**PUBLIC REVIEW DRAFT**

**Regulatory Impact Review**
**for Proposed Regulatory Amendment**
**to**

# Address the potential for a shortage of nontrawl lead level 2 observers

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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 fisheries of the Bering Sea and Aleutian Islands (BSAI) and Gulf of Alaska and pot catcher/processors participating in the Western Alaska Community Development Quota (CDQ). Freezer longline vessels subject to monitoring requirements defined at 50 CFR 679.100 and operating under the scales option are required to have one LL2 endorsed observer on board at all times when the Pacific cod fishery is open in the BSAI. Pot catcher/processors are required to have one LL2 observer while groundfish CDQ fishing. Vessel owners and observer coverage providers have reported ongoing shortages of LL2 observers that delay fishing trips and increase costs to provide observers the opportunity to gain experience needed to qualify as an LL2 observer. This RIR analyzes alternatives that would allow regulatory exceptions, create additional opportunities for observers to gain the necessary experience, or create alternate observer coverage requirements that would allow a vessel to conduct fishing activity without an LL2 observer on board.

# List of Acronyms and Abbreviations

| | |
|---|---|
| ADP | Annual Deployment Plan |
| AFA | American Fisheries Act |
| AFSC | Alaska Fisheries Science Center |
| AIS | A.I.S., Inc. |
| AKD | Alaska Division |
| AKFIN | Alaska Fisheries Information Network |
| AKRO | Alaska Regional Office |
| BSAI | Bering Sea and Aleutian Islands |
| BSAI FMP | Fishery Management Plan for Groundfish of the Bering Sea and Aleutian Islands Management Area |
| CAS | Catch Accounting System |
| CDQ | Community Development Quota |
| 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 |
| FLC | Freezer Longline Coalition |
| FLCC | Freezer Longline Conservation Cooperative |
| FMA | Fisheries Monitoring and Analysis |
| FMP | fishery management plan |
| FR | *Federal Register* |
| ft | foot or feet |
| GOA | Gulf of Alaska |
| GOA FMP | Fishery Management Plan for Groundfish of the Gulf of Alaska |
| ID | Identification |
| IRFA | Initial Regulatory Flexibility Analysis |

| | |
|---|---|
| ITAC | Initial total allowable catch |
| LLP | license limitation program |
| LL2 | lead level 2 |
| L2 | level 2 |
| LOA | length overall |
| Magnuson-Stevens Act | Magnuson-Stevens Fishery Conservation and Management Act |
| NEFOP | Northeast Fisheries Observer Program |
| NMFS | National Marine Fishery Service |
| NOAA | National Oceanic and Atmospheric Administration |
| NOP | National Observer Program |
| NPFMC | North Pacific Fishery Management Council |
| OAC | Observer Advisory Committee |
| Observer Program | North Pacific Groundfish and Halibut Observer Program or North Pacific Observer Program |
| OLE | Office for Law Enforcement |
| OST | Office of Science and Technology |
| PSC | prohibited species catch |
| PPA | Preliminary preferred alternative |
| RFA | Regulatory Flexibility Act |
| RIR | Regulatory Impact Review |
| Secretary | Secretary of Commerce |
| SFD | Sustainable Fisheries Division |
| TAC | total allowable catch |
| U.S. | United States |
| U.S.C. | United States Code |
| USCG | United States Coast Guard |

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# Executive Summary

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 fisheries of the Bering Sea and Aleutian Islands (BSAI) and Gulf of Alaska and pot catcher/processors participating in the Western Alaska Community Development Quota (CDQ). Freezer longline vessels subject to monitoring requirements defined at 50 CFR 679.100 and operating under the scales option are required to have one LL2 endorsed observer on board at all times when the Pacific cod fishery is open in the BSAI. Vessel owners and observer coverage providers have reported ongoing shortages of LL2 observers that delay fishing trips and increase costs to provide observers the opportunity to gain experience needed to qualify as an LL2 observer. This RIR analyzes alternatives that would allow regulatory exceptions, create additional opportunities for observers to gain the necessary experience, or create alternate observer coverage requirements that would allow a vessel to conduct fishing activity without an LL2 observer on board.

## Purpose and Need

The Council adopted the following purpose and need statement at its April 2017 meeting:

> *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, 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.*

## Alternatives

The Council identified the following action alternatives in April 2017 which it will weigh against the "no action" alternative in making a final recommendation. In April 2017, the Council also identified Alternative 3, Option 2 as the preliminary preferred alternative. The Council had previously reviewed a discussion paper in October 2016 along with input from NMFS, the OAC, and members of the public. All Council motions relative to the LL2 issue are included in Appendix A.

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. The substitute observer must have an LL2 endorsement for a CP using trawl gear.

