illness, and even volcanic eruptions may delay an observer or make the observer unavailable at the planned location and time.

3.3.1 NMFS's role in Observer Deployment

NMFS devotes significant human capital to supporting the collection and analysis of fishery dependent data by the Observer Program. The Fisheries Monitoring and Analysis Division (FMA) of the Alaska Fisheries Science Center (AFSC) administers the North Pacific Observer Program and provides data collected to the Alaska Regional Office (AKR), which monitors groundfish and halibut fishing activities in the Federal fisheries off Alaska. Other scientists within NMFS use observer data to conduct research associated with sampling commercial fishery catches, estimation of catch and bycatch mortality, and analysis of fishery-dependent data.

FMA is responsible for providing training, briefing, debriefing and inseason advising for observers who collect catch data onboard fishing vessels and at onshore processing plants, and for quality control/quality assurance of the data provided by these observers. Division staff process data and make it available to the Sustainable Fisheries Division of the Alaska Regional Office for quota monitoring and to scientists in other AFSC divisions for stock assessments, ecosystem investigations, and an array of research investigations.

FMA currently has a total of 48 staff located in: Seattle, WA, Anchorage, AK, Kodiak, AK, and Dutch Harbor, AK. FMA staff are responsible for a suite of activities in Seattle, WA and at three field offices located in Alaska, including the following activities:

- Provide fishery dependent data to Agency staff, fishing industry, and the public.
- In-season advising support to observers in the field.
- Observer training and gear provision.
- Observer data debriefing and quality control.
- Field office support for observers while deployed in Anchorage, Kodiak, and Dutch Harbor.
- Data management services for processing and managing observer data.
- Analytical services for monitoring and reporting Observer Program deployment performance

Additional information about these and other activities is available in the 2015 Observer Program Annual Report (NMFS 2016b).

The Sustainable Fisheries Division (SFD) of AKR implements the policy objectives of the North Pacific Fishery Management Council and manages fisheries in the Exclusive Economic Zone off Alaska. SFD coordinates with the State of Alaska on development of fishery management and data collection programs, and the International Pacific Halibut Commission on development of regulations governing the recreational, commercial, and subsistence Pacific halibut fisheries off Alaska. SFD provides guidance to the Council and other management agencies on development, implementation, and monitoring of fishery management measures, and draft National Environmental Policy Act and other analytical documents to support management decisions.

To accomplish these objectives, SFD collects and manages catch data from North Pacific groundfish fisheries, develops and maintains information systems for integrating catch and observer data for estimating species-specific total catch, and to manage fisheries closures. SFD also develops, maintains, and installs electronic shore-side logbooks and software supporting the interagency electronic reporting program, approves catch monitoring plans, certifies at-sea processor scales, and provides current and historic fishery statistics to other government agencies and the public, while maintaining the confidentiality of protected statistics. SFD annually inspects and approves the scales used to weigh catch at sea and maintains the administrative record of each freezer longline vessel's monitoring choice.

3.3.2 Observer Availability

To determine if an observer is available for a specific deployment on a specific vessel in an Alaskan fishery, one would start with the pool of qualified observers and further narrow the list based on a number of factors including each observer's current status with regard to training, endorsements, deployment status or current assignment, debriefing, medical status, personal life choices, as well as each individual's specific employment contract. NMFS tracks observer qualifications including certifications, trainings completed, and endorsements while observer providers are responsible to monitor all the other factors that may limit or affect an observer's availability.

Observer providers offer employment to individual observers for a specific time of year, register individual observers for training and briefing classes, and provide travel and logistics to ensure an observer is available to board a vessel and deploy as requested. NMFS provides training and debriefing services as described in Section 3.3.1 of this analysis. The current deployment system for observers in the full coverage category means that NMFS has no involvement in the decision-making process related to observer hiring, observer deployment and travel and logistics beyond determining if an observer is qualified to deploy.

When an observer is deployed, both the observer provider and NMFS provide support to an observer. The observer provider continues to provide logistical support and NMFS provides technical support to observers that facilitates the collection of scientific data. Figure 6 shows the relationship between the number of qualified observers and the number of available observers for deployment on a vessel as well as some of the factors that influence observer availability and the relative responsibilities of NMFS and observer providers under the current deployment model. NMFS does not track observer availability at a level more specific than tracking the number of qualified observers with a current certification.

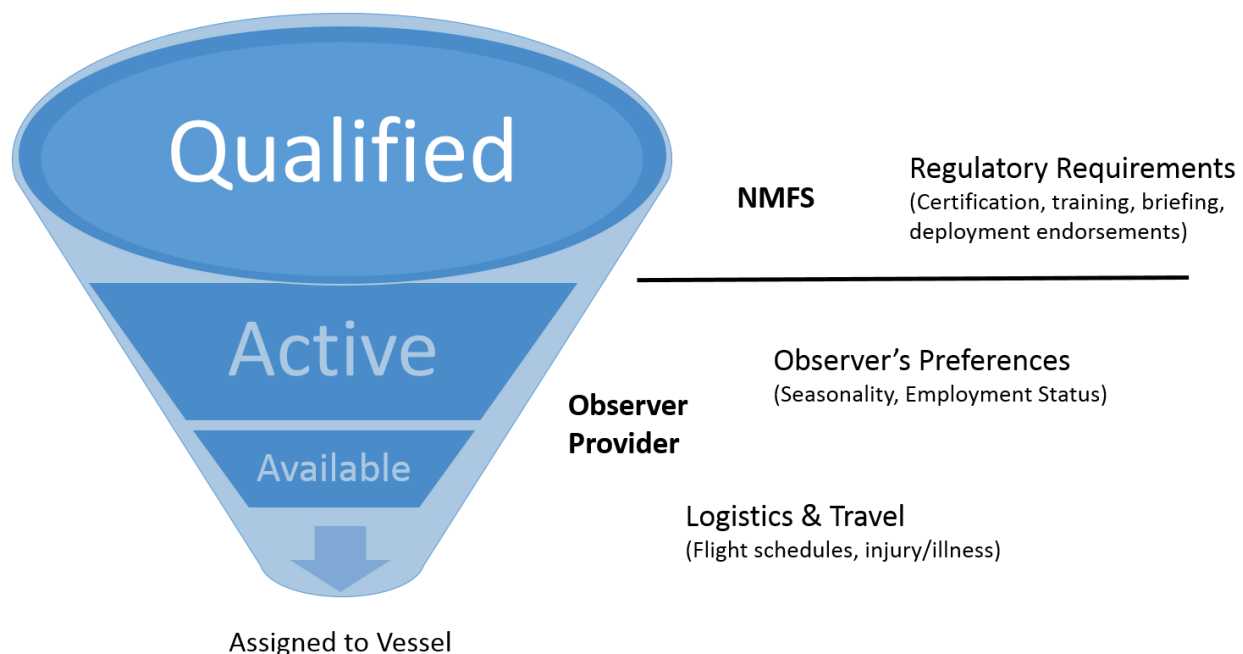


Figure 6 How observer availability is affected by regulatory requirements, observers preferences and logistics and travel in the full coverage fisheries.

New observers are certified after completion of the initial training. Table 11 summarizes the number of qualified observers at each of the various endorsement levels as of the end of each year 2012 through 2016. The specific training and experience requirements for each endorsement are described in Section 1.3. In addition to all qualified observers and indicated endorsements, Table 11 illustrates the annual

growth of total qualified observers in the eligible pool and who received the level 2 or Lead endorsement for the first time in that year on both trawl and non-trawl gear.

Table 11 Total Number of distinct qualified observers and newly qualified observers who attained each endorsement type as of the December 31 of each year 2012 to 2016.

Year	Total Qualified (Eligible pool)				Newly Qualified (Annual Growth)			
	Certified	Level 2	Trawl LL2	Nontrawl LL2	Certified	Level 2	Trawl LL2	Nontrawl LL2
2012	511	275	208	214	168	102	64	60
2013	501	285	224	216	116	101	75	55
2014	500	292	229	202	161	99	73	39
2015	532	321	241	215	144	119	77	60
2016	515	339	254	213	107	110	77	53

Source: NMFS Observer Program Database, February 3, 2017.

Table 12 summarizes the number of observers deployed each year. An observer must be certified to deploy, so the number of certified observers represents the total number of individual observers deployed and the number of observers deployed as a LL2 is broken out by endorsement and gear type.

Table 12 Total number of distinct certified observers deployed and distinct observers deployed as a lead level 2 observer on vessels using trawl gear and on freezer longline vessels 2012 to 2016.

Year	Distinct Observers Deployed		
	Certified Observer	Trawl LL2	Freezer Longline LL2
2012	409	128	129
2013	407	130	108
2014	433	141	113
2015	454	130	109
2016	458	139	105

Source: NMFS Observer Program Database, February 17, 2017.

Table 13 Number of distinct observer deployments in 2015 by vessel operation type and gear used.

Vessel Type	Gear	Number of distinct observer deployments (Permit/cruise)
Catcher/Processor	Trawl ¹⁵	192
	H&L	165
	Pot	26
Catcher Vessel	Trawl	602
	H&L	382
	Pot	141
Total		1509

Source: NMFS Observer Program Database, March 1, 2017.

3.3.3 Factors Limiting Observer Availability

There are a number of factors that may limit an observer's availability. As shown in Table 11 and Table 12 above, there are always more qualified observers than observers deployed in any given year. This is

¹⁵ Includes assignments onboard motherships.

also true for observers eligible to deploy as a trawl or nontrawl LL2 observer. The number of qualified observers represents the maximum number of observers that could potentially be available in a year, and would not necessarily represent the actual number of observers available for any specific deployment.

Eligibility then becomes the first test at the most broad definition of availability to determine if an observer could deploy on a particular vessel at a particular time. Additional factors influence availability at different levels, such as seasonal employment choices down to the specific logistics of which day an observer will fly to a port to board a vessel. For the purpose of this analysis, factors that could limit observer availability are grouped in the following broad categories: eligibility; observer's preference; and travel and logistics. These factors and how they specifically influence observer availability are described in more detail below.

Limited Experience Opportunities

To be qualified to deploy as an observer a person must meet all eligibility criteria that are defined in regulations at 50 CFR 679.53. The Observer Program monitors compliance with these regulations and ensures that any observer deployed to collect data has received the required training, briefing and is eligible to do so. For an observer to deploy as a nontrawl LL2 observer, the observer must meet the additional experience requirements and must have met expectations on their most recent performance evaluation score. The Observer Program determines training and briefing requirements, and through program policy, an observer's certification expires 18 months after an observer's last debriefing appointment. If an observer is not registered for a briefing within the 18 month window, their certification is considered to be expired and they are no longer qualified to deploy as an observer without first completing a certification training.

The number of observers qualified to deploy as a LL2 observer depends on the number of qualified observers who return for future employment and the number of new observers who newly qualify for the endorsement each year. Observers may gain experience toward the nontrawl LL2 endorsement on fixed gear CVs and CPs. Most fixed gear CVs are in the partial observer coverage category. By contract, only one of the observer companies provides observers in the partial coverage category. All five permitted observer providers can provide observer services in the full coverage category. Fixed gear vessels in the full coverage category include freezer longline vessels and CPs using pot gear. Some longline CPs that meet a specific weekly production threshold are eligible to be placed in the partial coverage category.

Most of the freezer longline vessels remaining in the full coverage category participate in the BSAI Pacific cod fishery or groundfish CDQ fishery and are subject to the additional monitoring requirements that require at least one LL2 observer to be onboard. All but one of these freezer longline vessels has selected the scales monitoring option, and are therefore not required to carry a second observer. Outside the partial coverage category, there are few fixed gear vessels in the full coverage category that do not require a nontrawl LL2 observer during some or all of their fishing activity. This has limited the ability for the observer providers that deploy observers solely in the full coverage category to create newly qualified nontrawl LL2 observers.

The Observer's Preference

Observers make employment decisions based on individual preferences. The nature of seasonal deployment allows observers to make employment decisions multiple times a year and many factors may impact an observer's decision to work as an observer at any particular time of year. Observer Providers are responsible to recruit and deploy observers. Regulations at 50 CFR §679.52 require observer providers to provide limited information about observer employment to NMFS. NMFS does not track when or how often observers are offered employment. In addition to seasonal employment decisions, an observer may customize their employment contract with their particular observer provider, or choose which observer provider to work for at any time during the year. NMFS does not have records about how often the contract is renewed, or specifics about how each observer's employment contract may be

customized. For example, observer providers are required to submit information about how much is billed to a vessel for observer services, but the corresponding information about how much the observer is paid is not disclosed to NMFS. This would be proprietary information. Anecdotal information indicates that observers may negotiate higher pay, shorter contract length, or increased flexibility to influence which vessels they deploy on. These preferences could be limiting factors that impact whether an observer is available to deploy on a particular vessel for a particular trip.

In 2016, the Observer Program provided the opportunity for observers to provide their input regarding deployments on freezer longline vessels. Eleven observers responded and their thoughts are summarized in this section. Excerpts from the observer responses that were relevant to the LL2 topic are included in Appendix E. In general, all the observers expressed that deployment on a freezer longline vessel is the most challenging deployment in the North Pacific fisheries. According to one observer, it “epitomizes all of the difficulties working on fishing vessels in Alaska.” The workload is greater, trips are longer, and these deployments are more mentally and physically taxing. However, many also felt it was one of the most rewarding types of deployments, once they were able to establish a solid understanding of working on freezer longline vessels. Many agreed that there is no way an inexperienced observer can be fully prepared for a freezer longline deployment, but a process could be established to increase the chances for success.

Overall, there were five common themes consistently discussed by the observers: the necessary experience to work on a freezer longline vessel, challenging workload and sampling requirements, inadequate pay, physical and mental challenges, and the positive aspect of observing on freezer longline vessels.

Overall, the observers were concerned about maintaining data quality, and that decreasing requirements for a higher experience level would have a negative impact. It was also noted that inexperienced observers do not have experience with flow scales, and this should be a required skill needed to observe on a freezer longline vessel. The majority of observers felt it was imperative to place a new observer with one who was experienced to guide them through sampling protocols and appropriate time management. All perspectives noted that freezer longline vessels have the greatest workload of any of the other observed fisheries. Being able to distribute the workload between two observers was frequently mentioned as the best resolution and would provide 100 percent sampled catch, a constant supply of new lead level 2 observers, and minimize burnout. Many noted that this would create parity with all other CP fisheries in the North Pacific, both of which are required to have flow scales and are required to carry two observers.

Other issues that were noted include a perception of inadequate compensation for these taxing deployments, particularly given the demanding work, and the need to rotate observers frequently to avoid burnout. Lastly, the observer accounts noted that freezer longline vessel deployments are mentally and physically taxing. While the random break table and random sampling table are used, it still results in irregular sleep and eating patterns. Ultimately, it is important to the observers to consider their health and safety as paramount to this analysis and make the “observer experience and fishing industry a better place to work.”

During the fall of 2016, the NMFS National Observer Program (NOP) surveyed past and present fishery observers in order to investigate incentives and disincentives for remaining an observer and to identify their subsequent career choices. The data will be used by the NOP and regional observer programs to better understand the causes and consequences of increasing observer recruitment and retention rates. The

survey results are intended to be used by regional program managers to evaluate current observer provider contract requirements to increase observer retention.¹⁶

Over 200 current and former observers with experience in Alaska's fisheries responded to the NOP retention survey. Preliminary review of these responses shows that on average, observers were least satisfied with assignments aboard fixed gear catcher/processors. Freezer longline vessels receiving the lowest satisfaction score and trawl CPs and CVs receiving the second highest and highest satisfaction scores, respectively (Wang, Pers. Comm. December 7, 2016).

All of these personal choices and preferences influence whether a qualified observer is an "Active" observer as depicted in Figure 6, above. NMFS and observer providers likely account for active observers using different methods. NMFS considers observers that have deployed within the past 18 months to be an active, qualified observer. An observer provider may only consider observers who have deployed in the past 6 months to be active (Hansen, Pers. Comm. Feb 9, 2017).

Travel and Logistics

Observer providers are required by regulation to arrange and provide all necessary travel and accommodations to deploy an observer. Any vessel required to carry an observer during all fishing activity has a strong incentive to coordinate closely with their contracted observer provider. Despite best efforts to coordinate, flight delays, lost sampling gear or luggage, unexpected illness or injury could delay an observer's arrival at the point of embarkation, potentially resulting in the vessel being delayed at the dock to wait for an observer to arrive. This level of observer availability is depicted at the bottom of the funnel in Figure 6 (above), because the last step before an observer is deployed is to get them to the port where they will board the vessel. Travel can be quite unpredictable in remote Alaskan ports, and flexibility about which observer deploys to which vessels allows for last minute deployment changes that help to mitigate the unpredictable impact of travel interruptions or delays on vessel operations (Quinlan, Pers. Comm., March 2, 2017).

Anecdotally, August may be the toughest month for observer providers to ensure adequate observer coverage. A number of converging factors such as overlapping fishing seasons, high vessel activity, and other factors that influence observer availability at all levels could contribute to the high demand for qualified observers. Observer providers deploy observers by navigating the ever changing schedules of vessel's fishing and delivery schedules as well as each individual observer's schedule to ensure an observer arrives at the right place at the right time to board or disembark a vessel.

3.3.4 LL2 Shortages

In August 2014, the Freezer Longline Coalition (FLC) reported five situations that resulted in modification to a vessel's planned fishing operations observer availability since the revised monitoring requirements were implemented in 2012 (See, 2014a). In this letter, the FLC described the details of situations that impacted or were anticipated to impact the fishing plans of several member vessels. The information provided by the FLC is summarized in Table 14 below. Overall, NMFS estimates these situations represent a small proportion, less than 0.8%, of all fishing trips taken by freezer longline vessels from 2013 through August 2014 based on data in Table 16. NMFS has not received data indicating additional delays since the August 2014 letter was provided by FLC. Therefore, the total percentage of documented delays due to LL2 observer availability represents less than 0.4% of all trips taken from 2013 through 2016, see Table 16 for trip data.

¹⁶ Results from the NOP Observer retention survey will be posted on the NOAA office of Science and Technology website at <https://www.st.nmfs.noaa.gov/observer-home/index>.

Table 14 Summary of nontrawl LL2 observer shortages reported by the Freezer Longline Coalition on August 28, 2014.

Vessel	Date / Delay
1/1/2013 – A Blue North Vessel	1/1 (3 days)
8/8/2014 - Clipper Endeavor	8/8 – 8/12 (4 days)
8/20/2014 - Clipper Surprise	8/20 – 8/23 (3 days)
8/26/2014 - Arctic Prowler	8/26 – 8/29 (3 days)
9/5/2014 - Lilli Ann	Anticipated short trip

This information was discussed at the Council in October 2014 and the Council identified the need for a discussion paper to explore long term regulatory solutions to address the potential for a shortage of LL2 observers. The Council also recommended that a work group be convened to include representatives of freezer longline vessels, observer providers and Observer Program staff to discuss non-regulatory solutions to resolve the issue of observer availability in the short term.

A work group meeting was held on November 13, 2014 in Seattle. The discussion and resulting actions to address the potential shortage of LL2 observers in the short term was summarized in public comment by Chad See, FLC Executive Director under agenda item B2 at the December, 2014 meeting of the NPFMC (See 2014b). During the work group meeting, several non-regulatory actions were identified that could be implemented to address LL2 observer availability. These actions are summarized in Table 14 below.

Table 15 Summary of non-regulatory actions proposed at the November 2014 Work Group Meeting to improve LL2 observer availability.

Goals	<ul style="list-style-type: none"> • Build pool of available LL2 observers • Enable full coverage observers to get their LL2 endorsement • Improve work environment and morale for observers on freezer longliners • Increase retention of trained LL2 observers 		
Actions	NMFS	Freezer Longline Cooperative	Observer providers
	<ul style="list-style-type: none"> • Revise process for crediting voluntary second observers with hauls sampled • Revisions to address the heavy workload of a sole observer aboard a freezer longline vessel (revise the random sample tables) <ul style="list-style-type: none"> • Reduce observer debriefing backlog • Track status of LL2 observers 	<ul style="list-style-type: none"> • Pay for voluntary second observers in order to build the pool of available LL2 observers <ul style="list-style-type: none"> • Outreach to FLCC members and vessel captains about observer harassment • Limit fishing trips that start or extend over Christmas Day 	<ul style="list-style-type: none"> • Adjust observer contract lengths • Rotate assignments for LL2-endorsed observers between longline and trawl vessels • Increase pay for LL2-endorsed observers

At the September 2015 Observer Advisory Committee meeting, representatives from agency, industry, and observer providers reported on the successful implementation of non-regulatory measures to address the shortage of fixed-gear LL2 observers that occurred during the summer of 2014 in the Freezer FLCC

fleet¹⁷. Since 2014, there have been no reports of vessel delays that are the result of a shortage of LL2 observers.

Any vessel operation with an observer coverage requirement may be impacted by observer availability. As described earlier in Section 3.3, it is the sole responsibility of the observer provider to employ and provide deployment logistics to observers deployed in the full coverage category. A variety of circumstances may impact the specific time or day that an observer is available to board a vessel, or that a vessel may need an observer. As described in Section 3.3.3, there are a large number of factors that influence observer availability and as such, any vessel with an observer coverage requirement may experience a delay for any number of reasons. Common reasons include flight delays, delayed baggage, unexpected illness or injury, or a family emergency. These situations often occur and many time observer providers have arranged backup plans, or can shift assignments to minimize the impacts on vessel operations. These backup plans may mean shifting observer assignments to deploy an observer that did make it to town in lieu of the observer that didn't make it into town on time. The flexibility to adapt to changing circumstances allows observer providers to absorb the unexpected events with little impact to vessels, but occasionally, there are delays that are unavoidable due to the confluence of unexpected or unforeseen circumstances.

3.3.5 Voluntary Deployment of Second Observers

In times of low LL2 observer availability or a potential shortage, the freezer longline fleet has an incentive to avoid vessel delays by paying to supplement the pool of qualified observers. To do this, some freezer longline vessels began voluntarily deploying second observers to increase the pool of available LL2-endorsed observers after the vessel delays described above. Since 2014, twenty one freezer longline vessels selecting the scales monitoring option have voluntarily carried a second observer on at least one trip. Three observer providers have voluntarily deployed second observers on freezer longline vessels on a total of 41 trips from 2014 through 2016¹⁸. Ten vessels selecting the scales monitoring option have carried a second observer on more than one trip since 2014.