**Alternative 3: Observer Options. Modify the nontrawl LL2 observer coverage requirement. Require vessel owners to participate in a pre-cruise meeting if requested to do so by NMFS. (*Preliminary preferred alternative*)**

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. Both observers must have a level 2 endorsement.

**Option 3.2: Modify the nontrawl LL2 endorsement to allow sampling experience on trawl CPs to count toward nontrawl LL2 endorsement with an additional training requirement. (*Preliminary preferred alternative*)**

The PPA applies to both freezer longliners and pot CPs required to carry a nontrawl LL2 observer. If the Council selects any alternative other than the PPA as a final preferred alternative, it should consider whether to also apply the alternative to pot CPs while groundfish CDQ fishing.

## Summary of 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.

The sections of this analysis addressing the impact on vessel owners primarily focus on the freezer longline fleet selecting the scales option. As noted particularly under Alternative 3, Option 3.2, only one freezer longliner has selected the increased observer coverage option, and a small number of CPs using pot gear to harvest groundfish CDQ also are required to carry a nontrawl LL2 observer and could be impacted by this action.

Under Alternative 1, the No-action Alternative, there are limited avenues for observers to gain experience on nontrawl vessels to become qualified to deploy as a nontrawl LL2 observer which has created additional costs for observer providers and vessels due to the potential for a shortage of nontrawl LL2 observers To reduce the potential for a shortage of nontrawl LL2 observers, some freezer longline vessels have carried a second observer to increase the pool of qualified LL2 observers (see Table 16). Nontrawl LL2 observers collect very high quality data under the existing regulatory structure. Overall, among the alternatives, the status quo does not provide the maximum net benefits to the Nation because some vessel owners are incurring additional costs to carry a second observer on some trips to provide observers with the experience needed to qualify for a nontrawl LL2 endorsement, thereby increasing the supply of nontrawl LL2 observers.

Alternative 2 would be administratively burdensome to determine on a case by case basis if an exception should be approved to allow a trawl LL2 observer to deploy if a nontrawl LL2 observer is not available. It is unclear if this administrative process could be designed is such a way to eliminate the possibility of a vessel being delayed at the dock or to ensure that costs to vessels and observer providers would be reduced relative to the status quo. Data quality and observer health and safety would be negatively impacted but the magnitude of that impact would depend on the frequency which a trawl LL2 observer is

deployed instead of a nontrawl LL2 observer. In April 2017, the SSC recommended that under Alternative 2, a trawl LL2 observer should receive the same nontrawl LL2 training described in Alternative 3, Option 3.2 to reduce the negative impacts on data quality and observer health and safety. When Alternative 2 is weighed in terms of balancing the negative impacts on observer health and safety, data quality and NMFS administrative costs with the relative uncertainty of benefits to industry to reduce costs and the potential for a shortage of nontrawl LL2 observers, one could conclude that the costs of Alternative 2 do not outweigh the benefits when considering the net benefits to the nation as a whole.

Both options under Alternative 3 would increase the pool of observers qualified to deploy on freezer longline vessels thereby reducing the potential for a shortage of observers for deployment on freezer longline vessels. Both options would also maintain high data quality and observer health and safety. And under either option selected, Alternative 3 would require pot CPs groundfish CDQ fishing and freezer longline vessels to participate in a pre-cruise meeting if notified to do so by NMFS.

The differences between the two options under Alternative 3 impact the costs to both industry and NMFS. Option 3.1 would allow deployment of two level 2 observers instead of one LL2 observer, still requiring vessels to pay for two observers, but on an as needed basis rather than proactively estimating how many second observers to deploy, so this option could reduce costs somewhat. Option 3.2 (Council's preliminary preferred alternative) would modify the experience and training requirements necessary for an observer to gain the nontrawl LL2 endorsement.

Alternative 3 Option 3.2 would result in the largest reduction of industry costs relative to the other alternatives considered because this option results in the largest increase in observer availability while still only requiring the deployment of one observer when a nontrawl LL2 observer is required. Option 3.2 would increase NMFS administrative costs more than Option 3.1 because NMFS would provide additional training to observers without prior experience on nontrawl CPs under Option 3.2.

The Council's purpose and need statement prioritizes reducing the potential for a shortage of LL2 observers for deployment on freezer longline vessels while maintaining data quality and reducing costs. Both options under Alternative 3, would reduce the potential shortage of nontrawl LL2 observers while also lowering costs. Option 3.2 applies more generally to all vessels with a nontrawl LL2 observer requirement, reducing the potential for a shortage of nontrawl LL2 observers equally for pot CPs and all freezer longline vessels, including the vessel selecting the increased observer coverage option.

As shown in Table 18, Alternative 3.2, the PPA, likely has a greater net benefit to the nation as it results in no decrease in observer health and safety and data quality relative to the status quo, but likely would provide the same benefits in terms of increase in observer availability and some additional benefits relative to the other action alternatives. Specifically, the PPA likely would increase observer availability, as would Alternative 3, and may reduce costs to industry more than the other alternatives. Although the PPA may slightly increase administrative costs to NMFS, this increase in administrative costs is not as great as Alternative 2. Overall, NMFS believes that the benefits of the PPA outweigh the increases in administrative costs.

# 1 Introduction

This document is a Regulatory Impact Review (RIR).[1] An RIR provides assessments of the economic benefits and costs of the action alternatives, as well as their distribution. This RIR addresses the statutory requirements of the Magnuson Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) and Presidential Executive Order (E.O.) 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 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) and Alaska and pot catcher/processors participating in the Western Alaska Community Development Quota (CDQ). Freezer longline vessels subject to monitoring requirements defined at 50 CFR 679.100 and operating under the scales option are required to have one LL2 endorsed observer on board at all times when the Pacific cod fishery is open in the BSAI. Vessel owners and observer coverage providers have reported ongoing shortages of LL2 observers that delay fishing trips and increase costs to provide observers the opportunity to gain experience needed to qualify as an LL2 observer. This RIR analyzes alternatives that would allow regulatory exceptions, create additional opportunities for observers to gain the necessary experience, or create alternate observer coverage requirements that would allow a vessel to conduct fishing activity without an LL2 observer on board.

Throughout this RIR, catcher/processor vessels (C/Ps) named on License Limitation Program (LLP) licenses with a Pacific cod catcher/processor hook-and-line endorsement for the Bering Sea, Aleutian Islands, or both Bering Sea and Aleutian Islands are referred to as ‘‘freezer longliners.’’ These vessels are also defined as the ‘‘longline catcher processor subsector’’ in the 2005 Consolidated Appropriations Act (Pub. L. 108–447).

The preparation of an RIR is required under 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:

[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. As such, it is categorically excluded from the need to prepare an Environmental Assessment.

- 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;
- 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 the following purpose and need statement at its April 2017 meeting:

> *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, pot catcher/processors participating in the groundfish CDQ fisheries also are required to carry a nontrawl LL2 observer.*
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>
> *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 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 Fishery Management Plan for Groundfish of the Bering Sea and Aleutian Islands management area (BSAI FMP) and the Fishery Management Plan for Groundfish of the Gulf of Alaska (GOA FMP). The Observer Program is authorized by Sections 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 FMPs. Therefore, none of the proposed alternatives would require an amendment to the FMPs. Depending on the alternative selected, the proposed action could amend Federal regulations at 50 CFR 679.

## 1.3 Description of Management Area

This action would affect the owners of longline CPs participating in the groundfish fisheries in the BSAI and GOA (Figure 1), and the owners of pot CPs participating in the Western Alaska CDQ fisheries in the BSAI.