The cost of voluntary deployment of second observers is reflected in the overall total observer coverage cost detailed in Table 10 in Section 3.2 of this analysis. Table 16 summarizes the total number of trips, the number of trips that a voluntary second observer deployed on, the number of vessels that voluntarily carried a second observer on one or more trips, and the estimated total cost of the voluntary deployment of second observers. Observer providers may negotiate a cost sharing plan to distribute the cost of voluntary deployments of second observers across numerous vessels that may benefit from the new LL2 endorsed observers. This allows the cost burden for any one vessel of deployment of a second observer to be minimized. The terms of those agreements are private contractual agreements between observer provider firms and client vessels (Lake, Pers. Comm., February 27, 2017).

¹⁷ http://www.npfmc.org/wp-content/PDFdocuments/conservation_issues/Observer/LL2Update915.pdf

¹⁸ The number of voluntarily deployed second observers do not include second observers that are required to be deployed on freezer longline vessels under existing regulations.

Table 16 Voluntary deployment of second observers on the freezer longline vessels participating in the BSAI directed fishery for Pacific Cod or groundfish CDQ fishing and selecting the scales monitoring option 2013-2016.

	2013	2014	2015	2016
Total Number of trips	352	378	405	358
Number of Observer Assignments (Count unique vessel/cruise)	176	194	221	187
Number of trips with voluntary second observer	0	16	15	10
Number of vessels that voluntarily carried 2 nd observer	0	12	13	6
Estimated cost of voluntary second observers (assumes 30 day trips at \$371/day)	\$0	\$178,080	\$166,950	\$111,300

Source: NMFS Observer Program Database, February 6, 2017.

4 Analysis of Impacts

The evaluation of impacts in this analysis is designed to meet the requirement of E.O. 12866, which dictates that an RIR evaluate the costs and benefits of the alternatives, to include both quantifiable and qualitative considerations. Additionally, the analysis should provide information for decision makers “to maximize net benefits (including potential economic, environment, public health and safety, and other advantages; distributive impacts; and equity), unless a statute requires another regulatory approach.” The costs and benefits of this action with respect to these attributes are described in the sections that follow, comparing the No Action Alternative (Alternative 1) with the action alternatives. The analyst then provides a qualitative assessment of the net benefit to the Nation of each alternative, compared to no action.

The impacts of the alternatives are analyzed using five impact categories; observer health and safety, observer data quality, observer availability, cost to the industry, and administrative costs. Affected entities include individuals using observer data, vessel owners and operators, observer providers, observers, and NMFS. Where possible, the impacts are quantified, otherwise a qualitative discussion has been prepared comparing the relative impacts of the action alternatives.

For the sections of this analysis addressing the impact on vessel owners, the primary focus is on impacts to the freezer longline fleet selecting the scales monitoring option. As noted particularly under Alternative 3, Option 3.2, the single freezer longliner selecting the two observer option and a small number of catcher/processor vessels using pot gear to harvest groundfish CDQ also are required to carry a nontrawl LL2 observer and could be impacted by this action.

4.1 Impacts of Alternative 1, No Action

Under the No Action Alternative, regulations would not be amended to modify the nontrawl LL2 observer requirement for freezer longline vessels and pot catcher/processors participating in the groundfish CDQ fisheries. Also, the experience requirements necessary for an observer to earn a nontrawl LL2 endorsement would not be modified. Observers would continue to earn experience toward a nontrawl LL2 endorsement on CV's and CPs using nontrawl gear when a lead observer is not required. An observer could also gain experience toward a nontrawl LL2 through the voluntary deployment of second observers. Observer providers would continue to be responsible to respond to industry requests for observer coverage and vessel owners and operators would continue to be responsible to appropriately coordinate and plan ahead for vessel operations to ensure compliance with all applicable observer coverage requirements.

The potential for enforcement action in the case of non-compliance with the nontrawl LL2 observer coverage requirement, combined with the potential economic impacts of a delay in fishing activity creates a strong incentive for vessel owners to promote the creation of and retention of nontrawl LL2 endorsed observers. The shortage reported in 2014 and the potential for a future shortage of nontrawl LL2 endorsed observers resulted in the identification of several non-regulatory actions in 2014, detailed in Table 15 in Section 3.3.4, that industry and NMFS could take to improve observer retention and create additional nontrawl LL2 endorsed observers to supplement the pool of qualified observers. These non-regulatory actions included the voluntary deployment of second observers, pay incentives for nontrawl LL2 endorsed observers, and deployment flexibility for nontrawl LL2 endorsed observers.

4.1.1 Observer Health and Safety

The Observer Program identified concerns regarding observer health and safety for observers deployed as a sole nontrawl LL2 observer on freezer longline vessels and recommended three non-regulatory actions in the October 2016 discussion paper designed to reduce the stress and workload and subsequently address data quality concerns resulting from the stressful workload under existing data collection protocols and program expectations. An update on these recommendations is provided in Section 1.8 of this Analysis. The NMFS recommended actions are non-regulatory actions that would be implemented to address the health and safety concerns under any alternative recommended by the Council, including the status quo.

The workload restriction, defined at 679.51(a)(2)(iii), limits the number of consecutive hours an observer on a vessel in the full coverage category may work in one day to 12 hours. For trawl catcher/processors and motherships, two or more observers share the workload by each working a scheduled 12 hour shift. An observer on a freezer longline vessel selecting the scales monitoring option is solely responsible to complete random sampling duties. A result of the random sampling means an observer does not work 12 consecutive hours, and instead, works for less than twelve hours multiple times a day. The typical workload for a single observer on a freezer longline vessel operating 24 hours a day can often result in an observer workload well in excess of 12 hours during any given 24 hour period, resulting in very short periods of sleep, or naps, between long hours on duty.

Freezer longline vessels typically operate 24 hours a day, for the duration of a fishing trip that may be 30 to 45 days long, making sleep deprivation and fatigue a significant safety concern for observers. The NOAA Fisheries Observer Safety Training Standards require each observer deployed to collect data on behalf of NMFS receives specific training about how to identify fatigue and sleep deprivation and recognize the symptoms as well as provide strategies for how to mitigate the impacts of such conditions (NMFS 2007).

A long history of research on sleep deprivation demonstrates that inadequate sleep may result in impaired cognitive function, problem solving, complex thinking ability, concentration, may negatively affect a person's mood as well as limit one's ability to interpret emotional social cues, and could cause safety concerns. Most people need six to eight hours of sleep to work at their peak capacity. (Dzugan 1997)

Research has also documented that there is no substitute for sleep. However, there are strategies that one can use to attempt to mitigate the impacts of sleep deprivation. Naps are most effective when they correspond to the body's natural diurnal low that occurs between 2 and 6 am. Aiming to allow for at least a three-hour nap period allows for at least one deep REM cycle, resulting in the most refreshing sleep. Usually two or three cycles must be complete to feel well rested, but after extended periods of sleep deprivation, it takes more than one good night's sleep to fully recover. (Dzugan 1997)

Fatigue and sleep deprivation are likely to contribute to decreased data quality because less data are collected and increased prevalence of mistakes and errors. Additionally, fatigue or sleep deprivation may increase the likelihood of injury or illness and may limit or contribute to lower quality data than could be achieved by a well-rested and healthy observer. A regular sleep schedule provides the best ability for an

observer to rest and recharge and stay healthy and aware, but this is not possible due to the random sampling schedule. For this reason, it is also not possible for an observer to ensure they have a break for a set duration each day.

The existing workload for nontrawl LL2 observers deployed on freezer longline vessels can negatively impact observer health and safety if the observer does not effectively implement time management and stress management techniques to effectively cope with the stress of a random work and sleep schedule required to sample according to established protocols. More experienced observers tend to possess more highly developed time management skills and be more effective at communicating and applying sample techniques to minimize the impacts of the random work schedule on their health and safety. Less experienced observers may develop these skills over time, but would be at an increased risk of illness or injury caused by decreased cognitive function brought on by sleep deprivation and fatigue over long periods of time. Most experienced LL2 observers have developed an approach that allows the observer to maintain high performance and collect high quality data over long periods of time assigned to freezer longline vessels. The reports from observers included in Appendix E. Observer Input, provide insight into the relative difficulty of successfully collecting data onboard a freezer longline vessel as it compares to other observer assignments.

4.1.2 Data Quality

Requirements for observer coverage, observer experience level, and other monitoring and enforcement requirements such as at-sea catch weighing and electronic reporting are designed to maximize the quality of data used to estimate catch and bycatch from this fleet. Estimates of discarded Pacific cod, halibut PSC, and other bycatch species such as skates and seabirds are derived solely from observer data and accumulate against the freezer longline sector allocations and limits¹⁹. For this reason, it is important that observer data used by NMFS for inseason management be as complete and accurate as possible.

Observer data are evaluated during the debriefing process to ensure the information used for fisheries management was collected using established protocols and is accurate and complete. Data quality may be impacted in a variety of ways including: the amount of data collected (the size of samples, or the number of samples); and the ability of an observer to correctly apply data collection protocols to a variety of fishing conditions. An important data quality issue for the freezer longline fleet this fleet is the likelihood that data used for inseason management, either by NMFS or the FLCC, will change from the time decisions are made to when the data are finalized after the debriefing process. One way in minimizing the potential for data to be modified during the debriefing and data quality checking process is to deploy highly skilled, experienced observers, who have the requisite experience to adapt to changing sampling situations, and successfully apply sampling techniques appropriately. Observer experience level is not the only way to measure aptitude or ability. Each observer has a unique set of skills and handles the pressure of stress differently and it doesn't mean that less experienced observers aren't capable of sampling on freezer longline vessels. However, experience does affect the amount of data collected (the size of samples, or the number of samples) and the ability for that observer to quickly adapt to atypical situations.

Overall, nontrawl LL2 observers collect very high quality data on freezer longline vessels under the existing regulatory structure. However, there are several factors that could impact data quality under the status quo including the effects of long work hours and high stress on observer health and safety and the increased reliance on catcher vessel experience to supply new LL2 endorsed observers. The Observer Program has recommended three actions the Agency should take to address these factors and an update on progress is included in Section 1.8 of this analysis.

¹⁹ For more information see section 3.1.6 of this Analysis.

Conflict Resolution

An observer must work closely with the crew on a freezer longline vessel to accomplish basic sampling goals such as the collection of average weight of fish and bycatch. An observer's ability to facilitate the creation of a cooperative working relationships with crewmembers and resolve potential conflicts can have a significant impact on the amount and quality of data they collect. Confidence in sampling procedures and knowledge of vessel operations are additional factors that influence how an observer might address behavior that may be interfering with or biasing their samples.

Observer harassment and interference has been a topic of conversation relative to the availability of LL2 observers since at least 2014. In October, 2014 the FLC distributed a letter to all member vessels that included a request that all observers be treated with respect and that all applicable vessel responsibilities be followed. This letter came after concerns were raised that the treatment of observers assigned to freezer longline vessels was contributing to observer burnout and contributing to the potential for a shortage of LL2 observers.

Data Deletion

During the debriefing process, Observer Program staff evaluate an observers sampling performance and data collected for completeness and to ensure data are entered accurately. An observer receives an evaluation score of either met, or did not meet expectations. If the Observer Program determines that sampling procedures were not followed, or if the data are determined to be biased, observer data may be deleted. The Observer Program tracks when data are deleted and documents reasons why. This information is used to inform observer training topics for the upcoming year. It is rare for observer data to be deleted, and even rarer for an entire data set to be deleted. (Observer Program, Pers. Comm., March 1, 2017).

Data deletions tracked by the Observer Program may include any combination of haul data, species composition, or length and specimen data involving 5 or more hauls, or more than 50% of an observer's data set. For example, if length data were deleted from 10 hauls during a 60 day observer deployment, it would be recorded and tracked as a deletion.

Observer data deleted during the debriefing process do not typically interfere with NMFS's ability to estimate total catch and bycatch. The amount of data deleted is usually small and from a small number of observer deployments. Nonetheless, one of the key considerations for NMFS when training observers for deployment is to maximize data quality and minimize data deletions. Of all data deletions from 2013 thru 2015, between 65 and 81 percent involved an observer on his or her first or second contract, see Figure 7 below. This demonstrates that experienced observers whom have completed at least two contracts are less likely to have data deleted during the debriefing process.

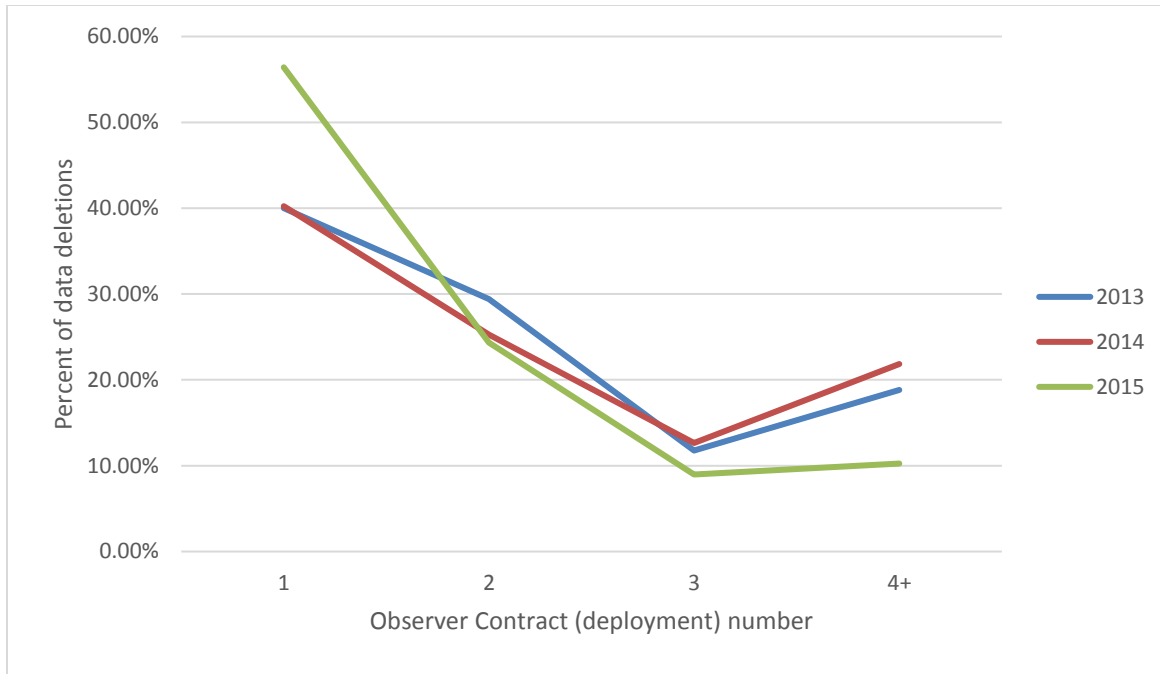


Figure 7 Percent of total annual data deletions by observer contract number 2013 thru 2015. Completion of one contract is equivalent to one deployment. Observer Program Data 2016.

4.1.3 Observer Availability

Annual observer availability, defined as the number of qualified observers, is described in detail in section 3.3.2 of this analysis. Section 3.3.3 describes additional factors that could potentially limit the number of observers that may be deployed seasonally, or to any specific vessels. An important point to note is that observer availability is highly influenced by the rate observers leave the profession, or stop participating in the profession. As noted earlier in this Analysis, an observer provider and NMFS typically define observer availability using different criteria and observer availability may be impacted at different scales by a wide variety of external influences. The number of qualified observers is only one potential measure of observer availability.

In 2011 and 2012 during the preparation of the RIR/EA to modify monitoring and enforcement requirements in the BSAI freezer longline fleet, the Restructured Observer Program had not been implemented yet and the contract to provide observer services in the partial coverage category had not been awarded prior to the publication of the final rule implementing new monitoring and enforcement requirements for the freezer longline fleet. A key assumption in the 2012 analysis was that under the new Observer Program, the market place for observers would not be significantly altered. It was assumed that one of the permitted observer providers could be awarded the contract to provide observers in the partial coverage category and that observers deployed in the partial coverage category would be equally available for deployment in the full coverage category.

The partial coverage contract was awarded to an observer provider that was not previously permitted to deploy observers in the Alaska Region. This created a different observer marketplace than had been anticipated in the Analysis. Prior to 2013, all permitted observer providers were equal competitors in the observer provider market and with the award of the contract to a firm outside the established group of observer providers that had previously operated in Alaska, this changed the market dynamics. Observers employed by the observer provider in the partial coverage category were equally qualified to deploy on freezer longline vessels, but the business relationships were not established to easily facilitate subcontracting to permitted full coverage providers and AIS was not permitted to directly provide

observers in the full coverage category until August 2016. Prior to August 2016, observers employed by AIS could change employers and deploy on freezer longline vessels, but anecdotal information indicates that few observers changed employers to move from the partial coverage category to the full coverage category.

In 2014, the FLC reported shortages of nontrawl LL2 observers, and worked in cooperation with observer providers and NMFS to identify non-regulatory actions each could take to reduce the risk of a shortage in the future. Since then, no shortages have been reported by the industry, likely largely due to the voluntary deployment of second observers to supplement the pool of qualified and active observers (See Section 3.3.4 and Section 3.3.5). In August, 2016, AIS, received approval from NMFS to become a permitted observer provider in the full coverage category. This is one step closer to creating the conditions under which the assumptions in the 2012 analysis may be true. For observers employed by AIS to be deployed on a vessel, there would need to be a contractual relationship developed between vessel companies and AIS. As of the end of February, 2017 AIS has not provided observer services in the full coverage category and has not subcontracted with other observer providers to provide observer services in the full coverage category (Szymanski, Pers. Comm., March 6, 2017).

4.1.4 Vessels

Delays in fishing activity may occur due to the lack of an available observer. These delays negatively impact freezer longline vessels by increasing operational costs. A shortage of LL2 endorsed observers was reported by the FLC in 2014 along with growing concern from observer providers about the potential for shortages in the future. To minimize the potential for delayed fishing activity, freezer longline vessel companies have collaborated with their contracted observer providers to deploy second observers on freezer longline vessels selecting the scales monitoring option to supplement the pool of eligible LL2 observers. The frequency of vessel delays and the cost of voluntary deployment of second observers are discussed in the following sections.

Fishing Delays

The five instances where a freezer longline vessel's fishing plans were altered or delayed are summarized in Table 13 in Section 3.3.4 of this Analysis. These instances all occurred in 2014, and the reported delay associated with the lack of an available LL2 observer ranged from 3 to 4 days, or in one case, an anticipated shortening of the trip. The types of costs incurred by these events are economic in nature include fuel, crew time, food, and missed opportunity to be out fishing. Because of the variable nature of these types of costs, they are discussed in terms of the relative increase in operational costs for a vessel.

The freezer longline cooperative structure provides an opportunity for the total allocation to be apportioned among the member vessels. Therefore a delay for one vessel is unlikely to impact the overall annual harvest of the Pacific cod allocation, or the ability of the impacted vessel to harvest its share of the Pacific cod allocation once the delay has been resolved. Thus, impacts due to delays of fishing effort have been estimated as an increase to operating costs assuming no impact on annual harvest levels. However, it should be noted that feedback from FLLC members indicates that there is a potential for reduction in total harvest of cod if the lack of available LL2 observers were to become acute and widespread.

Voluntary Deployment of Second Observers

Voluntary deployment of second observers began in 2014, after instances of delays resulting from insufficient LL2 observers occurred, and at least a complete year after the implementation of current observer coverage and monitoring requirements. This practice continued in 2015, 2016, and there are plans to continue deploying second observers on freezer longline vessels in 2017 (See, pers. comm. February 22, 2017). The fact that the freezer longliners plan to deploy second observers later in 2017

indicates that the addition of AIS as a new full coverage provider and the nontrawl LL2 observers it employs is not addressing all aspects of the LL2 observer availability issue for the freezer longliners.

The actual cost of voluntary deployment of second observers is not available in the invoice data submitted to NMFS by the observer providers. However, it is possible to estimate the cost based on the number of trips where a voluntary second observer was deployed, a 30 day trip duration (Table 11) and an average cost of \$371/day. Using these calculations, the freezer longline fleet has spent an estimated \$111,000 to \$180,000 a year for the last three years, or \$456,330 in total, on voluntary observer coverage to avert the risk of a LL2 observer shortage (Section 3.3.5). This estimate is likely an overestimate due to the lower daily base rate charged for observers without the LL2 endorsement.

All vessels with a nontrawl LL2 observer requirement benefit from new observers gaining the nontrawl LL2 endorsement. Not all vessels and full coverage providers have participated in the voluntary deployment of second observers in this fleet. The agreements to deploy second observers are negotiated between observe providers and their client vessels. Some cost sharing occurs among vessel companies contracting with an individual observer provider. The vessel that carries a second observer bears the burden of an additional person onboard the vessel for the duration of the trip including food and bunk space and pays a portion of the daily observer rate depending on the number of vessels splitting the cost (Lake, pers. Comm., February 27, 2017). Some freezer longline vessels are smaller than others and may have fewer bunks available which would increase the burden for smaller vessels to carry a second observer depending on vessel size and bunk space (See, Pers. Comm., February 24, 2017).

If deployment incentives are offered to an observer to deploy as a nontrawl LL2, this would increase operating costs for observer providers and because of the direct contract agreements with vessel companies, it is likely that these additional costs are passed on to vessel companies. Incentives previously identified by observer providers include increased pay for LL2 assignments, increased flexibility for observer's assignment preferences, and shorter contract durations, see Table 14 in Section 3.3.4.

4.1.5 Observer Providers

Under the existing regulatory framework, there are limited observer assignments that allow an observer to gain experience necessary to obtain a nontrawl LL2 endorsement. Observers may be assigned on fixed gear CPs that do not participate in the freezer longline subsector harvest of Pacific cod or groundfish CDQ or fixed gear CVs. Most all fixed gear CVs and some fixed gear CPs are in the partial coverage category, making these assignments accessible only for observers employed by the observer contractor awarded the NMFS partial coverage contract. There are few fixed gear CPs in the full coverage category that do not participate in the harvest of BSAI Pacific cod using longline gear or the harvest of groundfish CDQ.