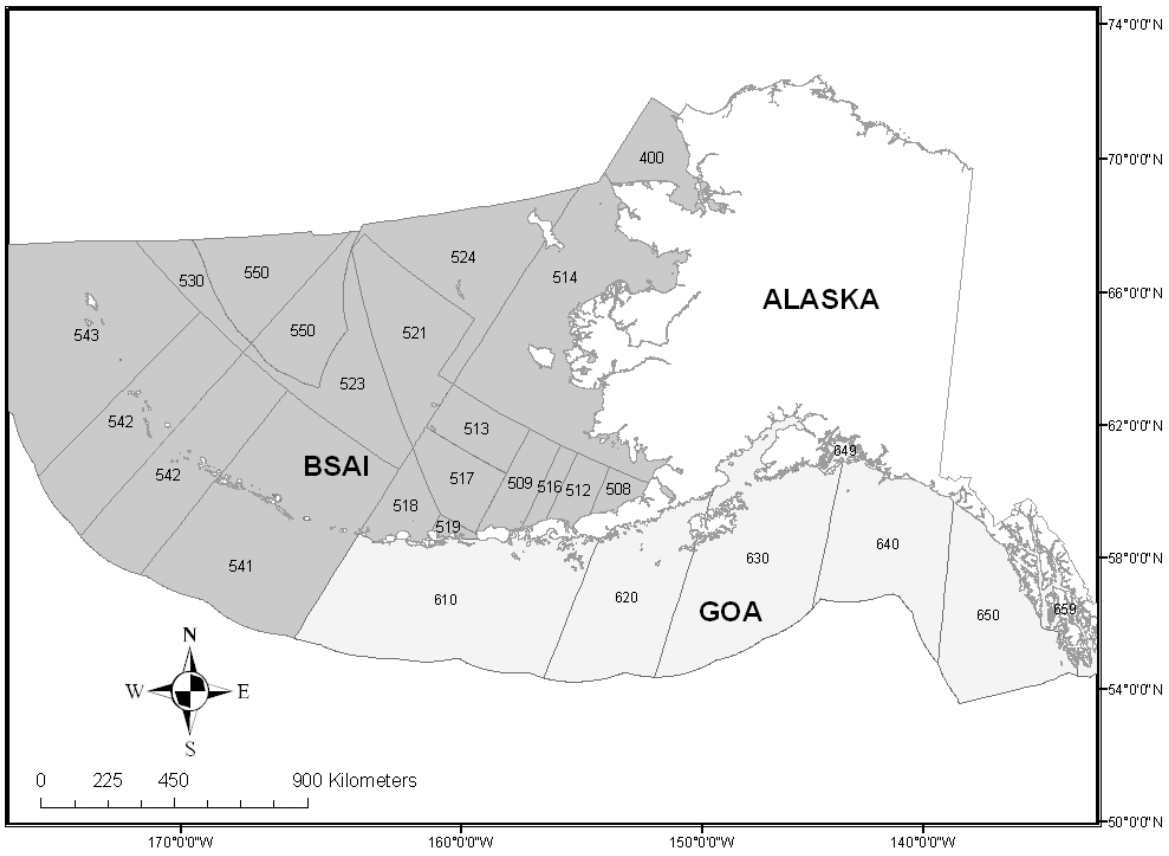



**Figure 1 Regulatory and reporting areas in the Bering Sea, Aleutian Islands, and Gulf of Alaska**

## 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 the 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 Conservation Cooperative, a voluntary freezer longline 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 Program (72 FR 52668, September 14, 2007); the Central GOA Rockfish Pilot Program (71 FR 67210, November 20, 2006); and its successor the Central Gulf of Alaska Rockfish Program (76 FR 81248, December 27, 2011).[2] The minimum number of observers required and the deployment endorsements required for vessels are summarized in Table 1.

According to 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.

[2] The Halibut and Sablefish Individual Fishing Quota Program does not include transferrable PSC limits that would necessitate vessel level accountability for discards at sea. The Rockfish Program adopted existing LL2 requirements, so the rule cited does not reference the LL2 requirement.

**Table 1** **Number of observers and deployment endorsement requirements for commercial fishing vessels.[3]**
These requirements apply to vessels in full coverage at all times when fish are being harvested or processed and for vessels in the partial coverage on selected fishing trips. The darker shades 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[4] | Groundfish CDQ – delivery of unsorted codends | | LL2 L2 |
| | Trawl CPs & Motherships | Pollock CDQ<br>Groundfish CDQ<br>BSAI Pollock<br>Amendment 80 vessels in BSAI<br>Central GOA Rockfish Program | | LL2 |
| | Hook-and-line CP[5] | BSAI Pacific cod<br>Groundfish CDQ | Increased observer coverage option | LL2 |
| | | | Scales option | LL2 |
| | Pot CP | Groundfish CDQ | | LL2 |
| | CP & mothership<br>All gear types | All other fisheries (including hook-and-line CPs that "opt out" of the BSAI Pacific cod fishery) | | |
| | Trawl CV | Groundfish CDQ<br>BS Pollock<br>Central GOA Rockfish Program | | |
| | Hook-and-line CV | 46' LOA CDQ Groundfish | | |
| Partial Coverage[6] | Hook-and-line CP | Small CPs, except full coverage | | |
| | CV ≤ 46' LOA | Groundfish CDQ fishing | | |
| | CV ≥ 40' LOA | All other fisheries except full coverage | | |
| | CV < 40' LOA[7] | All fisheries | | |
| | EM Selection pool | | | |

= certified observer  L2 = level 2  LL2 = lead level 2  = electronic monitoring

[3] Information in this table is summarized. Observer coverage requirements are detailed at 50 CFR 679.51.
[4] The requirement for two level 2 observers for motherships in the CDQ fisheries was implemented in 1998. Few CPs operated as motherships receiving unsorted codends from catcher vessels in the non-pollock CDQ fisheries until 2012. NMFS intends to initiate rulemaking to revise this requirement for operational consistency with observer coverage requirements for Amendment 80 vessels and the regulation of harvest provisions of the Magnuson-Stevens Act.
[5] Freezer longline vessels subject to monitoring requirements at 50 CFR 679.100.
[6] 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).
[7] CVs < 40 ft length overall (LOA) have been in the no 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<br>Initial observer training |
| Level 2 | Observer certification<br>60 data collection days as an observer in the North Pacific fisheries<br>Met expectation on last cruise |
| Lead Level 2 nontrawl gear | Level 2 endorsement<br>2 cruises (contracts)—at least 10 days each<br>30 sampled sets on a vessel using non-trawl gear |
| CP Lead Level 2[8] trawl gear | Level 2 endorsement<br>2 cruises (contracts)<br>100 sampled hauls on a CP using trawl gear or a mothership |
| CV Lead Level 2 trawl gear | Level 2 endorsement<br>2 cruises (contracts)<br>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 CP 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. While the Observer Program does track the training and experience of certified observers, the Observer Program does not issue documentation of endorsements. The Observer Program has more specifically tracked the number of nontrawl LL2 observers since 2014 when this information was requested by the Council to be included in the Observer Program Annual Report.

[8] Throughout this analysis, a "trawl LL2 observer" means an observer with a Lead Level 2 endorsement for trawl CPs.

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

Since 2011, a significant change in the operations of the freezer longliners in the BSAI Pacific cod fishery has occurred. Members of the FLCC receive a portion of the available Pacific cod resources based on private contractual arrangements. This voluntary cooperative structure ended the race for fish in the BSAI longline 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 is 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. Fishing cooperatively under contractual agreements allows vessels to maximize the harvest and value of allocated Pacific cod.

Catch share programs require participants to cease fishing when their individual quota allocations are reached. In the case of the FLCC, NMFS retains the authority to issue a closure to directed fishing for Pacific cod by the BSAI longline CP subsector if its allocation is reached. However, because the FLCC has divided the Pacific cod and halibut PSC sector allocations among its members, industry participants use near real-time catch accounting data to 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 single authoritative record for catch of the allocated species. Observer information is used in the NMFS Catch Accounting System, and FLCC participants to monitor catch of target and bycatch species 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 corrects observer data during the observer debriefing process, all parties have access to, the edited data.

To monitor catch share programs, NMFS has developed a suite of monitoring and enforcement measures designed to ensure accurate and near real-time catch accounting for allocated species. These measures have included observer coverage requirements, observer sampling protocols, at-sea scale requirements, and electronic reporting to ensure that catch is accurately accounted for.

In 2012, regulations were implemented to increase monitoring of the FLCC. 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 2012, 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.

Freezer longline vessels that fish for Pacific cod in the BSAI or conduct groundfish CDQ fishing are required to select one of two monitoring options: 1) the increased observer coverage option, where two observers are required so that all catch can be sampled; or 2) the scales option, where one observer is required and a motion-compensated scale (flow scale) is used to weigh Pacific cod before it is processed. Under the increased observer coverage option, one of the observers on board the vessel must have an LL2 deployment endorsement. Under the scales option, the sole observer aboard the vessel is required to have an LL2 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 FLCC's quota accounts. To minimize the potential for problems with this approach, NMFS requires the single observer to have an LL2 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 the FLCC was the first quota share program since 1999 involving CPs 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 LL2 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. 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. Under the scales option, the only source for Pacific cod discard and halibut PSC catch estimates will be from the single observer aboard the vessel. An LL2 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 an LL2 observer, monitor scale performance. In this program, only one observer is aboard the vessel under the scales option and the location and process for weighing is very different. 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 while cameras monitor all points where catch may be sorted or discarded prior to the flow scale. 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 flow scale, 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 option and by decreasing the number of unsampled sets on vessels selecting the increased observer coverage option. 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 flow scale and operates under the scales option. The one vessel that has not installed a flow scale 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 catch per unit effort, discard of groundfish species, incidental catch and bycatch of other species (including seabirds), and PSC.

## 1.6 Enforcement Considerations

In December 2011, NOAA Office for Law Enforcement (OLE) noted an increased number of complaints from observers for 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 through 2016, NOAA 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 NOAA OLE. In March 2016, NOAA OLE sent a letter identifying examples of sample interference and other compliance concerns in each of the CP sectors (Lagerwey 2016). The letter was intended to remind vessel owners and operators of applicable requirements and to inform them that NOAA OLE was aware of the complaints and that vessel companies should implement corrective actions. Anecdotal information since the March 2016 letter indicates that interactions between freezer longline vessels and observers have improved overall (Lagerwey, NOAA OLE, personal communication, March 7, 2017).

Since early 2015, observers deployed on freezer longline vessels have reported that they are sometimes woken during their limited sleep time to monitor the daily flow scale test. New regulations were implemented on December 18, 2014 (79 FR 68610), tightening the at-sea scale test requirements and ensuring that a scale test be done every day with no more than 24 hours between tests. The sole observer on a freezer longline vessel may not always be available for the flow scale test required by regulations at 679.28(b)(3). This is unique to freezer longline vessels because trawl CPs with a flow scale are required to carry two observers that divide their time into 12 hour shifts to monitor the 24 hour operations. Observers deployed on freezer longline vessels already have a tough workload with limited opportunities to sleep (see Section 4.1.1). With the addition of potentially being woken mid-sleep shift to monitor the flow scale test, this has the potential to interfere with an observer's ability to perform sampling duties due to lack of sleep. Regulations at 679.7(g) prohibit a vessel from impeding or interfering with an observer. NMFS is concerned with the observer's workload on freezer longline vessels and will continue to evaluate this issue (see Section 1.8). The pre-cruise meeting, as described in Section 4.3 could help to clarify how the flow scale test could be conducted to accomplish the daily test requirement while not interfering with the observer's sleep schedule.