The approval of AIS as a full coverage observer provider introduces new competition into the observer provider marketplace for the full coverage category. Under the status quo, AIS has an advantage over the other full coverage observer providers because of their exclusive access to deploy observers on fixed gear vessels in the partial coverage category and therefore maintain an ample pool of nontrawl LL2 observers employed by them. Other observer providers could compete for those observers by offering employment incentives such as higher pay and improved benefit packages. Since 2013, anecdotal information indicates that there have been few observers switch employers between the full coverage and partial coverage categories. The employment model for the observer providers in the full coverage category is significantly different than that of AIS in the partial coverage category.

Until AIS was approved as a full coverage observer provider, the marketplace for nontrawl LL2 observers was limited to observers who could be supplied by the four permitted observer providers. This meant that the pool of nontrawl LL2 observers was limited to those observers employed by the four observer providers, or who could gain the nontrawl LL2 endorsement on assignments in the full coverage category,

or observers that could be subcontracted from AIS. As of the end of March 6, 2017, observers employed by AIS have not been deployed on freezer longline vessels (Szymanski, Pers. Comm. March 6, 2017).

The four observer providers that exclusively contract with vessels in the full coverage category routinely subcontract as necessary to deploy observers on vessels so that vessel operations are not impacted. Subcontracting with other observer providers to deploy observers employed by a different observer provider increases costs to the observer provider because they are paying a third party fee. Unexpected situations occur including an observer that becomes ill, injured or is unexpectedly delayed or removed from the field. These unexpected situations increase the need to subcontract among observer providers to ensure vessels are covered.

The deployment incentives identified in Section 3.3.4, including increased pay for LL2 observers and shorter or more flexible observer deployments contribute to increased costs for observer providers deploying observers on freezer longline vessels. Some increases in operating costs to observer providers may be passed on to a vessel they contract with through increases to the daily rate charged for observer coverage. Observer providers compete for contracts with vessel companies and therefore are limited by their ability to be competitive in the observer provider market on how much they can raise rates each year without losing their contracts with vessel companies to a lower priced competitor.

Another cost to observer providers is the wage rates paid to observers. The typical pay structure for observers in the full coverage category has been to pay observers a daily wage dependent on the amount of experience the observer has. Experienced observers typically earn a higher daily wage than less experienced observers. Currently, most observers deployed on freezer longline vessels are highly experienced and many are at the top pay scale, increasing the operating costs for observer providers to deploy observers in this fleet (Quinlan, Pers. Comm., March 2, 2017).

4.1.6 NMFS

The current administrative burden for NMFS consists of the annual scale inspection process for each vessel operating under one of the two monitoring options required for participation in the BSAI Pacific cod fishery or groundfish CDQ. Additional administrative costs of observer training, debriefing and inseason advising are described in Section 3.3.1 of this analysis.

NMFS does not recover the costs of management, data collection, and enforcement from the FLCC. NMFS considered implementing a cost recovery fee for this cooperative in 2015 (80 FR 936, January 7, 2015). Initial analysis indicated that the FLCC exclusively harvested the allocation assigned to the hook-and-line catcher/processor sector (79 FR 12108, March 4, 2014). However, vessels that are not part of the FLCC harvest a portion of the allocation assigned to hook-and-line catcher/processor sector. A limited number of vessels harvest Pacific cod as hook-and-line catcher/processors within State waters and are not required to use an FFP or License Limitation Program license. These State water harvests are deducted from the proportion of the BSAI Pacific cod TAC assigned to the hook-and-line catcher/processor sector. The harvest by these vessels is deducted from the Federal TAC and is not subject to limitation by NMFS. Therefore, the FLCC does not have an exclusive harvest privilege for a proportion of the TAC assigned to hook-and-line catcher/processor sector, and the FLCC is not considered a limited access privilege program for purposes cost recovery.

NMFS is authorized to recover the costs of management, data collection, and enforcement for the CDQ fisheries.

4.2 Impacts of Alternative 2 – LL2 Exception

Under Alternative 2, a relief mechanism would be created to lessen the economic impacts of a shortage of nontrawl LL2 observers on the freezer longline fleet. A regulatory exception would allow a freezer

longline vessel to carry a substitute observer if a nontrawl LL2 observer is not available. There are three options being considered relative to the necessary experience level of the substitute observer:

- Option 2.1: The substitute observer must have a LL2 endorsement for a catcher/processor using trawl gear.
- Option 2.2: The substitute observer must have at least a Level 2 endorsement.
- Option 2.3: The substitute observer must be a certified observer.

Under this alternative, there would be no modifications to the experience requirement necessary for an observer to earn a nontrawl LL2 endorsement and there would be no modifications to the observer coverage requirements for freezer longline vessels. This alternative would indirectly increase the availability of LL2 observers because the substitute observer deployed in lieu of a LL2 observer would gain experience toward a nontrawl LL2 endorsement.

Observer providers would continue to be responsible for responding to industry requests for observer coverage, and vessel owners and operators would continue to be responsible for appropriately coordinating and planning ahead for vessel operations to ensure compliance with all applicable observer coverage requirements.

Historically, NMFS has received requests for exemptions from vessel owners who are unable to obtain the required observer coverage by the time they intended to embark on a fishing trip. No matter the specific circumstances, there has not been a mechanism for such a request to be granted. The proposed exception under this alternative would be the first process to allow NMFS to grant an exception to an observer coverage requirement in the full observer coverage category since the Observer Program was implemented.

This alternative would have an impact on the responsibilities for observer providers and vessels to comply with the nontrawl LL2 requirement by removing the economic consequences of non-compliance. Observer providers have a significant influence over the availability of observers for deployment on vessels. Providing observers is their primary function and by implementing a policy to allow a vessel to carry a different observer, other than an observer with the required experience and endorsements would reduce the observer provider's responsibility to provide observers as required and increase NMFS's role in observer deployment in the full coverage category. This exception, though limited to the freezer longline fleet, would modify the observer deployment model in the full coverage category.

The market dynamics under the current regulatory requirements resulted in a shortage of LL2 observers in 2014, a year and a half after the new monitoring requirements were implemented. After these situations, the market, comprised of the vessels companies and observer providers responded by voluntarily deploying second observers to supplement the pool of qualified and active LL2 observers, thus increasing the pool of nontrawl LL2 observers. The voluntary deployment of second observers increased costs to the industry and was thus implemented as a short term solution while observer providers and vessel representatives petitioned the Council and NMFS to address these costs and find a solution to observer coverage for this fleet. The creation of an exception to the LL2 observer requirement reduces the cost of observer coverage by reducing the negative impacts of a shortage of nontrawl LL2 observers, but does not address the circumstances that result in a shortage of nontrawl LL2 observers.

In 2014, five vessels experienced a shortage, and 16 voluntary second observers were deployed. The mechanism to reduce the risk of a shortage and supplement the pool of qualified observers (voluntary deployment of second observers under the status quo) would be replaced by the deployment of less experienced observers through the exception process. For the purpose of this analysis, it is assumed that the extent of the need to request exceptions to the nontrawl LL2 requirement would be on par with the number of voluntary second observer trips that have occurred annually in 2014 through 2016, as described in Section 3.3.5. This projection is based on the assumption that the observer providers only

recommend voluntarily deploying a second observer if they believe that an additional nontrawl LL2 observer is needed to meet the demand on a future fishing trip. Additional factors such as observer attrition rates and individual observer's preferences could influence how frequently an exception would be requested in future years.

4.2.1 Implementation Considerations

Some of the impacts of Alternative 2 would depend on exactly how this alternative would be implemented by NMFS. There are several implementation aspects, each with a range of possible approaches, that NMFS would need to determine under this alternative. The options identified by the Council describe the possible experience levels of substitute observers that might be deployed if a nontrawl LL2 observer is not available and NMFS approves an exception. The implementation aspects detailed below describe specific Agency decision points about the administrative process that NMFS would use to verify that a nontrawl LL2 observer availability and determine if an exception is approved or denied.

What specific conditions for observer availability would be required to be met for NMFS to approve an exception to the nontrawl LL2 requirement?

NMFS would consider the following decision points about information that would be needed to determine whether to grant an exception to the nontrawl LL2 requirement: how far in advance a vessel would need to request a nontrawl LL2 observer; how many observer provider companies a vessel would need to contact; could a vessel request an exception at any point in the year; and potentially, additional requirements for observer providers to submit information to NMFS with respect to recruitment and availability of qualified nontrawl LL2 observers.

NMFS envisions that a vessel owner would be required to attempt to obtain a nontrawl LL2 observer with the appropriate amount of advance notice to observer providers. For example, the regulations could require that a vessel owner had notified each of the observer providers of the need for a nontrawl LL2 observer at least 30 days before the beginning of the fishing trip. The specific number of days of advanced notice could be defined in regulation as part of the NMFS determination process, but would not be less than 30 days, and may be more. 30 days advance notice is the standard formerly used by NMFS Enforcement when investigating 30% coverage violations to determine if there were mitigating circumstances such as a shortage of observers (Lagerwey, Pers. Comm. December 30, 2016).

Another question for the agency to resolve in regulation would be how many observer providers the vessel owner would be required to contact. For example, vessel owners could be required to show proof that they had contacted all permitted observer providers to attempt to obtain a nontrawl LL2 observer.

Implementation of this aspect of Alternative 2 would likely require additional information to be submitted by observer providers about observer availability. This information could be required as a weekly update, or on request if a vessel has submitted a request for an exception. This alternative would require NMFS be more involved in the specifics of observer hiring, and logistics of observer deployment in the full coverage category than NMFS is currently involved in the full coverage deployment model. This would impose new and additional requirements on observer providers and NMFS. In addition, NMFS would not consider the cost of the nontrawl LL2 observers that were available to be deployed in making a determination about observer availability.

What process would NMFS use to verify that the conditions had been met?

There are several different ways that this process could be implemented: through independent verification of data submitted to NMFS, through an affidavit approach where the vessel owner certifies the truth of submitted data, or through some combination of the two. NMFS would describe the information verification method in regulations at 679.51. The vessel owner would then be required to submit the specified information to NMFS and NMFS would verify the information through the administrative

process, also described in regulation. The level of impact on the vessel owner, and NMFS would depend on the amount of information to be verified and the time it would take to issue a decision to approve or deny a vessel owner's request for an exception. At the October 2016 meeting, the Council discussed the use of an affidavit as a method to allow the vessel owner to certify the information and reduce the time needed by NMFS to verify that all appropriate effort had been expended to procure a qualified observer.

Full verification would require that NMFS request information from observer providers to verify all statements submitted to NMFS by the vessel owner to verify all steps taken to procure observer services before approving an exception to the LL2 requirement. This could cause delays if the information requested by NMFS were not readily available, or if reviewing the information were time consuming.

Under this approach, NMFS would verify the information provided by a vessel owner under for accuracy before making a determination to approve or deny an exception to the nontrawl LL2 requirement. NMFS could do this by contacting one or each of the five permitted observer providers to verify the information provided by the vessel owner. Using this process, NMFS would verify a vessel owner's attempt to procure a LL2 observer by contacting each observer provider and asking the following questions:

- i. Did the owner of [insert vessel name] request a nontrawl LL2 observer from you for a fishing trip to begin on [insert date] for [insert duration], leaving from [insert port]?
- ii. What date were you first contacted by the vessel owner to provide a nontrawl LL2 observer for this trip?
- iii. Do you have a nontrawl LL2 observer that can be available to embark on this trip?

An alternative verification approach would be if vessels were required to certify by signature that all regulatory conditions have been met. NMFS would not independently verify that these conditions had been met prior to making a determination to approve or deny an exception. Any false statements of mis-information could be investigated by NMFS Enforcement with enforcement actions as necessary.

The regulations would specify that applicants (vessel owner) would have to sign a statement under penalty of perjury that certain conditions or requirements had been met. An example of the use of an affidavit or certification to document compliance with a requirement is in the observer provider permitting regulations at § 679.52 where applicants for observer provider permits are required to submit a "statement signed under penalty of perjury ... that they have no conflict of interest as described in paragraph (c) of this section."

Lastly, there could be a combination of affidavit or certification for some elements and independent verification by NMFS for others. Under this approach, the complexity for NMFS to verify or not verify information provided by a vessel owner would have implications for how long the administrative approval process would take for NMFS to review and make a determination in the event an exception is requested. This approach also has compliance implications, and also has implications for the ease which an exception could be obtained and therefore could impact how frequently exceptions are requested.

When, relative to the trip start date, would NMFS issue a determination to approve or deny an exception?

Use of the term "Stand down" in the Council's motion indicates that the impact of not having a LL2 observer means that an observer is not available on the date that a vessel intended to leave port to harvest fish and an undefined amount of fishing time could be lost. Any vessel with an observer coverage requirement could experience a short delay of several hours up to a few days because of unexpected logistical delays. NMFS does not interpret this type of unexpected short duration delay as a stand down if a LL2 observer is available and it is a matter of getting the appropriate logistics lined up to get the observer on the vessel. It is for this reason that this timing element is necessary to discern the difference between a short delay due to logistical difficulties, which are common in remote fishing ports, and an indefinite delay due to the lack of a nontrawl LL2 observer.

There are several ways that NMFS could approach implementation. For example, a determination could be made within a specific time frame after a request is submitted to NMFS; or a determination could be made on or before the anticipated trip start date; or a determination could be made within a certain number of days of the trip start date, delay not to exceed a number of days.

4.2.2 Observer Health and Safety

Under this alternative, the deployment of a less experienced observer as a substitute for a nontrawl LL2 endorsed observer would increase health and safety concerns for observers deployed on freezer longline vessels. Less experienced observers are likely to struggle more with time management and the stress of the very demanding workload as a sole observer on a freezer longline vessel. Option 2.1, deployment of a trawl LL2 endorsed observer, the highest experience level identified in the options under this alternative would minimize the potential impacts to observer health and safety due to the similar levels of experience necessary for observers to gain the trawl LL2 endorsement as the nontrawl LL2 endorsement.

An observer with no experience at sea, such as a certified observer who has just completed training class, is at a higher risk to be incapacitated by seasickness or susceptible to injury or illness. The typically long trip duration for a freezer longline vessel increases the health and safety risk for first time observers deployed as a single observer.

4.2.3 Data Quality

Under this alternative, most freezer longline trips would likely continue to be monitored by an LL2 observer. The deployment of less experienced observers on the rare occasion when an exception would be approved could impact data quality. These impacts to data quality would depend on how frequently this exception would be utilized in the future combined with the experience level of the substitute observer. The higher the experience level for substitute observers the lower the potential impact to data quality. Three options, option 2.1, 2.2 and 2.3 have been identified as the different experience options recommended by the Council.

Under option 2.2, a level 2 (L2) observer could be deployed on a freezer longline vessel. An observer could potentially gain the L2 endorsement during their first contract, allowing them to deploy on a freezer longline vessel under this exception as soon as their second contract. An observer with the L2 endorsement could also have substantially more experience, but just not the specific experience that would qualify them to be a LL2 observer. Observers with substantially more experience are less likely to be active, due to the high attrition rates associated with prior observers.

Under option 2.3, a certified observer could be allowed to deploy on a freezer longline vessel as the sole observer under the exception. A certified observer is any observer who has completed the required initial training program, there is no minimum experience required to be a certified observer. This would allow the deployment of a brand new observer straight out of training class. Observers on their first contract are much more likely to have data deleted, and due to the long trip duration, would not have an opportunity to check in with field staff to review data collection protocols until the completion of their first trip, presumable after the collection of approximately 30 to 45 days of catch data.

As described in section 4.2.1.2, observer data deletions occur more frequently during an observer's first or second contract. The likelihood that less data would be collected, or that data would be deleted, negatively impacting data quality and therefore the precision of catch estimates for that vessel, would increase with the deployment of less experienced observers under options 2.2 and 2.3 under this exception.

The experience level of the deployed observer would most likely impact vessel operations at sea. Observers who are familiar with CP vessel operations, such as a trawl LL2 observer under option 2.1 would be more likely adapt to vessel operations faster, complete sampling duties in a safe manner on a

freezer longline vessel than observers without this experience which a certified observer or level 2 observer is not guaranteed to have under option 2.2 and option 2.3.

The health and safety concerns with deploying less experienced observers such as severe seasickness and potential for fatigue and sleep deprivation identified in the previous section (4.2.2) could reduce the amount of data collected, and subsequently, negatively impact data quality.

NMFS does not recommend further consideration of option 2.2 or option 2.3 under Alternative 2 because of the concerns identified for observer health and safety and data quality for observers during their first or second contract. These two experience levels would not adequately prepare an observer to be successful as the sole observer aboard a freezer longline vessel.

4.2.4 Observer availability

Alternative 2 would, under specific circumstances, expand the pool of observers that could be deployed as a substitute observer on a freezer longline vessel in lieu of a nontrawl LL2 observer. This alternative would not directly increase the number of observers that qualify for the LL2 endorsement. This alternative establishes a mechanism to relieve the economic burden of a shortage of qualified LL2 endorsed observers. Through the creation of the exception, an alternate pathway would be created to allow new, less experienced, observers to gain experience toward the nontrawl LL2 endorsement.

Assuming a vessel would be approved for an exception, Table 11 summarizes the maximum number of observers that could potentially be available to deploy as a substitute observer under the three experience options. All would increase the potentially available pool of observers for deployment on a freezer longline vessel.

Less experienced observers deployed under the exception may be less likely to meet expectations during the debriefing process, invalidating any LL2 endorsement they may have held until the observer receives a score of met expectations during the debriefing process. This would mean the observer is not available to deploy as a LL2 observer for at least one contract.

Depending on the experience level of the observer deployed in lieu of a nontrawl LL2 endorsed observer, the likelihood of failing to meet expectations, or becoming overwhelmed by the stress of the work increases. This type of failure may impact an observer's choice to return for a subsequent deployment. Early failures in the career of an observer could increase the turnover of new observers and increase the potential for a shortage of LL2 observers in the future.

All of the experience options would create flexibility by increasing the number of eligible observers that could be deployed on a vessel trip that has been approved for an exception by NMFS. In 2016, there were 532 certified observers, 329 L2 observers, and 254 trawl LL2 observers.

4.2.5 Vessels

Under this alternative, the voluntary deployment of second observers would cease, saving the freezer longline fleet an estimated \$111-180 thousand dollars per year, based on the current estimated cost of voluntary second observers. Assuming that a vessel met the conditions and were granted an exception to the LL2 requirement, the risk of vessel delays would be reduced. The creation of an administrative request process would create additional costs for individual vessels to submit required information to NMFS.

The three observer experience options proposed under this alternative would have little economic impact on individual vessels as this would have little impact on the base daily rate charged by observer providers to supply coverage. The options primarily impact the logistics necessary to get an observer embarked on a vessel and would then be a factor in the duration of any resulting delay. The wider the pool of observers that could deploy, the more flexibility observer providers would have in deploying observers, likely to

result in shorter delays. Under this alternative, the cost of a shortage of LL2 observers for an individual vessel owner would be most directly related to the burden of the administrative request process as discussed above in section 4.2.1.

4.2.6 Observer Providers

Under Alternative 2, observer providers would benefit from increased deployment flexibility related to the increase in observer availability. This would reduce the pressure to ensure a nontrawl LL2 observer is always available for deployment on freezer longline vessels.

As part of the administrative process to verify information submitted by vessel owners when a request for an exception is submitted, NMFS could require one or all permitted observer providers to submit information regarding nontrawl LL2 observer availability. This information collection could be requested by NMFS on a case by case basis, or as an ongoing and regular data submission to NMFS to enable NMFS to quickly make a determination when an exception is requested. This could be a substantial burden on observer providers if NMFS determines that observer providers must submit periodic reports of nontrawl LL2 observer availability. At a minimum, observer providers would be required to submit information necessary for the Agency to approve or deny a request for an exception on a case by case basis as requests are submitted.

The flexibility to assign a less experienced observer when an exception is granted would potentially reduce the payroll cost for observer providers that pay a premium rate to nontrawl LL2 endorsed observers.

4.2.7 NMFS

Implementation of Alternative 2 would require significant staff time to develop the regulatory language to establish the administrative process, and then to support the administrative process in the future. NMFS would be required to evaluate each request and validate some portion of information and make a determination within an established timeframe. This could potentially require reallocation of staff time from other regulatory projects to provide continuing support to the LL2 exception request process. The impact of this process on NMFS staff time and resources would depend on how frequently exceptions would be requested. Under all scenarios, the implementation of an ongoing administrative process would increase demand on NMFS staff time and resources.

A cost recovery fee program is not currently implemented for the freezer longline voluntary cooperative. Any administrative costs for the ongoing administration of an exception request and approval process would not be recoverable under cost recovery.

In addition to the administrative burden of reviewing requests for exceptions and issuing Agency determinations, the deployment of less experienced observers could increase the demand additional Observer Program staff time needed to provide inseason advising, debriefing services, and trainings if observer attrition increases.

4.3 Impacts of Alternative 3 – Observer Options.

Alternative 3 includes two options for adding to or revising the observer coverage requirements for BSAI freezer longline vessels.

4.3.1 Option 3.1 – Two observers

Option 3.1 would allow deployment of two observers instead of one LL2 observer with two suboptions for the experience level of the two observers; both level 2 observers, or one level 2 and one certified observer. For the purpose of this analysis, it is assumed that the extent of the need to utilize the two

observer option in lieu of one nontrawl LL2 observer would be on par with the number of voluntary second observer trips that have occurred annually in 2014 through 2016, as described in Section 3.3.5. This projection is based on the assumption that the observer providers only recommend voluntarily deploying a second observer if they believe that an additional nontrawl LL2 observer is needed to meet the demand on a future fishing trip. Additional factors such as observer attrition rates and individual observer preferences could influence how frequently an exception would be requested in future years.