## 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 FLCC and harvesting 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 LL2 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 LL2 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 actions related to this issue with additional detail provided in Appendix B. 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 | October – Reviewed draft RIR/EA including information about LL2 requirement. | October – Draft RIR/EA presented to the Council. |
| 2012 | | June 15 – 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.<br>October 26 – Final rule implementing monitoring and enforcement requirements in the BSAI freezer longline fleet. |
| 2014 | June<br>1) Request for information about LL2 observer availability.<br>2) Request for a discussion paper to identify options to create an adequate and renewable pool of LL2 observers.<br>3) Request NMFS accurately credit observers for sampling experience.<br>October<br>1) Recognized a shortage of LL2 observers for deployment on freezer longline vessels.<br>2) Request for a discussion paper to explore regulatory solutions to LL2 observer availability.<br>3) Request an industry work group meeting to identify possible non-regulatory short term solutions.<br>December – Received an update from the Freezer Longline Coalition (FLC) on non-regulatory actions identified during November 13 work group meeting. | June – Provided information on LL2 availability in the 2013 Observer Program Annual Report.<br>November 13 – Workgroup meeting with observer providers and representatives and members of the FLC to discuss non-regulatory short term solutions to LL2 observer availability. |
| 2015 | October<br>1) Request discussion paper to evaluate specified options to address the shortage of LL2 observers.<br>2) Request for updated information on LL2 observer availability.<br>3) Encourage A.I.S., Inc. (AIS) to become permitted observer provider. | Jan – Modified the random sample tables to reduce observer workload on freezer longline vessels.<br>Feb 3 – Implemented changes to the Observer Program policy to credit observers for sampled hauls toward LL2 endorsement.<br>June – Provided information on LL2 availability in the 2014 Observer Program Annual Report. |

| Year | Council Action | NMFS Action |
|---|---|---|
| 2016 | April – Discussion paper scheduled to be reviewed by the OAC in September and the Council in October 2016.<br>June – Request NMFS delay action on AIS permit application until LL2 discussion paper is completed.<br>October<br>1) Reviewed discussion paper.<br>2) Requested this initial review draft RIR be prepared to analyze the identified alternatives and purpose and need. | March 24 – Received AIS full coverage observer provider permit application.<br>June – Provided information on LL2 availability in the 2015 Observer Program Annual Report.<br>August 31 – Approved AIS full coverage observer provider permit. |
| 2017 | April<br>1) Initial Review Draft RIR reviewed by the SSC, AP and the Council.<br>2) Revised the alternatives and released the RIR for public Review.<br>May – Public Review draft RIR scheduled to be reviewed by the OAC.<br>June – Public Review draft RIR scheduled to be reviewed by the Council for final action. | |

## 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 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 observers. Possible reductions could occur within the collection of effort data, composition data, and 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 review.

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 purposes that include inseason quota management, stock assessments, protected species interactions, and marine ecosystem studies. The Fisheries Monitoring and Analysis Division at the Alaska Fisheries Science Center (AFSC) 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 C). 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, 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 vessel will better prepare the observer and the crew to work together collaboratively and develop clear communication strategies. Pre-cruise meetings are currently required 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

In April 2017, the Council identified Alternatives 2 and 3 as the action alternatives which it will weigh against the "no action" alternative in making a final recommendation. In April 2017, the Council also identified Alternative 3, Option 2 as the preliminary preferred alternative. The Council had previously reviewed a discussion paper (October 2016) and an initial review draft (April 2017) that considered additional alternatives and options. All Council motions relative to the LL2 issue are included in Appendix A.

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. The substitute observer must have an LL2 endorsement for a CP using trawl gear.

**Alternative 3: Observer Options. Modify the nontrawl LL2 observer coverage requirement. Require vessel owners to participate in a pre-cruise meeting if requested to do so by NMFS. (*Preliminary preferred alternative*)**

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. Both observers must have a level 2 endorsement.

**Option 3.2: Modify the nontrawl LL2 endorsement to allow sampling experience on trawl CPs to count toward nontrawl LL2 endorsement with an additional training requirement. (*Preliminary preferred alternative*)**

The PPA applies to both freezer longliners and pot CPs required to carry a nontrawl LL2 observer. If the Council selects any alternative other than the PPA as a final preferred alternative, it should consider whether to also apply the alternative to pot CPs while groundfish CDQ fishing.

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.

**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 nontrawl LL2 endorsed observers. |
| **Alternative 2: LL2 Exception** | 1 nontrawl LL2 observer | | Trawl LL2 Obs. | Removes nontrawl LL2 requirement under specific circumstances. |
| **Alternative 3: Observer Options** | Opt. 3.1 | 1 nontrawl LL2 observer<br>OR<br>2 observers | Two level 2 Obs. | Creates a substitute observer coverage choice that does not require an LL2 observer. |
| | Opt. 3.2 | 1 nontrawl LL2 observer | | Increases number of LL2 observers by allowing trawl CP sampling experience to count towards a nontrawl LL2 endorsement. |

## 2.1 Alternative 1, No Action

This alternative would maintain observer coverage and nontrawl LL2 endorsement requirements for BSAI freezer longline vessels and pot CPs 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) license 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 (increased observer coverage option), or install at-sea scales and carry a single observer who is endorsed as a

nontrawl LL2 (scales option).[10] Pot CPs 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 continue to 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 § 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 five) 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 CP using nontrawl gear that does not require an observer with a nontrawl LL2 endorsement. The conditions that currently exist, which necessitate vessel operators cooperate with observer providers to develop and maintain an adequate pool of nontrawl LL2 observers, are 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 hook-and-line CP fishery, including the existing observer coverage requirements for vessels that have selected the scales 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 trawl LL2 observer in lieu of a nontrawl LL2 observer if a nontrawl LL2 observer is not available. All other aspects of the alternative remain the same as under Alternative 1.

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 on board, but would allow the deployment of a trawl LL2 observer if a nontrawl LL2 observer is not available.[11]

[10] Experience requirements for the observer deployment endorsements are summarized in Table 2 in Section 1.4 of this analysis.

[11] Experience requirements for a trawl LL2 observer are summarized Table 2 in Section 1.4 of this analysis.

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 trawl LL2 observer in lieu of a nontrawl LL2 observer for the duration of one trip. Section 4.2 describes in how NMFS could implement this alternative including the circumstances that must be met to qualify for an exception, 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 CPs while participating in the groundfish CDQ fisheries. In addition, this option would require vessel owners to participate in a pre-cruise meeting if notified to do so by NMFS. 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.

### Option 3.1: Two Observers

This option would define in regulation an alternate observer coverage option to allow two level 2 observers to deploy in lieu of one nontrawl LL2 observer. The option to carry two level 2 observers in lieu of one nontrawl LL2 observer would only be available to freezer longline vessels selecting the scales option. A vessel could choose this option at any time of the year without prior approval from NMFS. This option would not modify the observer requirement for a freezer longline vessel selecting the increased observer coverage option that does not require a flow scale.

### 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 CP participating in the groundfish CDQ fisheries.

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 1.4, a nontrawl LL2 observer also is required for freezer longliners selecting the increased observer coverage option and for pot CPs 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 an LL2 endorsed observer, but the requirements at 50 CFR 679.53 for a nontrawl LL2 endorsement would be modified to allow prior experience collecting data on CPs 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 an LL2 observer on a nontrawl vessel. Sections 679.100 and 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.

Option 3.2 would allow sampling experience on trawl CPs to count toward nontrawl LL2 endorsement, add an additional training requirement, and 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 increased observer coverage option as well as pot CPs participating in the groundfish CDQ fisheries.

## 2.4 Alternatives Considered but Not Analyzed Further

The Council considered six potential alternatives to address a shortage of LL2 observers at its October 2016 meeting. These alternatives were reviewed in the discussion paper prepared for that meeting. Three of the six alternatives were not recommended for further analysis. The Council expressed support for 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 alternative would have modified the experience requirements to allow experience from other regional observer programs to count toward the LL2 endorsement. This alternative 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 alternative 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 CVs in the partial observer coverage category to gain experience toward the LL2 endorsement. This alternative was rejected for further analysis due to the relatively low level of interest expected from pot CVs to carry an observer on a voluntary basis. The Observer Program also expressed concern that deployment on a pot CV is not necessarily adequate to properly prepare an observer for the challenges of deployment as a single LL2 observer on a freezer longline vessel.

**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 are provided in Balsiger (2016). Further discussion of this alternative and the impacts are included in the description of Alternative 1, the No-action Alternative, in Section 2.1 and Section 4.1.

**Options that would allow deployment of a less experienced non-LL2 observer**

At its April 2017 meeting, the Council considered options that would allow the deployment of a newly certified or level 2 observer as the sole observer under Alternatives 2 and 3. The Observer Program has determined that a certified observer, or Level 2 endorsed observer acting alone, would not be adequately prepared to successfully handle the demanding and stressful work and NMFS recommended that these options be removed from the alternatives and not analyzed further. The SSC, Advisory Panel and the Council agreed with NMFS' recommendation to not further analyze these options because of the potential to compromise data quality and observer health and safety.