4.3.1.1 Implementation Considerations

Implementation of this option would require a regulatory change to modify regulations at 50 CFR 679.51 to add the additional option for vessels selecting the scales monitoring option to carry two observers or one LL2 observer. There would be no ongoing administrative process associated with the selection of either observer coverage option. No increase would be expected in the staff time necessary to monitor compliance with observer coverage requirements under this option.

4.3.1.2 Observer Health and Safety

Under this alternative, the deployment of two less experienced observers as a substitute for one nontrawl LL2 endorsed observer would balance the health and safety concerns of deploying less experienced observers as identified under Alternative 2 in Section 4.2.2 with the benefit of the two observers each sharing the burdensome workload and allowing both observers to work a single 12 hour shift, alleviating the stress of working and sleeping on a random sleep schedule.

Deployment of two Level 2 observers under Suboption 3.1.1 would minimize concerns about observer health and safety. An observer with no experience at sea, such as a certified observer who has just completed training class, is at a higher risk to be incapacitated by seasickness or susceptible to injury or illness, potentially placing the entire work burden on other observer and increasing the stress and workload.

4.3.1.3 Data Quality

Option 3.1 would allow deployment of two observers in lieu of one nontrawl LL2 endorsed observer. The two suboptions for the experience level of the two observers deployed would either require both observers have some experience (Suboption 3.1.1 – both level 2) or one level 2 observer and a certified observer (Suboption 3.1.2). The deployment of two observers would allow the observers to share the workload and reduce the potential for sleep deprivation, and fatigue. This option would provide the opportunity for two observers to operate as a team, to support and advise each other about their data collection duties, and to provide each observer a more regular and manageable work schedule. Additionally, with two observers, all hauls would be sampled. While these less experienced observers are more likely to take smaller samples, but with more hauls sampled, the impacts to data quality are likely to balance out.

With respect to the suboptions, a L2 observer who has successfully completed 60 days of data collection at sea has proven they can successfully work on a vessel at sea. If both observers have at-sea experience, as in Suboption 3.1.1, the likelihood that one observer might become incapacitated by seasickness is drastically reduced, and the benefits of two observers working as a team hold up. Suboption 3.1.2, which would allow the deployment of a certified observer and a level 2 observer, would have a higher potential to negatively impact data quality due to the increased safety concerns and potential data quality concerns associated with an observers first contract. If a first time observer is incapacitated due to seasickness, then their inability to perform sampling duties could also negatively impact the partner's data collection because benefits of working in a team would not be realized.

4.3.1.4 Observer Availability

Option 3.1 would increase the number of observers available for deployment on freezer longline vessels. Rather than being limited only to the pool of nontrawl LL2 observers, all observers with at least the Level 2 endorsement could be deployed on a freezer longline vessel with a partner. In 2016, there were 110 new observers who gained the Level 2 endorsement with a total of 339 observers with this endorsement. This alternative would have increased the pool of observers qualified to deploy on a freezer longline vessel by 129 observers in 2016.

This option would also allow both observers deployed to gain sampling experience toward the nontrawl LL2 endorsement. This would increase the rate that the pool of LL2 endorsed observers could be supplemented as compared to the status quo where voluntary deployment of a second observer only results in one new nontrawl LL2 endorsement. A possible result of this option could be two observers gain the nontrawl LL2 endorsements for each trip where two observers are deployed.

4.3.1.5 Vessels

This option would reduce the potential for vessel delays, and associated costs, by creating an observer coverage option that does not require a LL2 endorsed observer. This option would provide flexibility to vessel operators and observer provider companies to select among two options at any time without prior NMFS approval. Observer providers would be able to predict when a LL2 observer would not be available and arrange for two observers to board the vessel for the trip. While carrying two observers would increase the cost of observer coverage for the vessel, this increased observer coverage cost would be offset by savings over the status quo. Under the status quo, vessels are voluntarily deploying second observers in order to increase the pool of available nontrawl LL2 observers. It would no longer be necessary for risk-averse freezer longline vessels to predict how many voluntary second observer trips are needed to grow the pool of LL2-endorsed observers; instead, a vessel would simply carry two observers as necessary when required. If the freezer longline vessels choose to continue the current practice of sharing the cost of second observers among members of the cooperative, this option is likely to result in an overall cost savings, or at a minimum, no cost increase.

4.3.1.6 Observer Providers

This option would create additional flexibility for observer providers to assign observers to freezer longline vessels. Increased flexibility with observer assignments would reduce operational costs for observer providers. There would be increased staff time providing in-season advising and debriefing services to less experienced observers.

4.3.1.7 NMFS

Option 3.1 would be implemented in regulation and would not result in additional administrative costs or additional monitoring and enforcement costs for the Agency.

4.3.2 Option 3.2 – Modify LL2 endorsement

Option 3.2 would modify the experience and training requirements for a nontrawl LL2 observer. BSAI freezer longline vessels and pot catcher/processors participating in the groundfish CDQ fisheries would still be required to carry a nontrawl LL2 endorsed observer, but the experience and training requirements for becoming a nontrawl LL2 observer would change. In addition to the existing experience pathway, an observer may alternatively become a nontrawl LL2 endorsed observer by having a trawl LL2 endorsement and taking a nontrawl training course. Table 11 shows that each year from 2012 to 2016, between 64 and 77 new observers gain the trawl LL2 endorsement. With the additional training, these observers could also be deployed as nontrawl LL2 observers on freezer longline vessels.

The Observer Program would determine the appropriate duration for the nontrawl training class, currently a 2-day training in Seattle is being considered. Observers who have achieved the required minimum sampling experience on either trawl or nontrawl vessels could participate in the training and upon successful completion of training, as required by the Observer Program, would be able to deploy as a nontrawl LL2 observer. An observer that has already deployed as a nontrawl LL2 observer would not be required to take the training.

4.3.2.1 Implementation Considerations

Implementation of this option would require a regulatory change to modify regulations at 50 CFR 679.53 to modify the experience and training requirements necessary for an observer to gain the nontrawl LL2 endorsement to include trawl CP sample experience. A nontrawl specific training class would need to be created and any observer who did not already have a nontrawl LL2 endorsement would need to complete the nontrawl LL2 training class prior to deploying as a nontrawl LL2 observer for the first time. Observer Program staff time would be necessary to develop and implement the training program. A portion of the training materials already exist and it is part of the normal annual staff routine to develop and provide training to observers. No increase would be expected in the staff time necessary to monitor compliance with observer coverage requirements under this option.

Pre-Cruise Meeting

A pre-cruise meeting would provide an opportunity for Observer Program staff to participate in a conversation between the vessel crew and a new observer prior to embarking on a trip. This would allow a staff person to clarify sampling expectations, and provide knowledgeable advice about anticipated sampling scenarios that an observer might encounter at sea. Establishing a requirement to attend a pre-cruise meeting as requested, on a case-by-case basis, by NMFS would better prepare the observer and the vessel crew to work together collaboratively and facilitate the collection of high quality data. Pre-cruise meetings are currently a requirement in the Rockfish Program and Amendment 80 fisheries and are offered on a voluntary basis to the freezer longline fleet. Meetings are currently held in Dutch Harbor or Kodiak and upon request in other locations at an Observer Program Office such as Seattle or Anchorage.

Regulations at 50 CFR §679.100 and 50 CFR §679.32 would be modified to require a vessel with a nontrawl LL2 observer requirement to participate in a pre-cruise meeting if notified to do so by NMFS.

To implement a pre-cruise meeting requirement under this alternative, regulations at 50 CFR §679.100 and §679.32 would be modified to require a vessel participate in a pre-cruise meeting if notified to do so by NMFS. NMFS would identify the need for a pre-cruise meeting based on information submitted to NMFS by observers and observer providers and would notify the vessel owner or operator to coordinate when and where the meeting would take place. The meeting time and location would not interfere with planned vessel operations, and could take place while the vessel is in port between trips at the time a new observer embarks the vessel.

4.3.2.2 Observer Health and Safety

This option would maintain a high level of experience for observers deployed as a sole nontrawl LL2 observer, minimizing the impact on observer health and safety. Experienced observers are more likely to successfully handle the stressful workload and be able to adapt to the random work and sleep schedule. The additional training class would allow Observer Program staff to provide a specific instruction and tips as how to successfully apply time management and stress management skills while working on freezer longline vessel. The observer would have completed at least two prior contracts, minimizing the likelihood of incapacitation due to seasickness.

4.3.2.3 Data Quality

Option 3.2 would allow observers with experience on a trawl catcher/processor vessels to deploy as a lead observer on a freezer longline vessel in addition to observers with experience on vessels using nontrawl gear. Observers who would qualify to deploy as a nontrawl LL2 observer without any prior sampling experience on a nontrawl vessel would be familiar with catcher/processor vessel operations, the use of the flowscale and have demonstrated proficiency in nontrawl sampling techniques by the successful completion of the additional training class. The additional training class would ensure all observers are adequately prepared to apply appropriate sampling techniques aboard a vessel using H&L gear, potentially for the first time. This option would be unlikely to negatively impact observer data quality. The observer would have completed at least two prior contracts, minimizing the likelihood of data deletion during debriefing. Modifying the experience requirements would maintain a high standard for observer experience to ensure that observers deployed for the first time on a freezer longline vessel would be familiar with a variety of sampling situations and have firsthand familiarity with the use of a flowscale.

4.3.2.4 Observer Availability

Option 3.2 would expand the sampling experience that would count toward an observer earning the LL2 endorsement for deployment as a lead on a freezer longline vessel. This option would expand the number of observers qualified to deploy on freezer longline vessels to include all observers with a trawl LL2 endorsement as well as those with the existing nontrawl LL2 endorsements. As shown in Table 11 in Section 3.3.2, each year from 2012 to 2016, between 64 and 77 new observers gained the trawl LL2 endorsement, added to the new nontrawl LL2 endorsements gained each year, up to 130 new observers could gain the experience necessary for the nontrawl LL2 endorsement each year.

The additional burden for observers to attend the new nontrawl LL2 training class would not significantly impact observer availability. The training class is expected to be relatively short (2 days). The training class could be completed at any time of year that the training is offered. Because an observer would need to meet the minimum experience requirement before enrolling in the class, the class could be offered shortly after a debriefing interview, or at other times of the year as necessary. NMFS does not expect that the completion of this training class would limit observer availability.

4.3.2.5 Vessels

Option 3.2 would expand the pool of observers qualified to deploy on freezer longline vessels. The increased pool of qualified observers would reduce the need to voluntarily deploy second observers to supplement the pool of qualified observers. This would result in annual savings on observer coverage costs to vessels which have collectively been paying over \$100,000/year for this program. By reducing the potential for a shortage of observers, this option could also reduce the potential for increased operating costs caused by delayed or shortened trips.

The addition of a pre-cruise meeting requirement would require a vessel owner or operator to make vessel personnel available to meet with the observer and NMFS staff as requested by NMFS. This is a current requirement for other fleets and NMFS expects to require a pre-cruise meeting only on an as needed basis to assist newly qualified nontrawl LL2 observers when first boarding a freezer longline vessel. Pre-cruise meetings could be scheduled during a vessels' time in port with minimal impacts on vessel operations.

4.3.2.6 Observer Providers

This option creates additional flexibility for observer providers to assign observers to freezer longline vessels, which reduces operational costs for observer providers. The additional training class for observers would increase operational costs for observer providers depending on the duration and frequency of the training class. Observer providers would have to enroll observers in this new training

class, this is a function already performed by observer providers and would represent a minimal added burden for observer providers. By expanding the pool of qualified observers available for deployment on freezer longline vessels, observer provider operating costs are likely to be reduced. Increased flexibility to deploy a wider variety of observers reduces overall observer provider operating costs.

4.3.2.7 NMFS

Option 3.2 would not result in large additional administrative costs for NMFS. Option 3.2 could increase the number of observer training classes and pre-cruise meetings held in Dutch Harbor or Kodiak. These are functions that are already supported by Observer Program staff and therefore would have little impact on overall staff demands. Option 3.2 would implement a new training program. Observer Program staff already develop training materials to support the voluntary nontrawl LL2 observer training program and provide training to observers throughout the year. This option would involve a one-time regulatory amendment with little to no additional demand on staff resources for administrative, or monitoring and enforcement functions. The addition of a training class and additional pre-cruise meetings would not impact overall Observer Program functions. This option could increase the demands on Observer Program field office staff time to participate in pre-cruise meetings. Pre-cruise meetings are already offered on a voluntary basis to freezer longline vessels and as a requirement for other vessels, the potential increase in pre-cruise meetings would have a minimal impact on Observer Program field office operations.

4.4 Impacts of Alternative 4 – Agency LL2 training

The impacts of Alternative 4 are largely economic. This alternative was designed to shift the economic burden of supplementing the pool of LL2 observers from the industry to NMFS. This alternative would increase the Agency's role in the deployment of observers on freezer longline vessels in the full coverage category. It would also require NMFS to secure or re-program funding to support at-sea training of observers, in a budget climate where the agency has already indicated that supplementary funds will no longer be available for other high priority at-sea observer coverage needs that the Council has identified. There are two separate implementation options, although the impacts are discussed jointly below.

Under alternative 4, option 1, the most significant difference from the status quo would be that the Agency would fund and deploy second observers on freezer longline vessels, for the purpose of supplementing the pool of nontrawl LL2 endorsed observers, within an available budget. Observer providers would continue to be responsible to respond to industry requests for observer coverage that meets the regulatory requirements, but they would also be responsible to work with NMFS, through a contract, to deploy second observers on freezer longline vessels if a shortage of LL2 observers is imminent. The exact mechanism for paying for observer coverage would need to be developed. It could be in the form of a single contract with multiple observer providers, or multiple contracts with individual providers. In either case it would significantly increase the administrative burden on the Agency for many of the same reasons described in Chapter 2 of the 2015 Observer Program Annual Report (NMFS 2016b).

Under alternative 4, option 2, regulations could be amended to modify the observer experience requirements for the nontrawl LL2 endorsement to allow at-sea training experience to count in lieu of the 30 sampled sets, or in combination with a level of sampling experience. NMFS would develop an at-sea training model mimicking the NEFOP model for training observers to be deployed on freezer longliners. Trip duration and number of training trips each year would be limited by the available budget.

NMFS does not recommend further analysis of Alternative 4. NMFS does not currently have funding to support existing demands on Observer Program resources. Given funding limitations, and the complicated administration of this alternative NMFS recommends moving Alternative 4 into the section for alternatives considered but not considered further in the next version of the RIR.

4.4.1 Observer Health and Safety

Under either option of Alternative 4, observer health and safety is unlikely to be impacted. This alternative could function similar to the status quo with the same observer health and safety concerns identified in Section 4.1.1. Observer Health and Safety.

4.4.2 Observer Availability

The impacts of alternative 4 on observer availability would entirely depend on the available budget. Budget and funding are discussed further in Section 4.5.5 of this analysis. In the best case scenario, this alternative could potentially affect observer availability equivalent to the status quo alternative.

4.4.3 Vessels

Alternative 4, if Agency funding were available, could potentially reduce the financial impact on vessel owners of funding voluntary deployment of second observers, and alleviating the risk of a shortage of LL2 observers creating vessels delays by shifting the burden to fund the creation of new LL2 observers to the Agency. In the absence of funding, or if funding was insufficient to meet the perceived risk, vessels may continue to feel the need to pay for voluntary deployment of second observers, incurring costs to the vessel as in the status quo.

4.4.4 Observer Providers

Under a fully funded Alternative 4, observer providers would continue to be responsible to monitor LL2 observer availability and deployment logistics and rather than communicating with vessel companies to coordinate the deployment of second observers, would communicate with NMFS to deploy observers either as seconds or on a training trip, depending on which implementation option were selected.

4.4.5 NMFS

Currently the Observer Program budget is fully utilized by existing activities of program administration, observer training and debriefing, and maintaining equipment for approximately 450 observers annually. After several years of receiving supplementary funds from NMFS for observer sea day costs, NMFS has indicated that supplementary funds will no longer be provided (Sobeck, August 16, 2016). As a result, in 2017 sea day costs were funded almost entirely by observer fees and observer deployment rates had to be reduced. To reallocate a portion of the overall Observer Program budget, would result in cutbacks to other program tasks if there is not a budget increase to offset the additional costs. The Agency has previously funded some observer deployments in the partial observer coverage category from 2013-2016 with temporary funds, but these funds are no longer available. In October and December 2016, the Council expressed concern about low observer selection rates presented in the 2017 Annual Deployment Plan for the partial observer coverage category. These low selection rates are due to a decrease in observer fees as well as the lack of Agency funding for observer deployment in 2017. The rationale in support of funding observer deployment on the freezer longline fleet in lieu of funding observer deployment in the partial observer coverage category would need to be developed.

Under Option 4.1, a single award (one company) or a multiple award contract for up to 5 years could be issued between NMFS and permitted observer providers. Determining the number of second observers to deploy would remain the responsibility of the observer providers. Observer providers would deploy second observers on freezer longline vessels and submit invoices to NMFS for reimbursement. Contract awards would be limited to the available budget. Observer deployment as a second observer under the NMFS contract would be no different than deployment under the status quo.

The cost of a contract would likely be based on a fixed daily deployment rate with limitations on the total number of observers and individual deployment duration under the contract. NMFS would develop a statement of work with the specific tasks to be completed within a period of performance, usually one calendar year, and request proposals from the various contractors before awarding the contract. To receive full payment, the contractors would provide a detailed cost breakdown of how the funds are spent to ensure that contract funds are spent on qualifying expenses related to the deployment of observers for the purpose of gaining the LL2 endorsement.

The contracting process would require some lead time before implementation, but could then operate nearly uninterrupted throughout the fishing year after the initial contract award. A contract greater than \$150,000, requires at least 9 months lead time and requests are due to the Acquisitions and Grants Office (AGO) by March of the year prior to implementation.

4.5 Impacts on Pot CPs

A catcher/processor using pot gear for groundfish CDQ fishing is required to carry a nontrawl LL2 observer. When a vessel is groundfish CDQ fishing, the observer data are the most reliable source of data for estimates of target species catch that accrues toward the CDQ allocation. For accurate accounting of CDQ catch, reliable observer data are necessary.

There are two pot CPs that have regularly participated in this fishery. These vessels are in the full observer coverage category because they are participating in a catch share fishery that requires higher levels of accountability for the catch of species allocated to the CDQ groups. When these vessels participate in non-CDQ groundfish fisheries, they are required to carry one observer at all times. CP vessels using pot gear also contract directly with observer provider firms for observer coverage and are in direct competition for nontrawl LL2 observers with the freezer longline fleet. These vessels only participate in groundfish CDQ fishing for part of the year and therefore have additional flexibility with regard to fishing plans and nontrawl LL2 observer availability when compared to the freezer longline fleet that has been required to carry a nontrawl LL2 observer at all times throughout the year.

4.5.1 Alternative 1 – No Action

There are four CP vessels that use pot gear in the groundfish fisheries off Alaska. CPs using pot gear are required to comply with the nontrawl LL2 observer requirement when groundfish CDQ fishing. When the vessel participates in other fisheries, they are required full observer coverage but do not have to comply with the additional LL2 endorsement requirement. Recently, there have been compliance issues relating to this requirement. The Observer Program issued a clarification memo to observer providers shortly after NOAA OLE provided outreach to pot CPs to remind observer providers and vessels of the nontrawl LL2 observer requirement when the vessel is groundfish CDQ fishing.

The rate of data deletion for observers deployed on CPs using pot gear is higher than the comparative number of deployments for observers deployed on CPs using any other gear type, with the deletions totaling 6 percent of all deletions and only 2 percent of the all observer deployments. As one of few fixed gear CPs in the full coverage category, observer providers may maximize the number of nontrawl LL2 observers created by assigning new observers on these vessels and removing them as soon as they have reached their required number of sets. This fast rotation of new observers on these vessels could contribute to the high data deletion rate because new observers, on their first or second contract, are more likely to have data deleted than more experienced observers.

Pot CPs participate in the groundfish CDQ fishery for only part of the year and have choices about when to fish the CDQ quota. This allows the vessel to have additional flexibility under the status quo if a nontrawl LL2 observer is not available. The vessel could conduct non-CDQ fishing until the assigned

observer has sampled 30 sets and gained the nontrawl LL2 endorsement, at which time the vessel could conduct groundfish CDQ fishing with the same observer.

4.5.2 Impacts of the Action Alternatives

The action alternatives would have varying impacts on the availability of nontrawl LL2 observers for deployment on pot CPs groundfish CDQ fishing. The Council's current purpose and need statement identifies the priority to reduce the potential for a shortage of LL2 observers for deployment on freezer longline vessels. To address the potential shortage of nontrawl LL2 observers for deployment more generally, i.e., to include pot CPs, the purpose and need statement and alternatives would need to be amended to apply to all vessels with a nontrawl LL2 requirement.

Alternative 2 – LL2 Exception

If Alternative 2 were expanded to apply to pot CPs when fishing groundfish CDQ, the case by case exception could allow a substitute observer to deploy on a pot CP when fishing groundfish CDQ if a LL2 observer were not available. The rate of data deletion for observers deployed on CPs using pot gear is already higher than the comparative number of deployments, the data deletion rate could rise if less experienced observers are deployed on these vessels. At the same time, under Alternative 2, regardless of whether it is expanded to pot CPs, there may be less incentive to routinely use new observers on pot CPs in order to create LL2-endorsements, which could improve the data deletion rate. Observers already gain experience toward the nontrawl LL2 endorsement on CPs using pot gear when the vessel is not groundfish CDQ fishing. This would continue to occur under Alternative 2.

Alternative 3 – Observer Options

If Option 3.1 were expanded to apply to pot CPs when fishing groundfish CDQ, it could allow a Pot CP to carry two non-LL2 observers during groundfish CDQ fishing, this would allow for all sets to be sampled, potentially increasing the amount of observer data collected, and thereby increasing the precision of the catch and discard estimates. This option would increase the cost of observer coverage for vessels if a nontrawl LL2 observer is not available with similar impacts as would be experienced by freezer longline vessels under this option. Because of the increased flexibility about when a pot CP participates in the groundfish CDQ fishery, these vessels would be less likely to utilize the two observer option under alternative 3.

Option 3.2 would apply more generally to all vessels with a nontrawl LL2 observer requirement. Under option 3.2, the existing nontrawl LL2 requirement would be modified to allow trawl experience to count toward deployment as a LL2 on any fixed gear vessel, significantly increasing the number of observers that would qualify to enroll in the new training class and subsequently deploy as a LL2 observer. The Observer Program could evaluate if pot gear specific training materials would be included in the new nontrawl LL2 training class. This option would also add a new requirement for vessels with a nontrawl LL2 observer requirement to participate in a pre-cruise meeting if notified to do so by NMFS.

Alternative 4 – Agency LL2 Training

Alternative 4, if fully funded, would mean no change from the status quo for CPs using pot gear, except that there may be some reduction in the incentive for observer providers to create as many LL2s as possible through deployment on pot CPs. As the Agency would be funding the endorsement of additional LL2s, there could be fewer placements of new observers on pot CPs as a way to get observers their LL2 endorsement.

4.6 Summary of the Impacts

This section provides a summary of the impacts of the alternatives that will be used to evaluate the net benefits to the Nation of this action. The impacts of the alternatives are analyzed using five impact categories; observer health and safety, observer data quality, observer availability, cost to the industry, and administrative costs. Affected entities include individuals using observer data, vessel owners and operators, observer providers, observers, and NMFS. Where possible, the impacts are quantified, otherwise a qualitative discussion has been prepared comparing the relative impacts of the action alternatives.

For the sections of this analysis addressing the impact on vessel owners, the primary focus is on impacts to the 29 freezer longline vessels that have participated in the BSAI Pacific Cod fishery each year since 2013. As noted particularly under Alternative 3, Option 3.2, a single freezer longliner has selected the two observer option and a small number of catcher/processor vessels using pot gear to harvest groundfish CDQ also are required to carry a nontrawl LL2 observer and could be impacted by this action.

Under the Status quo, there are limited avenues for observers to gain experience on nontrawl vessels to become qualified to deploy as a nontrawl LL2 observer. In response to the potential for a shortage of nontrawl LL2 observers, second observers have been deployed voluntarily on freezer longline vessels since 2014 at the expense of the vessels. The existing observer coverage requirements are designed to maximize the quality of data used to estimate catch and bycatch by this fleet. Overall, nontrawl LL2 observers collect very high quality data on freezer longline vessels under the existing regulatory structure.

Implementation of Alternative 2 would be administratively burdensome for vessels, observer providers and NMFS. It is unclear if implementation of an exception to the nontrawl LL2 endorsement could be done in such a way that it would entirely eliminate the possibility of a vessel being delayed at the dock. Implementation of this alternative would require NMFS to create infrastructure to monitor and facilitate observer deployment in the full coverage category in a more involved capacity than under the status quo. Alternative 2 would reduce the cost to vessels by reducing the incentive to deploy second observers and could also result in lower data quality because of the potential deployment of observers on freezer longline vessels whom do not have experience on vessels using nontrawl gear. This could result in an increase in the amount of data deleted and decrease the precision of total catch, bycatch and PSC estimates for the specific vessel participating in a *de facto* catch share program.

Implementation of either option under Alternative 3 would increase the pool of observers qualified to deploy on freezer longline vessels. Option 3.1 would allow deployment of two level 2 observers instead of one lead level 2 observer and Option 2 would modify the experience and training requirements necessary for an observer to gain the nontrawl LL2 endorsement. Both options could be implemented by a simple regulatory amendment and would not require the development of an ongoing administrative approval process making these two options relatively simple to implement relative to Alternative 2. Alternative 3, Option 3.2 would result in lower observer coverage costs to industry than Option 3.1 because the necessity to deploy two observers would be more likely under Option 3.1 than Option 3.2. Option 3.2 would likely double the number of observers that qualify for the nontrawl LL2 endorsement and could deploy as the sole observer. The cost to NMFS would likely be equivalent to the status quo under Option 3.1 and slightly increased due to the additional training component of alternative 3.2. Either option under alternative 3 would be less costly to NMFS than either Alternative 2 or Alternative 4.

The impacts of Alternative 4 are largely economic. This alternative was designed to shift the economic burden of supplementing the pool of LL2 observers from the industry to NMFS. The Observer Program is already limited by the availability of funds, this alternative would place even greater demand on an already limited budget and would increase the Agency's role in the logistical process of deploying observers on freezer longline vessels in the full coverage category.

The Council's current purpose and need statement identifies the priority to reduce the potential for a shortage of LL2 observers for deployment on freezer longline vessels. To address the potential shortage of nontrawl LL2 observers for deployment more generally, i.e., to include pot CPs, the purpose and need statement, Alternative 2, and Alternative 3, Option 3.1 would need to be modified to apply to all vessels with a nontrawl LL2 requirement.

Table 17 summarizes the impacts of the alternatives relative to the five impact categories (observer health and safety, observer data quality, observer availability, costs to the industry, and administrative costs) on individuals using observer data, vessel owners and operators, observer providers, observers, and NMFS. Table ES-1 provides specific detail on Options 3.1 and 3.2 under Alternative 3 because the impacts of these two options differs.

Table 17 Major elements and impacts of the alternatives and options.

Affected Entity	Alt 1 Status quo	Alt 2 LL2 exception	Alt 3, Opt 3.1 2 observers	Alt 3, Opt 3.2 LL2 endorsement	Alt 4, Opts 4.1 & 4.2 At-sea training
Impact Category: Obs. Health & Safety					
Observers	<ul style="list-style-type: none"> Stressful as single observer with heavy workload NMFS reviewing Data collection protocols 	<ul style="list-style-type: none"> Status quo plus: Increased stress due to less experienced observer Deploying newly certified observers is highest risk 	<ul style="list-style-type: none"> Status quo plus: Increased stress due to less experienced observers, but balanced by having two observers Deploying newly certified observers is highest risk 	<ul style="list-style-type: none"> Minimal change from status quo as observer has comparable at-sea experience 	<ul style="list-style-type: none"> No change from status quo
Impact Category: Data quality					
Individuals using observer data, vessel owners and operators, and NMFS	<ul style="list-style-type: none"> High quality data 	<ul style="list-style-type: none"> In most cases, status quo Reduced data quality with less experienced observers Risk decreases with experienced observers (more than 2 contracts) 	<ul style="list-style-type: none"> In most cases, status quo Reduced data quality of less experienced observers balanced by having two 	<ul style="list-style-type: none"> Minimal change from status quo, observers would have comparable at-sea experience and gear-specific training 	<ul style="list-style-type: none"> No change from status quo
Impact Category: Observer Availability					
Observer Providers: Pathways to create LL2 observers	<ul style="list-style-type: none"> Deployment on pot or LL CPs in full coverage, Fixed gear CVs in partial coverage 	<ul style="list-style-type: none"> Status quo plus: Substitute observers deployed if exception granted 	<ul style="list-style-type: none"> Status quo plus: Deployment of 2 less experienced observers on freezer longline vessels 	<ul style="list-style-type: none"> Status quo plus: Trawl LL2s with additional training 	<ul style="list-style-type: none"> No change from status quo
Impact Category: Costs to Industry					
Vessel owners and operators	<ul style="list-style-type: none"> Potential for vessel delays \$110-180k/ year for voluntary seconds 	<ul style="list-style-type: none"> Reduces potential for vessel delays Possibly eliminate or reduce the cost of voluntary seconds Time and information burden of requesting an exception Cost of available LL2 observers would not be considered 	<ul style="list-style-type: none"> Reduces potential for vessel delays Possibly reduces cost of second observers, seconds deployed as-needed basis, rather than a proactive calculation 	<ul style="list-style-type: none"> Reduces potential for vessel delays Eliminates cost of voluntary seconds 	<ul style="list-style-type: none"> Eliminates cost of voluntary seconds if Federal funding, otherwise no change from status quo
Observer Providers	<ul style="list-style-type: none"> Track and calculate LL2 availability, and organize voluntary seconds Increased operating costs due to deployment incentives for LL2 observers 	<ul style="list-style-type: none"> May be required to help vessel or NMFS document exception request 	<ul style="list-style-type: none"> organize seconds as needed 	<ul style="list-style-type: none"> Additional training for some new nontrawl LL2 observers 	<ul style="list-style-type: none"> No change from status quo except will organize 2nds with NMFS
Impact Category: Administrative Costs					
NMFS	<ul style="list-style-type: none"> Current level of Administrative costs of observer training, advising, debriefing. 	<ul style="list-style-type: none"> Status quo plus: Costs and workload to implement regulatory change Ongoing costs and workload to process exception requests 	<ul style="list-style-type: none"> Status quo plus: Costs and workload to implement regulatory change 	<ul style="list-style-type: none"> Status quo plus: Costs and workload to implement regulatory change Costs and workload to develop and provide nontrawl observer training 	<ul style="list-style-type: none"> Status quo plus: Additional Federal funding for deployment that is not anticipated to be available & costs of new contract administration

5 Magnuson-Stevens Act and FMP Considerations

5.1 Magnuson-Stevens Act National Standards

Below are the 10 National Standards as contained in the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act), and a brief discussion of how each alternative is consistent with the National Standards, where applicable. In recommending a preferred alternative, the Council must consider how to balance the national standards.

National Standard 1 — Conservation and management measures shall prevent overfishing while achieving, on a continuing basis, the optimum yield from each fishery for the United States fishing industry.

None of the alternatives would affect the ability of the NMFS to prevent overfishing while achieving optimum yield. The proposed action evaluates implementation of alternative observer requirements for BSAI freezer longline vessels and pot catcher/processors participating in the groundfish CDQ fisheries. Observer data would continue to be available to fishery managers and stock assessment authors in order to monitor and prevent overfishing. None of the alternatives would modify the methods used to establish overfishing limits, the optimum yield in the groundfish fisheries, or the amount of fishing that is allowed on annual basis. None of the alternatives would be expected to affect the ability of vessel owners or CDQ groups to fully harvest their allocations under existing regulations.

National Standard 2 — Conservation and management measures shall be based upon the best scientific information available.

Observer data would continue to be a component of the best available data for the purpose of conservation and management of this fishery. NMFS has implemented prior experience requirements for observers on freezer longliners in the Freezer Longline Coalition Cooperative and pot catcher/processors participating in the groundfish CDQ fisheries that are necessary to collect the quality of data needed to manage and conserve the fisheries in which these vessels participate. Alternatives 2 and 3 would change some aspect of the experience requirements for at least some observers on these vessels relative to the status quo. Under Alternative 2, NMFS does not recommend Option 2.2 or Option 2.3 these options would allow observers that NMFS does not believe are adequately prepared to collect the quality of data needed from the freezer longline vessels. Section 4 of this Analysis describes the potential impact on data quality for each of the alternatives considered.

National Standard 3 — To the extent practicable, an individual stock of fish shall be managed as a unit throughout its range, and interrelated stocks of fish shall be managed as a unit or in close coordination.

The data collection changes that may result from the implementation of the proposed action would not affect the ability of the Council and NMFS to manage individual fish stocks throughout their range, as the implementation of modified observer coverage requirements would not eliminate the availability of any source of data, and observer data would continue to be used to provide estimates for the fishing activities using established procedures.

National Standard 4 — Conservation and management measures shall not discriminate between residents of different states. If it becomes necessary to allocate or assign fishing privileges among various United States fishermen, such allocation shall be; (A) fair and equitable to all such fishermen, (B) reasonably calculated to promote conservation, and (C) carried out in such a manner that no particular individual, corporation, or other entity acquires an excessive share of such privileges.

The proposed action would impact all vessels required to carry a nontrawl LL2 observer equally and would not discriminate between residents of different states in doing so. The proposed action would not allocate or assign fishing privileges among various United States Fishermen.

National Standard 5 — Conservation and management measures shall, where practicable, consider efficiency in the utilization of fishery resources, except that no such measure shall have economic allocation as its sole purpose.

The purpose of the proposed action is to reduce the potential for a shortage of nontrawl LL2 observers to impose unnecessary costs on the owners of freezer longline vessels or pot catcher/processors. By reducing the risk of a shortage of observers that would have a negative economic impact on vessels harvesting the fishery resource, this action would be increasing the efficiency of the overall harvest by minimizing economic risk to individual participants.

National Standard 6 — Conservation and management measures shall take into account and allow for variations among, and contingencies in, fisheries, fishery resources, and catches.

The observer coverage and experience requirements for the groundfish and halibut fisheries off Alaska are tailored to the conservation and management needs for individual fisheries and the capacity of vessels and vessel owners to accommodate and pay for observer coverage. The proposed action would revise the requirements for freezer longline and pot catcher/processors to reduce the potential for shortages of nontrawl LL2 observers to impose costs on vessel owners while maintaining the level of data quality needed to manage the fisheries in which these vessels participate (Chapter 4).

National Standard 7 — Conservation and management measures shall, where practicable, minimize costs and avoid unnecessary duplication.

The purpose of the proposed action is to reduce the potential for a shortage of nontrawl LL2 observers to impose unnecessary costs on the owners of freezer longline vessels or pot catcher/processors participating in the groundfish CDQ fisheries. Reducing the risk of a shortage of observers would minimize the cost of observer coverage requirements for these vessel owners.

National Standard 8 — Conservation and management measures shall, consistent with the conservation requirements of this Act (including the prevention of overfishing and rebuilding of overfished stocks), take into account the importance of fishery resources to fishing communities by utilizing economic and social data that meet the requirements of National Standard 2, in order to (A) provide for the sustained participation of such communities, and (B) to the extent practicable, minimize adverse economic impacts on such communities.

The proposed action does not reduce the potential for sustained participation of fishing communities in the groundfish and halibut fisheries off Alaska because the alternatives would not change fishery allocations or harvest or delivery patterns. To the extent that freezer longline fishery participants are members of fishing communities that are affected by the prosperity of the fishery, the proposed action considers how to minimize adverse economic impacts on fishery participants. In addition, the allocations being harvested by the pot catcher/processors participating in the groundfish CDQ fisheries are made to CDQ groups who represent western Alaska communities. Although any reduction in the costs of observer coverage primarily benefit the owners of the pot catcher/processors, to the extent that costs are reduced in the CDQ fisheries, the CDQ groups and the fishing communities they represent may also benefit.

National Standard 9 — Conservation and management measures shall, to the extent practicable, (A) minimize bycatch, and (B) to the extent bycatch cannot be avoided, minimize the mortality of such bycatch.

The Council's fisheries research plan, as implemented by the Observer Program, provides the standardized reporting methodology to assess the type and amount of bycatch occurring in the groundfish and halibut fisheries. The proposed action would not modify existing reporting methodologies.

National Standard 10 — Conservation and management measures shall, to the extent practicable, promote the safety of human life at sea.

NMFS has implemented regulatory protections, training requirements, and program policies which identify observer safety as the highest priority. None of the alternatives would change or compromise the underlying support system for observer safety. NMFS has implemented prior experience requirements for observers on freezer longliners in the FLCC and pot catcher/processors participating in the groundfish CDQ fisheries that are necessary to collect the quality of data needed to manage and conserve the fisheries in which these vessels participate. In addition, these prior experience requirements also address NMFS's responsibility to support the health and safety of observers. The analysis identifies that less experienced observers may face additional health and safety risks when deployed as the sole observer on a freezer longliner and that prior experience is an important factor to ensure that an observer can accomplish the data collection duties on a freezer longline vessel without undue negative impacts on his or her health or safety. Specifically, NMFS does not recommend Option 2.2 or Option 2.3 primarily due to concerns that less experienced observers would not be adequately prepared to collect the quality of data needed from the freezer longline vessels, but also due to concerns that the demands of these deployments may negatively affect the observer's health and safety.

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7 Data Sources

Information presented throughout this analysis, but primarily in Chapter 3 and 4, was prepared using data from the NMFS catch accounting system (CAS) and from the Observer Program database. CAS is the best available data to estimate the total catch data presented in Chapter 3 and used throughout the analysis. Total catch estimates are generated from information provided through a variety of required industry reports of harvest and at-sea discard, and data collected through an extensive fishery observer program. The AFSC Observer Program Database (NORPAC) is the best available data to estimate observer eligibility and deployment information. The specific information used to estimate catch in the BSAI Pacific cod fisheries and other relevant fisheries is described in more detail in Section 1.5.

CAS data is provided through the Alaska Fisheries Information Network (AKFIN), which pulls together CAS data, Commercial Fisheries Entry Commission Fish Ticket data, and Commercial Operators Annual Report data to supply catch and discard records, as well as estimates of gross ex-vessel revenues.

The cost of observer coverage in the full coverage category presented in Chapters 3 and 4 is derived from observer invoice data. Since 2011, Observer providers have been required to submit copies of all invoices for observer coverage in the full coverage category (75 FR 69016, November 10, 2010). Invoices are submitted to NMFS and compiled by FMA staff.

Information about observer data deletions presented in Chapter 4 was compiled and analyzed by FMA staff.

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Appendices

Appendix A. October 2016 Council Motion

North Pacific Fishery Management Council

FINAL Motion: C5 Shortage of Fixed Gear Lead Level 2 Observers

October 7, 2016

The Council directs staff to move forward for initial review the discussion paper addressing the shortage of fixed gear Lead Level 2 (LL2) observers (agenda item C-5). Alternatives for review should include a no action alternative and Options 1 and 4 as described in the discussion paper and in the October 2015 Council motion on this issue. Alternatives should also include Option 6 developed by the Observer Program, with the sub-option added by the Observer Advisory Committee (OAC).

Alternatives (Option from discussion paper noted in parentheses):

- Alternative 1: No action
- Alternative 2 (Option 1): Allow deployment of a non-fixed gear LL2 observer on FLC vessels if the only alternative is that the vessel must stand down:
 - Deploy any non-LL2 observer
 - Deploy a trawl LL2 observer
- Alternative 3 (Option 4): Institute an at-sea training component to the Federal observer training program, whereby the agency would pay for fixed gear LL2 certification.
- Alternative 4 (Option 6): Allow freezer longline (FLL) vessels with flow scales to choose between a single LL2 observer or two level 2 observers
 - Sub-option: Allow FLL vessels with flow scales to choose between a single LL2 observer, or a level 2 and level 1 observer.

Lastly, the Council supports further exploration by the Observer Program of non-regulatory actions described in Section 5.7 of the discussion paper to increase the preparedness of new fixed gear LL2 observers deployed on freezer longline vessels.

Purpose and Need:

Under monitoring and enforcement regulations in place since October 2012, owners of freezer longline vessels named on License Limitation Program (LLP) licenses endorsed to catch and process Pacific cod in the (BSAI) are required to select between two monitoring options: carry two observers so that all catch can be sampled, or use a motion-compensated flow scale to weigh Pacific cod before it is processed and carry one observer. Under both monitoring options, at least one of the observers must be endorsed as a lead level 2 observer for vessels using fixed-gear.

All freezer longline vessels except one have chosen the flow scales with a single LL2 observer option. This, combined with current observer deployment model that places most fixed-gear catcher vessels in the partial observer coverage category, means that there are few fixed-gear vessels in the full observer coverage category which do not require a LL2 observer. Therefore, observers employed by the full coverage observer providers have few opportunities to gain the necessary experience to obtain the LL2 endorsement for vessels using fixed-gear. NMFS, observer providers, and industry undertook a series of non-regulatory actions designed to build and retain a pool of available LL2 endorsed observers. This included industry voluntarily deploying second observers on some freezer longline vessels, at a cost to the Industry, in order to allow them the experience to earn the LL2 endorsement.

The Council is concerned about the potential for a shortage of LL2 observers for deployment on freezer longline vessels and the resulting costs that could be incurred. This action is intended to address the need to maintain a high standard of observer data quality, and the need to minimize the potential for shortages of LL2 observers and additional costs to industry.

Appendix B. Relevant regulations

§679.51 Observer requirements for vessels and plants.

(a) *Observer requirements for vessels—*

(1) *Groundfish and halibut fishery partial observer coverage category—*

* * * * *

(2) *Groundfish and halibut fishery full observer coverage category—*

(i) *Vessel classes in the full coverage category.* The following classes of vessels are in the full observer coverage category when harvesting halibut or when harvesting, receiving, or processing groundfish in a federally managed or parallel groundfish fishery, as defined at §679.2:

(A) Catcher/processors, except a catcher/processor placed in the partial observer coverage category under paragraph (a)(3) of this section;

(B) Motherships; and

(C) Catcher vessels while:

(1) Directed fishing for pollock in the BS;

(2) Using trawl gear or hook-and-line gear when groundfish CDQ fishing (see §679.2), except for catcher vessels less than or equal to 46 ft LOA using hook-and-line gear when groundfish CDQ fishing under §679.32(c)(3)(iii);

(3) Participating in the Rockfish Program; or

(4) Using trawl gear in the BSAI if the vessel has been placed in the full observer coverage category under paragraph (a)(4) of this section.

(ii) *Observer coverage requirements.* Unless subject to the partial observer coverage category per paragraph (a)(1)(i) of this section, a vessel listed in paragraphs (a)(2)(i)(A) through (C) of this section must have at least one observer aboard the vessel at all times. Some fisheries require additional observer coverage in accordance with paragraph (a)(2)(vi) of this section.

(iii) *Observer workload.* The time required for an observer to complete sampling, data recording, and data communication duties per paragraph (a)(2) of this section may not exceed 12 consecutive hours in each 24-hour period.

(iv) *Catcher/processor classification.* (A) For purposes of this subpart, a vessel is classified as a catcher/processor according to the operation designation on its FFP. A vessel designated as a catcher/processor at any time during the calendar year is classified as a catcher/processor for the remainder of the calendar year.

(B) [Reserved]

(v) [Reserved]

(vi) *Additional observer requirements—*

(A) *CDQ fisheries.* The owner or operator of a vessel must comply with the following requirements each day that the vessel is used to catch, process, deliver, or receive CDQ groundfish.

(1) *Catcher/processors using trawl gear and directed fishing for pollock CDQ in the BSAI and motherships taking deliveries from catcher vessels directed fishing for pollock CDQ in the BSAI.* See paragraph (a)(2)(vi)(B)(2) of this section.

(2) *Catcher/processors using trawl gear and groundfish CDQ fishing.* See paragraph (a)(2)(vi)(C) of this section.

(3) *Catcher/processors using hook-and-line gear and groundfish CDQ fishing.* See paragraph (a)(2)(vi)(E) of this section.

(4) *Catcher/processors using pot gear for groundfish CDQ fishing.* A catcher/processor using pot gear must have at least one lead level 2 observer aboard the vessel. More than one observer must be aboard if the observer workload restriction would otherwise preclude sampling as required.

(5) *Motherships.* A mothership that receives unsorted codends from catcher vessels groundfish CDQ fishing must have at least two level 2 observers aboard the mothership, at least one of whom must be certified as a lead level 2 observer. More than two observers must be aboard if the observer workload restriction would otherwise preclude sampling as required.

(B) *BSAI pollock fisheries—(1) Listed AFA catcher/processors, catcher/processors designated on listed AFA catcher/processor permits, and AFA motherships.* The owner or operator of a listed AFA catcher/processor, a catcher/processor designated on a listed AFA catcher/processor permit, or an AFA mothership must have aboard at least two observers, at least one of whom must be certified as a lead level 2 observer, for each day that the vessel is used to catch, process, or receive groundfish. More than two observers must be aboard if the observer workload restriction would otherwise preclude sampling as required.

(2) *Pollock CDQ catcher/processors and motherships.* The owner or operator of a catcher/processor or mothership used to catch, process, or receive pollock CDQ must comply with the observer coverage requirements in paragraph (a)(2)(vi)(B)(1) of this section for each day that the vessel is used to catch, process, or receive pollock CDQ.

(3) *Unlisted AFA catcher/processors and catcher/processors designated on unlisted AFA catcher/processor permits.* The owner or operator of an unlisted AFA catcher/processor or a catcher/processor designated on an unlisted AFA catcher/processor permit must have aboard at least two observers for each day that the vessel is used to engage in directed fishing for pollock in the BSAI, or receive pollock harvested in the BSAI. At least one observer must be certified as a lead level 2 observer. When a listed AFA catcher/processor is not engaged in directed fishing for BSAI pollock and is not receiving pollock harvested in the BSAI, the observer coverage requirements at paragraph (a)(2)(ii) of this section apply.

(4) *AI directed pollock fishery catcher/processors and motherships.* A catcher/processor participating in the AI directed pollock fishery or a mothership processing pollock harvested in the AI directed pollock fishery must have aboard at least two observers, at least one of which must be certified as a lead level 2 observer, for each day that the vessel is used to catch, process, or receive groundfish. More than two observers must be aboard if the observer workload restriction would otherwise preclude sampling as required.

(C) *Amendment 80 vessels and catcher/processors not listed in §679.4(1)(2)(i) and using trawl gear in the BSAI.* All Amendment 80 vessels using any gear but dredge gear while directed fishing for scallops and catcher/processors not listed in §679.4(1)(2)(i) and using trawl gear in the BSAI must have aboard at least two observers for each day that the vessel is used to catch, process, or receive groundfish harvested in a federally managed or parallel groundfish fishery. At least one observer must be certified as a lead level 2 observer. More than two observers are required if the observer workload restriction would otherwise preclude sampling as required.

(D) *Catcher/processors participating in the Rockfish Program—(1) Rockfish cooperative.* A catcher/processor that is named on an LLP license that is assigned to a rockfish cooperative and is fishing under a CQ permit must have at least two observers aboard for each day that the vessel is used to catch or process fish in the Central GOA from May 1 through the earlier of November 15 or the effective date and time of an approved rockfish cooperative termination of fishing declaration. At least one observer must be certified as a lead level 2 observer. More than two observers must be aboard if the observer workload restriction would otherwise preclude sampling as required.

(2) *Rockfish sideboard fishery for catcher/processors in a rockfish cooperative.* A catcher/processor that is subject to a sideboard limit as described under §679.82(e) must have at least two observers aboard for each day that the vessel is used to harvest or process fish in the West Yakutat District, Central GOA, or Western GOA management areas from July 1 through July 31. At least one observer must be certified as a lead level 2 observer. More than two observers must be aboard if the observer workload restriction would otherwise preclude sampling as required.

(E) *Longline catcher/processor subsector.* The owner and operator of a catcher/processor subject to §679.100(b) must comply with the following observer coverage requirements:

(1) *Increased observer coverage option.* If the vessel owner selects the increased observer coverage option under §679.100(b)(1), at least two observers must be aboard the vessel at all times when the vessel is operating in either the BSAI or GOA groundfish fisheries when directed fishing for Pacific cod is open in the BSAI, or while the vessel is groundfish CDQ fishing. At least one of the observers must be certified as a lead level 2 observer. More than two observers are required if the observer workload restriction would otherwise preclude sampling as required.

(2) *Scales option.* If the vessel owner selects the scales option under §679.100(b)(2), one lead level 2 observer must be aboard the vessel at all times when the vessel is operating in either the BSAI or GOA groundfish fisheries when directed fishing for Pacific cod is open in the BSAI, or while the vessel is groundfish CDQ fishing.

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(b) *Observer requirements for shoreside processors and stationary floating processors*

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(c) *NMFS employee observers.*

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(d) *Procurement of observer services—*

(1) *Full coverage category.*

(i) The owner of a vessel, shoreside processor, or stationary floating processor required to have full observer coverage under paragraphs (a)(2) and (b)(2) of this section must arrange and pay for observer services from a permitted observer provider.

(ii) The owner of a vessel, shoreside processor, or stationary floating processor is required to arrange and pay for observer services directly from NMFS when the agency has determined and notified them under paragraph (c) of this section that the vessel, shoreside processor, or stationary floating processor shall use a NMFS employee or individual authorized by NMFS in lieu of, or in addition to, an observer provided through a permitted observer provider to satisfy requirements under paragraphs (a)(2) and (b)(2) of this section or for other conservation and management purposes.

(2) *Partial coverage category.* The owner of a vessel in the partial observer coverage category per paragraph (a)(1) of this section must comply with instructions provided by ODDS to procure observer coverage for the required duration.

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§679.52 Observer provider permitting and responsibilities.

(a) *Observer provider permit—*

(1) *Permit.* The Regional Administrator may issue a permit authorizing a person's participation as an observer provider for operations requiring full observer coverage per §679.51(a)(2) and (b)(2). Persons seeking to provide observer services under this section must obtain an observer provider permit from NMFS.

(2) *New observer provider.* An applicant seeking an observer provider permit must submit a completed application by fax or mail to the Observer Program Office at the address listed at §679.51(c)(3).

(3) *Contents of application.* An application for an observer provider permit shall consist of a narrative that contains the following:

(i) Identification of the management, organizational structure, and ownership structure of the applicant's business, including identification by name and general function of all controlling management

interests in the company, including but not limited to owners, board members, officers, authorized agents, and other employees. If the applicant is a corporation, the articles of incorporation must be provided. If the applicant is a partnership, the partnership agreement must be provided.

(ii) *Contact information*—(A) *Owner(s) information*. The permanent mailing address, phone and fax numbers where the owner(s) can be contacted for official correspondence.

(B) *Business information*. Current physical location, business mailing address, business telephone and fax numbers, and business email address for each office.

(C) *Authorized agent*. For an observer provider with ownership based outside the United States, identify an authorized agent and provide contact information for that agent including mailing address and phone and fax numbers where the agent can be contacted for official correspondence. An authorized agent means a person appointed and maintained within the United States who is authorized to receive and respond to any legal process issued in the United States to an owner or employee of an observer provider. Any diplomatic official accepting such an appointment as designated agent waives diplomatic or other immunity in connection with the process.

(iii) A statement signed under penalty of perjury from each owner, or owners, board members, and officers if a corporation, that they have no conflict of interest as described in paragraph (c) of this section.

(iv) A statement signed under penalty of perjury from each owner, or owners, board members, and officers if a corporation, describing any criminal convictions, Federal contracts they have had and the performance rating they received on the contract, and previous decertification action while working as an observer or observer provider.

(v) A description of any prior experience the applicant may have in placing individuals in remote field and/or marine work environments. This includes, but is not limited to, recruiting, hiring, deployment, and personnel administration.

(vi) A description of the applicant's ability to carry out the responsibilities and duties of an observer provider as set out under paragraph (b) of this section, and the arrangements to be used.

(4) *Application evaluation*. (i) The Regional Administrator will establish an observer provider permit application review board, comprised of NMFS employees, to review and evaluate an application submitted under paragraph (a) of this section. The review board will evaluate the completeness of the application, the application's consistency with needs and objectives of the observer program, or other relevant factors. If the applicant is a corporation, the review board also will evaluate the following criteria for each owner, or owners, board members, and officers:

(A) Absence of conflict of interest as defined under paragraph (c) of this section;

(B) Absence of criminal convictions related to:

(1) Embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements or receiving stolen property, or

(2) The commission of any other crimes of dishonesty, as defined by Alaska State law or Federal law, that would seriously and directly affect the fitness of an applicant in providing observer services under this section;

(C) Satisfactory performance ratings on any Federal contracts held by the applicant; and

(D) Absence of any history of decertification as either an observer or observer provider;

(ii) [Reserved]

(5) *Agency determination on an application*. NMFS will send a written determination to the applicant. If an application is approved, NMFS will issue an observer provider permit to the applicant. If an application is denied, the reason for denial will be explained in the written determination.

(6) *Transferability*. An observer provider permit is not transferable. An observer provider that experiences a change in ownership that involves a new person must submit a new permit application and cannot continue to operate until a new permit is issued under this paragraph (a).

(7) *Expiration of observer provider permit.* (i) An observer provider permit will expire after a period of 12 continuous months during which no observers are deployed by the provider under this section to the North Pacific groundfish or halibut industry.

(ii) The Regional Administrator will provide a written initial administrative determination (IAD) of permit expiration to an observer provider if NMFS' deployment records indicate that the observer provider has not deployed an observer during a period of 12 continuous months. An observer provider who receives an IAD of permit expiration may appeal under §679.43. An observer provider that appeals an IAD will be issued an extension of the expiration date of the permit until after the final resolution of the appeal.

(8) *Sanctions.* Procedures governing sanctions of permits are found at subpart D of 15 CFR part 904.

(b) *Responsibilities of observer providers.* An observer provider that supplies observers for operations requiring full observer coverage per §679.51(a)(2) and (b)(2) must:

(1) *Provide qualified candidates to serve as observers.* (i) To be a qualified candidate an individual must have:

(A) A Bachelor's degree or higher from an accredited college or university with a major in one of the natural sciences;

(B) Successfully completed a minimum of 30 semester hours or equivalent in applicable biological sciences with extensive use of dichotomous keys in at least one course;

(C) Successfully completed at least one undergraduate course each in math and statistics with a minimum of 5 semester hours total for both; and

(D) Computer skills that enable the candidate to work competently with standard database software and computer hardware.

(ii) Prior to hiring an observer candidate, the observer provider must provide to the candidate copies of NMFS-prepared pamphlets and other information describing observer duties.

(iii) For each observer employed by an observer provider, either a written contract or a written contract addendum must exist that is signed by the observer and observer provider prior to the observer's deployment and that includes the following conditions for continued employment:

(A) That all the observer's in-season catch messages between the observer and NMFS are delivered to the Observer Program Office at least every 7 days, unless otherwise specified by the Observer Program;

(B) That the observer completes in-person mid-deployment data reviews, unless:

(1) The observer is specifically exempted by the Observer Program, or

(2) The observer does not at any time during his or her deployment travel through a location where an Observer Program employee is available for an in-person data review and the observer completes a phone or fax mid-deployment data review as described in the Observer Sampling Manual; and

(C) The observer informs the observer provider prior to the time of embarkation if he or she is experiencing any new mental illness or physical ailments or injury since submission of the physician's statement as required in paragraph (b)(11)(iii) of this section that would prevent him or her from performing his or her assigned duties;

(2) *Ensure an observer completes duties in a timely manner.* An observer provider must ensure that an observer employed by that observer provider performs the following in a complete and timely manner:

(i) When an observer is scheduled for a final deployment debriefing under paragraph (b)(11)(v) of this section, submit to NMFS all data, reports required by the Observer Sampling Manual, and biological samples from the observer's deployment by the completion of the electronic vessel and/or processor survey(s);

(ii) Complete NMFS electronic vessel and/or processor surveys before performing other jobs or duties that are not part of NMFS groundfish observer requirements;

(iii) Report for his or her scheduled debriefing and complete all debriefing responsibilities; and

(iv) Return all sampling and safety gear to the Observer Program Office.

(3) *Observer conduct.* (i) An observer provider must develop, maintain, and implement a policy addressing observer conduct and behavior for their employees that serve as observers. The policy shall address the following behavior and conduct regarding:

(A) Observer use of alcohol;

(B) Observer use, possession, or distribution of illegal drugs; and

(C) Sexual contact with personnel of the vessel or processing facility to which the observer is assigned, or with any vessel or processing plant personnel who may be substantially affected by the performance or non-performance of the observer's official duties.

(ii) An observer provider shall provide a copy of its conduct and behavior policy:

(A) To observers, observer candidates; and

(B) By February 1 of each year to the Observer Program Office.

(4) *Assign observer to vessels and processors.* An observer provider must assign to vessels or shoreside or floating processors only observers:

(i) With valid North Pacific groundfish and halibut observer certifications and endorsements to provide observer services;

(ii) Who have not informed the provider prior to the time of embarkation that he or she is experiencing a mental illness or a physical ailment or injury developed since submission of the physician's statement, as required in paragraph (b)(11)(iii) of this section that would prevent him or her from performing his or her assigned duties; and

(iii) Who have successfully completed all NMFS required training and briefing before deployment.

(5) *Respond to industry requests for observers.* An observer provider must provide an observer for deployment as requested by vessels and processors to fulfill vessel and processor requirements for observer coverage under §679.51(a) and (b). An alternate observer must be supplied in each case where injury or illness prevents the observer from performing his or her duties or where the observer resigns prior to completion of his or her duties.

(6) *Provide observer salaries and benefits.* An observer provider must provide to its observer employees, salaries and any other benefits and personnel services in accordance with the terms of each observer's contract.

(7) *Provide observer deployment logistics.*

(i) An observer provider must provide to each observer it employs:

(A) All necessary transportation, including arrangements and logistics, to the initial location of deployment, to all subsequent vessel and shoreside or stationary floating processor assignments during that deployment, and to the debriefing location when a deployment ends for any reason; and

(B) Lodging, per diem, and any other necessary services necessary to observers assigned to fishing vessels or shoreside processing or stationary floating processing facilities.

(ii) Except as provided in paragraph (b)(7)(iii) of this section, an observer provider must provide to each observer deployed to a shoreside processing facility or stationary floating processor, and each observer between vessel, stationary floating processor, or shoreside assignments while still under contract with an observer provider, shall be provided with accommodations at a licensed hotel, motel, bed and breakfast, stationary floating processor, or other shoreside accommodations for the duration of each shoreside assignment or period between vessel or shoreside assignments. Such accommodations must

include an assigned bed for each observer and no other person may be assigned that bed for the duration of that observer's stay. Additionally, no more than four beds may be in any room housing observers at accommodations meeting the requirements of this section.

(iii) An observer under contract may be housed on a vessel to which the observer is assigned:

(A) Prior to the vessel's initial departure from port;

(B) For a period not to exceed 24 hours following completion of an offload for which the observer has duties and is scheduled to disembark; or

(C) For a period not to exceed 24 hours following the vessel's arrival in port when the observer is scheduled to disembark.

(iv) During all periods an observer is housed on a vessel, the observer provider must ensure that the vessel operator or at least one crew member is aboard.

(v) Each observer deployed to a shoreside processing facility must be provided with individually assigned communication equipment in working order, such as a cell phone or pager, for notification of upcoming deliveries or other necessary communication. Each observer assigned to a shoreside processing facility located more than 1 mile from the observer's local accommodations shall be provided with motorized transportation that will ensure the observer's arrival at the processing facility in a timely manner such that the observer can complete his or her assigned duties.

(8) *Limit observer deployment.* Unless alternative arrangements are approved by the Observer Program Office, an observer provider must not:

(i) Deploy an observer on the same vessel or at the same shoreside or stationary floating processor for more than 90 days in a 12-month period;

(ii) Deploy an observer for more than 90 days in a single deployment;

(iii) Include in a single deployment of an observer, assignments to more than four vessels, including groundfish and all other vessels, and/or shoreside processors; or

(iv) Move an observer from a vessel or stationary floating processor or shoreside processor before that observer has completed his or her sampling or data transmission duties.

(9) *Verify vessel USCG Safety Decal.* An observer provider must verify that a vessel has a valid USCG Safety Decal as required under §679.51(e)(1)(ii)(B)(1) before the vessel with an observer aboard may depart. One of the following acceptable means of verification must be used to verify the decal validity:

(i) An employee of the observer provider, including the observer, visually inspects the decal aboard the vessel and confirms that the decal is valid according to the decal date of issuance; or

(ii) The observer provider receives a hard copy of the USCG documentation of the decal issuance from the vessel owner or operator.

(10) *Provide 24 hours a day communications with observers.* An observer provider must have an employee responsible for observer activities on call 24 hours a day to handle emergencies involving an observer or problems concerning observer logistics, whenever an observer is at sea, stationed at a shoreside processor or stationary floating processor, in transit, or in port awaiting vessel or processor (re)assignment.

(11) *Provide information to the Observer Program Office.* An observer provider must provide all the following information to the Observer Program Office by electronic transmission (email), fax, or other method specified by NMFS within the specified timeframes.

(i) *Registration materials.* Observer training and briefing registration materials must be submitted to the Observer Program Office at least 5 business days prior to the beginning of a scheduled observer certification training or briefing session. Registration materials consist of the following:

(A) Observer training registration, including:

- (1) Date of requested training;
- (2) A list of observer candidates. The list must include each candidate's full name (*i.e.*, first, middle, and last names), date of birth, and gender;
- (3) A copy of each candidate's academic transcripts and resume; and
- (4) A statement signed by the candidate under penalty of perjury that discloses any criminal convictions of the candidate.

(B) Observer briefing registration, including:

- (1) Date and type of requested briefing session and briefing location; and
- (2) List of observers to attend the briefing session. Each observer's full name (first, middle, and last names) must be included.

(ii) *Statement of projected observer assignments.* Prior to the observer or observer candidate's completion of the training or briefing session, the observer provider must submit to the Observer Program Office a statement of projected observer assignments that includes the observer's name; vessel, shoreside processor, or stationary floating processor assignment, gear type, and vessel/processor code; port of embarkation; target species; and area of fishing.

(iii) *Physician's statement.* A signed and dated statement from a licensed physician that he or she has physically examined an observer or observer candidate. The statement must confirm that, based on the physical examination, the observer or observer candidate does not have any health problems or conditions that would jeopardize their individual safety or the safety of others while the observer or observer candidate is deployed, or prevent the observer or observer candidate from performing his or her duties satisfactorily. The statement must declare that, prior to the examination, the physician read the NMFS-prepared pamphlet provided to the candidate by the observer provider as specified in paragraph (b)(1)(ii) of this section and was made aware of the duties of the observer as well as the dangerous, remote, and rigorous nature of the work. The physician's statement must be submitted to the Observer Program Office prior to certification of an observer. The physical exam must have occurred during the 12 months prior to the observer's or observer candidate's deployment. The physician's statement will expire 12 months after the physical exam occurred. A new physical exam must be performed, and accompanying statement submitted, prior to any deployment occurring after the expiration of the statement.

(iv) *Observer deployment/logistics report.* A deployment/logistics report must be submitted by Wednesday, 4:30 p.m., Pacific local time, of each week with regard to each observer deployed by the observer provider during that week. The deployment/logistics report must include the observer's name, cruise number, current vessel, shoreside processor, or stationary floating processor assignment and vessel/processor code, embarkation date, and estimated or actual disembarkation dates. The report must include the location of any observer employed by the observer provider who is not assigned to a vessel, shoreside processor, or stationary floating processor.

(v) *Observer debriefing registration.* The observer provider must contact the Observer Program within 5 business days after the completion of an observer's deployment to schedule a date, time, and location for debriefing. Observer debriefing registration information must be provided at the time the debriefing is scheduled and must include the observer's name, cruise number, vessel, or shoreside or stationary floating processor assignment name(s) and code(s), and requested debriefing date.

(vi) *Certificates of insurance.* Copies of "certificates of insurance" that name the NMFS Observer Program leader as the "certificate holder" shall be submitted to the Observer Program Office by February 1 of each year. The certificates of insurance shall state that the insurance company will notify the certificate holder if insurance coverage is changed or canceled and verify the following coverage provisions:

- (A) Maritime Liability to cover "seamen's" claims under the Merchant Marine Act (Jones Act) and General Maritime Law (\$1 million minimum);

(B) Coverage under the U.S. Longshore and Harbor Workers' Compensation Act (\$1 million minimum);

(C) States Worker's Compensation, as required; and

(D) Commercial General Liability.

(vii) *Observer provider contracts.* Observer providers must submit to the Observer Program Office a completed and unaltered copy of each type of signed and valid contract (including all attachments, appendices, addendums, and exhibits incorporated into the contract) between the observer provider and those entities requiring observer services under §679.51(a)(2) and (b)(2), by February 1 of each year. Observer providers must also submit to the Observer Program Office upon request, a completed and unaltered copy of the current or most recent signed and valid contract (including all attachments, appendices, addendums, and exhibits incorporated into the contract and any agreements or policies with regard to observer compensation or salary levels) between the observer provider and the particular entity identified by the Observer Program or with specific observers. Said copies must be submitted to the Observer Program Office via fax or mail within 5 business days of the request for the contract at the address or fax number listed in §679.51(c)(3). Signed and valid contracts include the contracts an observer provider has with:

(A) Vessels required to have observer coverage as specified at §679.51(a)(2);

(B) Shoreside processors or stationary floating processors required to have observer coverage as specified at §679.51(b)(2); and

(C) Observers.

(viii) *Observer provider invoices.* A certified observer provider must submit to the Observer Program Office a copy of all invoices for observer coverage required or provided pursuant to §679.51(a)(2) and §679.51(b)(2).

(A) A copy of the invoices must be received by the Observer Program Office within 45 days of the date on the invoice and must include all reconciled and final charges.

(B) Invoices must contain the following information:

(1) Name of each catcher/processor, catcher vessel, mothership, stationary floating processor, or shoreside processing plant to which the invoice applies;

(2) Dates of service for each observer on each catcher/processor, catcher vessel, mothership, stationary floating processor, or shoreside processing plant. Dates billed that are not observer coverage days must be identified on the invoice;

(3) Rate charged in dollars per day (daily rate) for observer services;

(4) Total charge for observer services (number of days multiplied by daily rate);

(5) Amount charged for air transportation; and

(6) Amount charged by the provider for any other observer expenses, including but not limited to: Ground transportation, excess baggage, and lodging. Charges for these expenses must be separated and identified.

(ix) *Change in observer provider management and contact information.* Except for changes in ownership addressed under paragraph (a)(6) of this section, an observer provider must submit notification of any other change to the information submitted on the provider's permit application under paragraphs (a)(3)(i) through (iv) of this section. Within 30 days of the effective date of such change, the information must be submitted by fax or mail to the Observer Program Office at the address listed in §679.51(c)(3). Any information submitted under paragraphs (a)(3)(iii) or (a)(3)(iv) of this section will be subject to NMFS review and determinations under paragraphs (a)(4) through (7) of this section.

(x) *Other reports.* Reports of the following must be submitted in writing to the Observer Program Office by the observer provider via fax or email:

(A) Within 24 hours after the observer provider becomes aware of the following information:

(1) Any information regarding possible observer harassment;

(2) Any information regarding any action prohibited under §679.7(g) or §600.725(o), (t), and (u) of this chapter;

(3) Any concerns about vessel safety or marine casualty under 46 CFR 4.05-1(a)(1) through (7), or processor safety;

(4) Any observer illness or injury that prevents the observer from completing any of his or her duties described in the Observer Sampling Manual; and

(5) Any information, allegations or reports regarding observer conflict of interest or failure to abide by the standards of behavior described in §679.53(b)(1) through (b)(2), or;

(B) Within 72 hours after the observer provider determines that an observer violated the observer provider's conduct and behavior policy described at paragraph (b)(3)(i) of this section; these reports shall include the underlying facts and circumstances of the violation.

(12) *Replace lost or damaged gear.* An observer provider must replace all lost or damaged gear and equipment issued by NMFS to an observer under contract to that provider. All replacements must be in accordance with requirements and procedures identified in writing by the Observer Program Office.

(13) *Maintain confidentiality of information.* An observer provider must ensure that all records on individual observer performance received from NMFS under the routine use provision of the Privacy Act remain confidential and are not further released to anyone outside the employ of the observer provider company to whom the observer was contracted except with written permission of the observer.

(c) *Limitations on conflict of interest.* Observer providers:

(1) Are authorized to provide observer services under an FMP or the Halibut Act for the waters off Alaska as required in §679.51(a)(2) or (b)(2), or scientific data collector and observer services to support NMFS-approved scientific research activities, exempted educational activities, or exempted or experimental fishing as defined in §600.10 of this chapter.

(2) Must not have a direct financial interest, other than the provision of observer or scientific data collector services, in a North Pacific fishery managed under an FMP or the Halibut Act for the waters off Alaska, including, but not limited to:

(i) Any ownership, mortgage holder, or other secured interest in a vessel, shoreside processor or stationary floating processor facility involved in the catching or processing of fish,

(ii) Any business involved with selling supplies or services to any vessel, shoreside processor, or stationary floating processor participating in a fishery managed pursuant to an FMP or the Halibut Act in the waters off Alaska, or

(iii) Any business involved with purchasing raw or processed products from any vessel, shoreside processor, or stationary floating processor participating in a fishery managed pursuant to an FMP or the Halibut Act in the waters off Alaska.

(3) Must assign observers without regard to any preference by representatives of vessels, shoreside processors, or stationary floating processors other than when an observer will be deployed.

(4) Must not solicit or accept, directly or indirectly, any gratuity, gift, favor, entertainment, loan, or anything of monetary value from anyone who conducts fishing or fish processing activities that are regulated by NMFS, or who has interests that may be substantially affected by the performance or nonperformance of the official duties of the observer provider.

§679.53 Observer certification and responsibilities.

(a) Observer certification—

(1) *Applicability.* Observer certification authorizes an individual to fulfill duties for operations requiring full observer coverage per §679.51(a)(2) and (b)(2) as specified in writing by the NMFS Observer Program Office while under the employ of an observer provider permitted under §679.52(a) and according to certification endorsements as designated under paragraph (a)(5) of this section.

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(5) *Endorsements.* The following endorsements must be obtained, in addition to observer certification, in order for an observer to deploy as indicated.

(i) *Certification training endorsement.* A certification training endorsement signifies the successful completion of the training course required to obtain this endorsement. A certification training endorsement is required for any deployment as an observer in the Bering Sea and Aleutian Islands groundfish fisheries and the Gulf of Alaska groundfish fisheries or Halibut Act fisheries and will be granted with the initial issuance of an observer certification. This endorsement expires when the observer has not been deployed and performed sampling duties as required by the Observer Program for a period of time specified by the Observer Program after his or her most recent debriefing. In order to renew the endorsement, the observer must successfully retake the certification training. Observers will be notified of any changes to the endorsement expiration period prior to the effective date of the change.

(ii) *Annual general endorsement.* Each observer must obtain an annual general endorsement to their certification prior to his or her initial deployment within any calendar year subsequent to a calendar year in which a certification training endorsement is obtained. To obtain an annual general endorsement, an observer must successfully complete the annual briefing, as specified by the Observer Program. All briefing attendance, performance, and conduct standards required by the Observer Program must be met.

(iii) *Deployment endorsements.* Each observer who has completed an initial deployment after certification or annual briefing must receive a deployment endorsement to their certification prior to any subsequent deployments for the remainder of that year. An observer may obtain a deployment endorsement by successfully completing all pre-cruise briefing requirements. The type of briefing the observer must attend and successfully complete will be specified in writing by the Observer Program during the observer's most recent debriefing.

(iv) *Level 2 endorsements.* A certified observer may obtain a level 2 endorsement to their certification. A level 2 endorsement is required for purposes of performing observer duties aboard vessels or stationary floating processors or at shoreside processors participating in fisheries as prescribed in §679.51(a)(2)(vi)(A) through (E). A level 2 endorsement to an observer's certification may be obtained if the observer meets the following requirements:

(A) Previously served as an observer in the groundfish or halibut fisheries off Alaska and has completed at least 60 days of observer data collection;

(B) Received an evaluation by NMFS for his or her most recent deployment that indicated the observer's performance met Observer Program expectations standards for that deployment; and

(C) Complies with all the other requirements of this section.

(v) An observer who has obtained a level 2 endorsement to his or her observer certification as specified in paragraph (a)(5)(iv) of this section may additionally receive a "lead" level 2 observer endorsement if the observer meets the following requirements:

(A) A "lead" level 2 observer on a catcher/processor using trawl gear or a mothership must have completed two observer cruises (contracts) and sampled at least 100 hauls on a catcher/processor using trawl gear or on a mothership.

(B) A "lead" level 2 observer on a catcher vessel using trawl gear must have completed two observer cruises (contracts) and sampled at least 50 hauls on a catcher vessel using trawl gear.

(C) A "lead" level 2 observer on a vessel using nontrawl gear must have completed two observer cruises (contracts) of at least 10 days each and sampled at least 30 sets on a vessel using nontrawl gear.

(b) *Standards of observer conduct*

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(c) *Suspension and decertification*

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Subpart I—Equipment and Operational Requirements for the Longline Catcher/Processor Subsector

§679.100 Applicability.

The owner and operator of a vessel named on an LLP license with a Pacific cod catcher-processor hook-and-line endorsement for the Bering Sea, Aleutian Islands or both the Bering Sea and Aleutian Islands must comply with the requirements of this subpart.

(a) *Opt out selection.* Each year, the owner of a vessel subject to this subpart who does not intend to directed fish for Pacific cod in the BSAI or conduct groundfish CDQ fishing at any time during a year may, by November 1 of the year prior to fishing, submit to NMFS a completed notification form to opt out of directed fishing for Pacific cod in the BSAI and groundfish CDQ fishing in the upcoming year. The notification form is available on the NMFS Alaska Region Web site (<http://alaskafisheries.noaa.gov/>). Once the vessel owner has selected to opt out, the owner must ensure that the vessel is not used as a catcher/processor to conduct directed fishing for Pacific cod with hook-and-line gear in the BSAI or to conduct groundfish CDQ fishing during the specified year.

(b) *Monitoring option selection.* The owner of a vessel subject to this subpart that does not opt out under paragraph (a) of this section must submit a completed notification form for one of two monitoring options to NMFS. The notification form is available on the NMFS Alaska Region Web site (<http://alaskafisheries.noaa.gov/>). The vessel owner must comply with the selected monitoring option at all times when the vessel is operating in either the BSAI or GOA groundfish fisheries when directed fishing for Pacific cod is open in the BSAI, or while the vessel is groundfish CDQ fishing. If NMFS does not receive a notification to opt out or a notification for one of the two monitoring options, NMFS will assign that vessel to the increased observer coverage option under paragraph (b)(1) of this section until the notification form has been received by NMFS.

(1) *Increased observer coverage option.* Under this option, the vessel owner and operator must ensure that—

(i) The vessel is in compliance with observer coverage requirements described at §679.51(a)(2)(vi)(E)(1).

(ii) The vessel is in compliance with observer workload requirements described at §679.51(a)(2)(iii).

(iii) An observer sampling station meeting the requirements at §679.28(d) is available at all times, unless otherwise approved by NMFS.

(iv) All sets are made available for sampling by an observer.

(2) *Scales option.* Under this option—

(i) The vessel owner and operator must ensure that—

(A) The vessel is in compliance with observer coverage requirements described at §679.51(a)(2)(vi)(E)(2).

(B) All Pacific cod brought onboard the vessel is weighed on a NMFS-approved scale in compliance with the scale requirements at §679.28(b), and that each set is weighed and recorded separately.

(C) An observer sampling station meeting the requirements at §679.28(d) is available at all times, unless otherwise approved by NMFS.

(D) The vessel is in compliance with the video monitoring requirements described at §679.28(k).

(ii) NMFS will use the weight of all catch that passes over the scale for the purposes of accounting for Pacific cod catch.

(iii) At the time NMFS approves the scale used to weigh Pacific cod, NMFS will provide the vessel owner or operator with one of the following designations on the scale inspection report that will be used for catch accounting of Pacific cod for the duration of the approval period:

(A) *Scale prior to bleeding.* If the scale is located before the location where Pacific cod are bled, a PRR of 1.00 will be applied to all catch weighed on the motion-compensated scale.

(B) *Scale between bleeding and holding area.* If Pacific cod are bled before being weighed and prior to the bleeding holding area, a PRR of 0.99 will be applied to all catch weighed on the scale.

(C) *Scale after holding area.* If Pacific cod are bled and placed in a bleeding holding area before being weighed, a PRR of 0.98 will be applied to all catch weighed on the scale.

(c) *Electronic logbooks.* The operator of a vessel subject to paragraph (b) of this section at any time during a year must comply with the requirements for electronic logbooks at §679.5(f) at all times during that year.

[77 FR 59061, Sept. 26, 2012, as amended at 77 FR 70103, Nov. 21, 2012; 79 FR 68616, Nov. 18, 2014]

Appendix C. Chronology

Concerns about LL2 observer availability first arose during the development of the freezer longline monitoring requirements in 2011. On May 10, 2011, NMFS staff and industry representatives met for a workshop on freezer longline monitoring and enforcement in Seattle. NMFS sought to solicit input from owners and operators of freezer longliners engaged in the Pacific cod fisheries off Alaska about potential regulatory changes to equipment and operational requirements in order to enhance catch monitoring in the fleet. (76 *FR* 21705; April 18, 2011).

In October 2011, NMFS staff provided the Council with a preliminary draft of the RIR/EA for the action, and briefed the Council on the status of the regulatory proposals. The Council also received a letter, signed by representatives of each of the five observer companies, which described their concerns about their ability to meet the observer needs of the freezer longline fleet if each of the vessels was required to carry an observer with lead level 2 certification. The company representatives indicated that they would not be possible to provide enough lead level 2 observers to allow the fleet to fully harvest its quota. The letter pointed to the limited opportunities for accumulating necessary experience within the freezer longline fleet itself, if all or most of the vessels chose a scales option, as well as the limited opportunities within the catcher vessel fleet. (NMFS 2012)

Following the October Council meeting, NMFS staff reviewed the lead level 2 requirements, and proposed a relaxation in the lead level 2 experience requirement as a way of addressing observer industry concerns. NMFS proposed reducing the requirement for 60 sampled sets to 30 sampled sets and added a new section to the RIR to address the lead level 2 requirement in more detail and discuss the impacts. (NMFS 2012)

In 2012, NMFS modified equipment and operational requirements for freezer longline vessels named on a License Limitation Program (LLP) licenses endorsed to catch and process Pacific cod at sea with hook-and-line gear in the Bering Sea and Aleutian Islands Management Area (BSAI). These regulations require the vessel owners to select between two monitoring options: carry two observers so that all catch can be sampled, or carry one observer and use a motion-compensated scale to weigh Pacific cod before it is processed. Under both monitoring options, at least one observer must have the lead level 2 deployment endorsement. The rule also reduced the experience requirements for lead level 2 endorsed observers to address concerns raised by the observer providers about potential shortage of observers as a result of the new regulations (77 *FR* 59053, September 26, 2012).

In 2013, NMFS implemented the restructured funding and deployment systems of the Observer Program (77 *FR* 70062, November 21, 2012). Under the Observer Program, all vessels and processors in the groundfish and halibut fisheries off Alaska are placed into one of two categories: 1) the full observer coverage category, where vessels and processors obtain observer coverage by contracting directly with observer providers; and 2) the partial observer coverage category, where NMFS has the flexibility to deploy observers when and where they are needed, as described in the annual deployment plan that is developed by NMFS in consultation with the Council. NMFS funds observer deployment in the partial observer coverage category by assessing a 1.25 percent fee on the ex-vessel value of retained groundfish and halibut from vessels that are not in the full observer coverage category.

During the development of the FLCC M&E requirements, observer providers and FLCC representatives raised concerns about the necessity of the LL2 requirement and potential impacts on the availability of LL2 observers in the future. NMFS responded to the concerns raised in public testimony to the Council and in comments on the proposed rule by reevaluating the experience requirements for the LL2 fixed-gear endorsement and subsequently implementing reduced experience requirements in the final rule and by making adjustments in the Analysis. The changes in the Analysis did not alter conclusions or components of the final rule. NMFS stated “NMFS will continue to monitor the number of observers that become lead level 2 qualified in the fixed-gear fleet in the partial coverage category of the restructured Observer Program. NMFS could reconsider the monitoring requirements for the freezer longline fleet if there is a

future shortage of lead level 2 observers.” in response to comment 5 on the FLCC M&E proposed rule (77 FR 59053, September 26, 2012). This Analysis is summarized in Section 1.3 below.

In February 2014, full coverage observer providers again raised concerns about their ability to create new LL2 observers in the full coverage category. Three observer providers signed a letter to the council identifying the urgent need to evaluate the existing supply of LL2 observers and suggested pilot testing alternate experience requirements for observers deployed in the freezer longline fleet to avoid a shortage that would result in a vessel left stranded at the dock without a qualified observer available for deployment (Lake et. al, Jan 30, 2014). The OAC discussed the letter and proposal from the observer providers and noted that such a proposal would need to be implemented as a regulatory change and that this would not be a quick solution. The Committee recognized that if a lead level 2 observer is not available, the vessel experiences a hardship in that they would be unable to go fishing, and identified deploying a second inexperienced observer on some vessels as an interim solution. The OAC noted in their minutes that the Freezer longline sector is unwilling to take on this role, because of the cost (they have already made significant investments in flow scales in order to be able to take only one observer), and because of natural observer attrition, they would need to be training new observers in perpetuity.²⁰

In May 2014, full coverage observer provider, AOI, Inc. sent a letter to the Observer Program detailing the decreasing number of LL2 observers within the company, and informed the Observer Program that they were initiating efforts to deploy second observers on some vessels to increase the LL2 pool. In this letter, AOI emphasized that these efforts were an interim measure and that a long term fix was still needed. AOI also identified additional actions the Observer Program could take to ensure observers fairly accrue credit toward LL2 endorsement (Lake, May 28, 2014).

In June 2014, the OAC reviewed information provided in the Annual report about the availability of LL2 observers and requested additional detail about the number of newly certified LL2 observers in the partial coverage category since 2013.

In August 2014 a letter exchange between Coastal Villages and Saltwater Inc. identified a situation where a qualified LL2 observer was not available for deployment. The circumstances of the situation anticipated the vessel would need to cut their trip short by approximately 5-6 days to return to port to avoid the observer provider violating the 90 day deployment limit. This action was anticipated to shorten the trip for the vessel resulting in lost revenues.

In 2014, SWI, Inc. describes the events leading to the situation where an observer was not available for deployment on the F/V Lilli Ann and largely attributes this example of a shortage to the limited opportunities for observers to earn the LL2 endorsement in the full coverage category and the smaller than expected number of observers that have earned a LL2 endorsement in the partial coverage category. SWI noted that at the time, the state of their LL2 observer supply was at “critical depletion” and that they had begun to deploy second observers at “considerable cost to industry” (Hansen to Ken Tippet, August 21, 2014). Coastal Villages provided a response to this letter identifying the estimated cost of carrying a second observer as approximately \$10,000 per trip (approximately 30 days under normal fishing conditions) and requesting urgent relief for the shortage of LL2 observers and identifying the need for alternate methods to develop LL2 observers that would be less financially burdensome to the industry (Tippet, August 22, 2014).

In a letter to NMFS in late August, 2014 the FLC summarized the experiences of 3 vessels that experienced delays and projected anticipated changes to fishing plans in September 2014. The FLC requested that NMFS adopt a policy to not enforce the LL2 requirement for the Freezer longline fleet. The FLC asserted that the LL2 endorsement is not required for an observer to successfully collect high quality

²⁰ February 2014 OAC meeting minutes are available on the Council's Web page:
http://legistar2.granicus.com/npfmc/meetings/2014/2/876_A_North_Pacific_Council_14-02-03_Meeting_Agenda.pdf

data aboard the Freezer longline fleet and criticized the point made in the 2012 Analysis that the partial coverage category would provide new opportunities to create LL2 observers and urging that a shortage of LL2 observers is at a critical concern. The FLC described that members have deployed second observers in an effort to create more LL2 observers that may result in realized benefits in 2015, but does nothing to alleviate the immediate shortage and again identifying the need for a long term solution (See, August 28, 2014).

In September 2014, NMFS responded to the FLC by identifying a number of non-regulatory market-based solutions that could be implemented by observer providers and the Industry, referencing the Analysis prepared in 2012 and the response to comments published with the final rule and citing the Council's request in June 2014 for a discussion paper and for staff to identify regulatory and non-regulatory alternatives "to develop a sustainable, renewable and adequate pool of fixed-gear, lead level 2 observers." (NMFS, September 8, 2014).

Later in September, OAC recommended that a discussion paper about the LL2 issue be added as priority 14 on the list of observer Analytical priorities.²¹ OAC noted in their minutes that the shortage of LL2 observers experienced during the summer 2014 was due to the limited opportunities in the full coverage category for new inexperienced observers to gain the requisite experience to earn the LL2 endorsement. The OAC also provided some direction about what should be considered in a discussion paper to identify potential regulatory change to address the issue of LL2 observers. FLC stated that NMFS has a responsibility to solve the LL2 issue. The FLC further asserts that the LL2 requirement is not necessary because the boats have a flow scale and the data from a non-LL2 would be just as high quality. FLC supports cooperation with NMFS to further develop regulatory and non-regulatory solutions to reduce impacts on the freezer longline fleet.

In December 2014, the Council received a report from the FLC detailing topics discussed at a meeting between industry, observer providers, and the Observer Program. The letter detailed non-regulatory actions that all parties could take to improve the availability of LL2 observers in the short term, keeping in mind that a long term regulatory solution would still be needed. This letter and the actions taken by the three parties is discussed further in Section 3.3.4.

In June 2015, the OAC and the Council reviewed information provided by NMFS about the availability of LL2 observers in the 2014 Observer Program Annual Report.

In September 2015, NMFS presented the "Lead Level 2 Update" to the OAC recommended that regulatory solutions to the LL2 issue be evaluated and proposed that the "priority for regulatory options should be to address how to get observers the training they need for LL2 certification, rather than allowing inexperienced observers in the fleet." NOAA Office of Law Enforcement noted that experienced observers are more likely to be able to resolve conflicts, and are better able to recognize sample interference and resolve potential problems sooner than less experienced observers. This recommendation was accompanied by a wide range of regulatory options for consideration and included a non-regulatory option, to encourage AIS to become a permitted observer provider.

In October 2015, the Council passed a motion requesting staff update the discussion paper requested at the June 2014 meeting and address considerations for regulatory changes to alleviate the ongoing shortage of LL2 observers and listed a number of concepts and options. One of the recommendations included in the Council's October 2015 motion was to "[E]ncourage AIS to become a certified observer provider, and supply LL2 observers to FLC vessels." AIS, Inc. (AIS) is the observer provider contracted by NMFS to provide observer services in the partial observer coverage category.

²¹ OAC report is available on the Web under Agenda item C1
http://legistar2.granicus.com/npfmc/meetings/2014/10/894_A_North_Pacific_Council_14-10-06_Meeting_Agenda.pdf

In March 2016, AIS submitted an application to NMFS be permitted as a full coverage observer provider. NMFS and the Council received letters and testimony from other full coverage observer providers opposing AIS's application. At its June 2016 meeting, the Council passed a motion requesting that "NMFS postpone action on AIS's application to be a full coverage observer provider until getting input from the Council after they have received the October white paper on LL2 observer issues that will include looking at the impacts of an observer provider being in the partial and full coverage categories in terms of 1) confidential fishery information; 2) reimbursements by the Federal government; and 3) other unfair competitive advantages." For reasons explained in more detail in Attachment 1, on August 31, 2016, NMFS approved AIS's application to be a full coverage observer provider.

In October 2016, the Council reviewed a discussion paper examining six potential options to address the potential shortage for nontrawl LL2 observers. The Council requested staff prepare and Analysis examining the impacts of three of the options included in the discussion paper.

Appendix D. Observer Program Lead Level 2 Certification Policy



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
Alaska Fisheries Science Center
Fisheries Monitoring and Analysis Division
7600 Sand Point Way N.E.
Seattle, WA 98115-6349

February 3, 2015

To: All North Pacific Groundfish Observer Providers

From: Chris Rilling, Acting Director
Fisheries Monitoring and Analysis Division

Subject: Lead Level 2 Certification Policy

Effective mid-February 2015, FMA will institute a policy within the context of current regulations to credit observers for experience needed to achieve Lead Level 2 (LL2) certification on fixed gear vessels. The NMFS goal with the LL2 regulatory requirements is to ensure that observers deployed to LL2 assignments have the skills and abilities necessary to complete this job successfully which results in the collection of quality data.

Currently, an observer will achieve LL2 status by meeting these requirements as stipulated in the regulations (50 CFR §679.53):

- Successfully complete 60 days of observer data collection,
- Receive an evaluation by NMFS for the most recent deployment that indicates the observer's performance met Observer Program expectation standards for that deployment,
- Successfully complete 2 cruises of at least 10 days each, and
- Sample at least 30 sets of fixed gear.

Within the FMA policy, credit will be given for a sampled set if at least one sample on a haul is completed, *and* the LL2 trainee has completed the other responsibilities associated with the experience as outlined below:

- Provider must identify individuals intended to deploy as LL2 trainees before completion of any briefing or training; FMA must be notified prior to deployment to vessel,
- LL2 trainee must complete additional training as directed by FMA, in conjunction with the one-day or four-day briefing prior to deployment as a LL2 trainee,
- Successfully complete trip and haul level duties as defined in training (such as, but not limited to; designing sample frames, verifying total gear on vessel, completing hook counts, successfully managing the overall work load, and documenting their work in their log-book),
- The LL2 trainee will be responsible for all data collected during a deployment as a LL2 trainee, which will be presented in debriefing,

- LL2 trainee must successfully complete a midcruise prior to their first trip as the sole observer if LL2 status will be awarded during deployment,
- Attend a pre-cruise meeting with FMA staff prior to the first deployment as the sole LL2 observer, and
- To the extent possible, re-deploy new LL2 observers onto the same vessel that they achieved their needed experience on.

This policy will achieve the goal of ensuring that observers on LL2 assignments are fully prepared for the responsibilities required to collect quality data, while minimizing the cost and workload associated with achieving the requisite experience. The FMA Division plans to monitor how well this approach is working, and we reserve the right to modify the policy if this approach does not provide quality data.

Thank you for your support in this matter. Our experience is that the vast majority of the observers who work in Alaska do an excellent job, and our efforts are geared to helping them be prepared so they can be successful in the challenging longline sampling environment.

If you have any questions regarding, please contact myself at (206) 526-4194 or Gwynne Schnaittacher at (206) 526-4674.

CC: Elizabeth Chilton
Brian Mason
Gwynne Schnaittacher
Lisa Thompson

Appendix E. Observer Input

Below is the email notice sent to all certified North Pacific Observers from the Observer Program.

Observer Input Needed!

Hi All,

The [North Pacific Fisheries Management Council](#) (Council) staff, in conjunction with [North Pacific Observer Program](#) and [Alaska Region](#) staff, are currently working on the lead level 2 discussion paper. This discussion paper evaluates lead level 2 observer availability for deployment on the BSAI freezer longline fleet and will be presented at the [October Council](#) meeting in Anchorage, AK.

We are gathering first-hand observer accounts to be incorporated into this paper. Any insight from you pertaining to longline catcher processor deployments, the experience needed to work on these vessels, hours, workload, training, etc. would be greatly appreciated. Your observer input is vital to incorporating the observer perspective into the analysis of this subject as part of the Council process and fisheries management in Alaskan fisheries. Your name will be kept confidential and all input is intended for inclusion into the discussion paper.

If you are interested in any background information regarding this topic, please refer to the [June Council newsletter](#) and the [Final Rule](#) published in September 2012.

If you have any questions, contact [Gwynne Schnaittacher](#) regarding this subject.

Thanks!

FMA

Excerpts from Observers

In August 2016, an email from the Observer Program was sent to 480 certified North Pacific Observers requesting their input on freezer longline vessel deployments. In total, eleven observers responded. The following appendix provides the responses from the observers, their relative experience in the fishery by noting total number of deployment days, number of fixed gear vessels they worked on, and the number of sampled hauls. The observers' names have been removed for confidentiality reasons.

Observer A

Observer since 1999

1462 deployment days

8 fixed gear vessels with 350 sampled hauls

My experience has taught me that there is really no way you can prepare observers for being on their first longliner. The first trip or contract ends up being an eye-opening experience. Longlining epitomizes all of the difficulties of working on fishing vessels in Alaska. Constant exposure to cold/windy weather, long trips with little port time, ... working constantly with little sleep, the inability to establish a regular sleeping and eating routine (basic biological functions are irregular). Sampling-wise time management is key: in order to do the job effectively you need to be a good time manager. You need to be able to work up your samples, subsamples, length samples, specimen samples, and viability samples within a certain amount of time because you will either miss your next tally period or you won't. You don't have that kind of freedom (gray area) on trawlers as there is usually a bit of leeway to get the sample at a certain weight unit. On the flip side of the coin, observing on a longliner can be one of the most rewarding experiences you can have in Alaska. The challenge will make you a better observer and a better worker overall. You will feel as if you can conquer anything in life after a difficult longline contract. The skill set you will build is only part of that – it is the overall experience of it

There is no way you can prepare an observer for their first longliner but we can have a process that increases the chances of success for first time longliners. A successful first deployment will mean higher data quality overall and the likelihood that the observer will come back to longline again. I did not perform well on my first longline deployment and the experience stuck in my mind as something awful. I was fearful of being on the next two longliners many years later...

The value of having a good, experienced lead on your first longliner is that you have someone who can show you the practical necessities of doing the job, such as:

- Tools such as tally counters and the tally clipboard
- How to stay warm for potentially long periods of time on an unsheltered deck
- How to set up a sample frame
- When to do hook counts
- When to collect halibut viabilities and how

These are all items that get inexperienced and unprepared observers in trouble during their first assignment.

I really don't have any opinions as to what qualifications or experience level is needed. I like the idea of a preparatory booklet. I believe that should be given out to observers at any experience level.

Preparation is the key. Nothing is worse than getting on a longliner and not knowing what you are getting into. It takes a long time to adapt if you are unprepared. I also believe that any observer has the potential to do well on a longliner. I think if we were to increase the experience level needed to become Level 2 certified, we would be missing out on the opportunity to train some good leads. Experience doesn't mean better. Many observers get stuck in their ways and develop a hard to break preference for certain vessel types. An observer that has been around for a few years may look to longline opportunities mostly

because the money is pretty good. But I do think that an experienced observer can succeed on their first trip or contract without a lead.

What criteria should be used for determining that an experienced observer has that potential?

- Some combination of sea days and sampled hauls or different fishery types
- At least 3 successful contracts with no zero deployment scores
- Personality characteristics such as conscientiousness, good sense of humor, good temperament, etc. I don't want to give the impression that we should exclude those that do not display these characteristics, but I think it's a good idea to actively recruit them
- The ability to work independently on a drastically different vessel type
- the will or desire to do it

Give the booklet to them and see if they understand it and are willing to do a longliner. Give them the choice. For less experienced observers that fall below a certain combination of sea days and sampled hauls, they would be best working with an experienced observer. The combination of the booklet and the lead observer will serve as excellent resources for the job ahead. Other ideas may be a separate class for longliner certification. Maybe create a short online course for observers to take at their leisure. Create an announcement or flyer with a list of incentives that lists the benefits of longline observing. Any observer can take the course and when they fulfill the other criteria above they can be placed on a list as having the displayed potential for longline observing.

Observer B

Observer since 2013

595 deployment days

2 fixed gear vessels with 60 sampled hauls

It's pretty clear that the impetus for the original change was solely financially driven, without even a minimum of forethought as to where new leads will come from. The CP trawl fleet has no issues with lead observers, every single haul is sampled, AND a flow scale is used, creating a very robust, high-quality data set that provides tremendously valuable information to regulatory interests as well as industry interests. CP longliners rely upon a single observer, often overworked, to sample ~60% of hauls. The data set taken from these vessels is still of high-quality, due to the excellent work observers do, but how industry officials can look at 40% of hauls going unsampled as a good thing for their bottom line, is mystifying to me. In addition to this, the requirements for becoming a lead fixed gear observer are very low compared to the trawl fleet, another concession they enjoy. More experienced observers is better for observers, better for the industry, and better for the regulatory agencies.

It seems to me a higher-quality data set AND a complete solution to the lead level 2 issue can easily be obtained by mandating ALL CP vessels, fixed gear or otherwise, be required to have both a flow scale and 2 observers (even better, make 100 hauls the requirement for all lead certifications). Why the longliners and pot boats get a "free pass" is beyond me. I for one, believe that lead level 2 observers are being taken advantage of by the fishing fleet AND our contractors. I enjoy the value that I provide for the observer program due to my experience, but it's clear to me that the reason why this sensible rule is not already in place is the longline fleet dragging their feet to avoid further regulation (no matter how sensible it is) and to save a few hundred bucks a day in one of the most valuable fisheries in the entire world.

Observer C

Observer since 2010

759 deployment days

5 fixed gear vessels and 555 sampled hauls

I believe that it is crucial to have a lead level 2 certification while onboard longline vessels. My first boat was onboard a CP longline vessel. Being new and dealing with the work load, collecting accurate data,

and the elements is stressful. Now having most of my sea days spent onboard these types of vessels among all vessel types, I can say that it is the most difficult to deal with. You cannot rely on basic flow scale numbers, as present on M/V and CP vessels targeting pollock. You have to think on your toes and be able to incorporate stratification of the catch which in my opinion is better left with someone with more experience that can see the bigger picture. Not saying that observers cannot understand the basic concept but actually collecting this data correctly while being new is not easy unless you are hard-working, passionate, and really want to do a good job. To add on to that, is the addition of the flow scale. It would never be advised to have two new people on amendment 91 vessels, for the basic fact that the quota is so crucial per boat. I believe this should be the same standard for the longline fleet and that being said I believe that there should be someone onboard who understands the FS. Most lead level 2 observers have dealt with flow scales and when dealing with fishing industry personal that haven't had much experience with this aspect can be an easier process, making things run more smoothly.

Observer D

Observer since 2006

1739 deployment days

19 fixed gear vessels with 853 sampled hauls.

I think if an observer has been on a trawler and is lead certified then they should be able to work on longliners with maybe a 1-2 day that is only about sampling on a longliner. I would love it to go to two observers per vessel. I have not sampled with the new RNT though so I cannot comment on that. Not a one day with getting gear just a day with sample requirements for longliners only then have each new longline observer do a mid-season after first trip. I started when a new observer got on longliners first.

Observer E

Observer Since 2008

476 deployment days

4 fixed gear vessels with 212 sampled hauls

I have been working in the North Pacific program off and on over the last eight years. I started observing before the longline lead certification was required. The first boat I ever worked on was a longliner. It was tough work back then, but it was nice to have the entire observer community to share the workload. Now that we have the longline lead requirement, you are almost obligated to work entirely in longlining. Some of my favorite boats have been longliners, but many can be horror stories of long hours for long periods of time. The system is broken in the sense that given the high matriculation rate, it is hard to get new observers trained to work longliners. The work load can vary, but generally it will always be more than any other gear type. If the boat is setting either really small or large sets, it can be almost impossible to keep up. I have worked a boat that had 70 plus mag sets that take 18 hours to complete. So every day of fishing, you may only be getting about 6 hours of sleep a night while they are setting the next set. Sometimes you may require some of that time off to finish paperwork. I have also had similar problems with boats that set really small sets that only take about 5 or 6 hours. You generally only get one set off at a time if you are keeping up with the random sample table, so you will only get short periods off to sleep. I have personally had really tough times with erratic sleep cycles for varying periods of time. We have the random break table, but it is really difficult to establish a circadian rhythm when you are sleeping at different times of day. I have had my immune system crash and stayed sick for over a month with a chronic cough that has additionally exacerbated my lack of sleep. Couple sleep deprivation with the general physicality of tallying aboard the weather deck of a longliner, and this has the potential to be very dangerous. Studies have shown prolonged sleep deprivation can impair individuals to a point similar to having a blood alcohol concentration (BAC) of 0.1, which is over the legal limit for operating a motor vehicle. With the exception of the role man and maybe a pole gaffer, we are the only people required to be exposed to the elements. In cases of extreme weather, we can take a haul off, but there are no clear criteria and up to the discretion of the observer and officers. We are required to transmit data daily, but

this can sometime be difficult if you are not adhering to a traditional 24 hour day. This mental and physical fatigue has also been a detriment to my data in some instances. I was grandfathered into the lead certification without having to do a trip on a longliner with a lead. Many of us don't have a choice in whether or not we want to longline, and many times it seems unfair when so much more is required of us with no additional compensation from most of the contractor companies. Changing the sampling protocol or requiring two observers like other gear types would alleviate many of these problems. Prioritizing observers' health and wellness should be pivotal in proper data collection.

Observer F

Observer since 2012

791 deployment days

7 fixed gear vessels with 437 sampled hauls

I was lucky that before my first longliner I had a one day briefing where I was the only person with the trainer and was able to go over my job duties step by step. Although, I ended up being overwhelmed once I was on the vessel and sampling. This was also before the new sampling tables were created. I was sleeping whenever I had a chance and falling behind on my data entry into ATLAS. There were a few days where something in the factory had broken down and I was still needing to sample once they started again and I was awake for almost 24 hours with an hour nap here and there. The crew would usually forget to wake me up so I had to wake myself up to check on their progress or just stay up. I could tell that my mental acuity was not doing well on those days. I was just trying to get through 30 days without physically and mentally crashing. With the new sample tables, I think that longliners are easier to work than my first experiences. I don't feel as stressed out about the work load, and I have the mental preparedness for the long trips.

I think it's great to have 2 observers on a vessel because you're only working a 12 hour shift so the newer observer can ease into the role, and you have someone to check your work with. On the flip side, I also see how this is frustrating for the observers and the contractors. Some companies have more vessels willing to take, or have space for, 2 observers. Personally, as a lead longline observer there is the pressure to only do longline contracts and not work other vessel types. When most vessels do month long trips it is tiring, and mentally stressful not communicating with family and friends.

One thing that I have been confused about is whether pot vessel should also be a way to train observers for longliners. The sampling frames are set up the same which makes sense since they are both fixed gear, but I heard it had to do more with the flow scale, which I don't understand. It was not my duty to watch the flow scale tests on the pot vessel I was assigned. I gained my experience with flow scales on Amendment 80 CPs and Amendment 91 CPs. I've had vessel try tell me what is and isn't acceptable for flowscale test and if I was new I might actually believe them.

Observer G

Observer since 2010

553 deployment days

2 fixed gear vessels with 84 sampled hauls

Whenever observers start sharing their longline stories it automatically means that you are in a different league than most observers could ever understand. The majority of longliners involve much more work and are exhausting both physically and mentally compared to any of the other gear types that observers can be put on. ... There is so much work that goes into being on a longliner; between the random sample schedule, tallying, actually sampling, halibut viabilities, hook counts, entering data in the computers, error reports, and the flow scale test, you don't have much time left in the day to sleep especially on boats that do more than 3 hauls in a day. I think it is absolutely ridiculous that observers who are on catcher boats are getting paid the same as an observer on a longliner if they have the same amount of sea days. I personally think that if you are on a longliner by yourself then you should be paid appropriately.

I think that if the longliner has the space they should have 2 observers on board because there is more than enough work for them both. Also every other boat that is a factory boat has two observers so why is longlining special and not required to have two? Especially when there is double the work compared to being on a pollock or flatfish factory boat. I have been on all gear types except for a pot boat, and longline is by far the hardest of all the gear types. I think that requiring someone to train you on that particular gear type is a great idea and that being on a pot boat will certify you is not a good idea. Nothing can prepare you for being on a longliner except for actually being put on one and trained by someone who has done it before and received a one from their debriefer.

Observer H

Observer since 2012

410 deployment days

4 fixed gear vessels with 312 sampled hauls

As a longline guy who got thrown on one straight out of training before the regulations had changed saying that they needed to be accompanied by a lead I can easily say the work load was overwhelming... with trying to both remember all the things I should be doing along with trying to ID things I had only seen in a lab plus trying to sample. I felt so overwhelmed and confused most days. After the my mid cruise ... I had finally learned just how much work I was doing extra in the wrong areas and how little I was doing in the right areas. I had 19 pages of errors, was behind by 48 haul entries and my daily notes were more scribble than legible both due to my hand writing and the 16-24 hour days with 4-5 hours of broken sleep over the course of the first month. After ...straightened me out along with my in season telling me to use the RBT to catch up on haul entries and such it became much much easier but that was after I had a little more experience seeing how fast the line moved and generally what types of fish I would be seeing.

I strongly would recommend keeping the regulation in place that forces contractors to not put fresh faces on long liners straight out of training... I enjoy being on a long liner however because I get a lot more fresh air than factory boats or catcher vessels I also enjoy long lining as the crews seem closer and much more friendly. My CP trawlers have had friendly people but they are usually full of such large crews that you can't really meet and know everyone unless you get on a few of the smaller such ships which I haven't really had the pleasure of being assigned to. Also, the long liners I have been assigned to have all had very good food. I don't know if that is really common but I can't imagine why it wouldn't be. The fisherman that are on said ships are out for far longer trips than trawlers and as such their nutrition and caloric intake should be that much better in quality.

Observer I

Observer since 1995

3694 deployment days

47 fixed gear vessels with 2259 sampled hauls

The problems with the random sample table (RST) and random break table (RBT) are trying to sleep randomly and long hours between breaks. I have kept close track of the number of hours I worked each day on my last 2, ninety day longline assignments. Both of these assignments, I used just the RST. My feelings are that it is not the number of hours worked in a day that is more difficult but, it is the lack of quality sleep. There are days that I find myself up 22, 24, 26, or 29 hours which is absurd. A normal person would require 2-3 days to recover from such overtime work. But, I then have lots of days where I only work 12 hours but sleep randomly. This all adds up in a person and is why I do not want to work a turn-and-burn. I need time to recover or I might become a zombie and develop a craving for human brains. I would suggest not to allow 2 consecutive 90 day longline assignments and not to allow more than 6 months of work on a longliner in a year. This is due to the random sleeping. I did hear of an

observer who regularly does turn and burns on longliners all year long. However, it is my belief that this observer avoids the RST and RBT to sleep normal hours.

Observer J

Observer since 2014

5 fixed gear vessels with 212 sampled hauls

From my perspective, the hours and workload become a huge issue on some boats more than others. Getting all your work done (sampling, hook counts, AND paper work) and getting enough rest where you aren't dangerously tired is often difficult on many vessels. While this issue has been fixed for vessels that set huge sets that take all day to haul, boats that tend to set smaller sets of 20 mags or less are not as well addressed. NMFS encourages the use of the RST and RBT together. However, that still leaves us with time issues. Sure, I get 8 hours off sometimes, maybe even more, if I use both but I still am staying up over 24hrs on some of these smaller vessels even with my larger break and using both tables. By the time you're up for 36hrs a day, 30 days in a row, and then getting 8-12 hr breaks, I still find myself making potentially dangerous mistakes. I would love to see sample tables more conducive to these boats that end up working those hours that burn you out fast. A find 6-8hr breaks sufficient but not when you're still having to stay up past 24 hrs before that break occurs. I know this happens to me and to many of my coworkers, working hours that far outweigh our ability to recoup properly. The 30 hauls with a lead I still think is a great methodology of training. However, using pot vessels to train people to longline often leave huge points of interest unaddressed. There are different levels of importance for certain tasks for pot vessels versus longliners and I think many fixed gear certified people miss out on important things you should know when they are certified on a pot vessel and then go out longlining alone, never having had the helpful guide of a lead who knows their way around longlining. Important data and tasks are left to the wayside or potentially they are working in a harder not smarter method because they have never had a partner to show them how things are done. They have a manual and hearsay from others instead, which creates dissonance. Certification with a lead is important, and I think using pot vessels to certify leaves a lot to be desired often times. That is not to say they are useless for certification, just the manner in which they are currently used for certifying people for fixed gear could be improved upon greatly. I also am an advocate for having two observers per longliner. Having a partner to hook count with you (especially on boats where you could be doing 16 mag counts twice a week), keeping up with paper work, sampling all the hauls with 12hr shifts and not just a portion of them, and just having someone to back you up ..., would go an exceptionally long way in managing the cod fisheries and improving the observer work environment and morale. ... While it is not an impossible or inconceivable task going it alone, having a second person to aid you would go an exceptionally long way in improving morale and encouraging more observers to not be so disinclined to longline. I hope some of this is helpful perspective from the observer side of things.

Observer K

Observer since 1997

3216 deployment days

11 fixed gear vessels with 542 sampled hauls

First, there is no shortage of LL lead certified people. Industry, contractors need to make it more desirable for us to do this grueling assignment. It seems that observers fresh out of the three week training are being deployed to Factory LL as a second to get their 30 hauls so they can get their LL certification. That is ridiculous. They have accomplished nothing independent and are evaluated solely on the leads work. Someone who has no experience with a random sample design, no experience with the fish id problems inherent of a LL. (I still get questioned about my halibut id out here). If NMFS is concerned with getting quality data I think the minimum requirements should be 2 contracts (100+ days minimum) with a NMFS Met Expectations. The prospective LL trainee should have a good grasp of random sampling, and species id. I guess the 30 hauls would be sufficient as long as the observer did all the work.