**NMFS Funding**

At its April 2017 meeting, the Council considered the potential impacts of NMFS funding observer experience to supplement the pool of nontrawl LL2 observers. NMFS recommended this alternative not be analyzed further because of the lack of funding available to implement such a program. The AP disagreed with NMFS' recommendation and supported continuing to analyze NMFS funding the deployment of second observers and removing the option for NMFS to implement an at-sea training program. However, the Council agreed with NMFS' recommendation and chose not to further analyze this alternative due to lack of NMFS funding for such a program.

# 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 to 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 subsector 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 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 catch per unit effort, 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, and each CDQ group is responsible to manage the use of its halibut prohibited species quota and is prohibited from exceeding its apportionment.

### 3.1.1 Vessels in the Freezer Longline Sector

This action affects vessels that are named on CP 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 Pacific cod or CDQ groundfish fisheries each year since 2013, and have been subject to the choice of monitoring requirements, to carry two observers (the increased observer coverage option) or flow scales and a single observer (the scales option).

The vessels in this sector are CPs 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 on board 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 CPs in the BSAI have been members of the FLCC. In June 2010, the remaining LLP license holders joined the cooperative. Each year, a Pacific cod allocation is made to the BSAI longline CP 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 license. FLCC members may exchange their quota shares among themselves, and stack quota shares on individual vessels. Compliance with the agreement is monitored by Sea State, 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 initial total allowable catch (ITAC)[12] 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 (72 FR 50788, September 4, 2007).

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 each year between 2013 and 2016. Retained harvests range from about 108,000 mt to over 113,000 mt during that period. Since 1998, under fishery regulations for increased retention/increased utilization, 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% |

[1]At beginning of year, does not include rollovers.
Source: NMFS Catch Accounting data, compiled by Alaska Fisheries Information Network (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 6).

[12] ITAC is equal to the TAC, minus the 10.7 percent CDQ allocation. Note also that a 3 percent deduction from acceptable biological catch is made before calculation of the TAC, to accommodate the State of Alaska Aleutian Islands Pacific cod guideline harvest level.

**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 Pacific 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. Sea State, Inc., 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 sharing bycatch information 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 freezer longline vessels in the BSAI have consistently maintained halibut PSC mortality below their halibut PSC apportionment from 2013 through 2016. Every year from 2008 to 2014,

the freezer longline sector improved its performance in avoiding halibut PSC with a large change occurred between 2010 and 2011when 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 2016a,). 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**

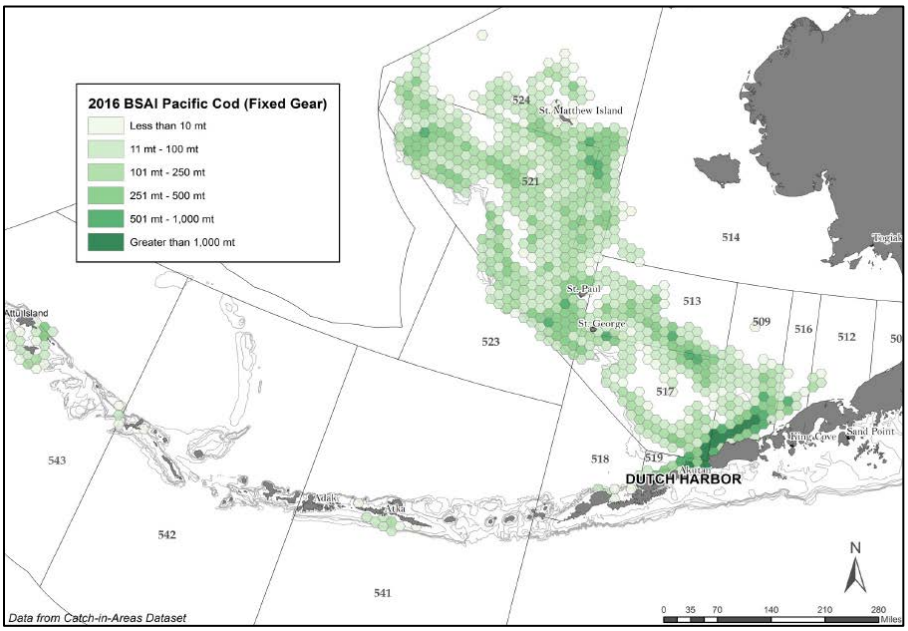
| Year | Halibut PSC apportionment | Halibut intercepted | Mortality of intercepted halibut |
|---|---|---|---|
| 2013 | 760 | 5,724 | 521 |
| 2014 | 760 | 4,767 | 433 |
| 2015 | 710 | 3,442 | 313 |
| 2016 | 710 | 2,412 | 220 |

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 fishing activity occurring along the Aleutian Islands, although Steller sea lion protection measures, which became effective in the 2011 season, limit activity in Areas 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 2011, freezer longliners generally began fishing for Pacific cod on January 1. Since

mid-2010, the FLCC has functioned as a harvest cooperative allowing the freezer longline vessels to 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 darkest shade 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 quarter, 2015**

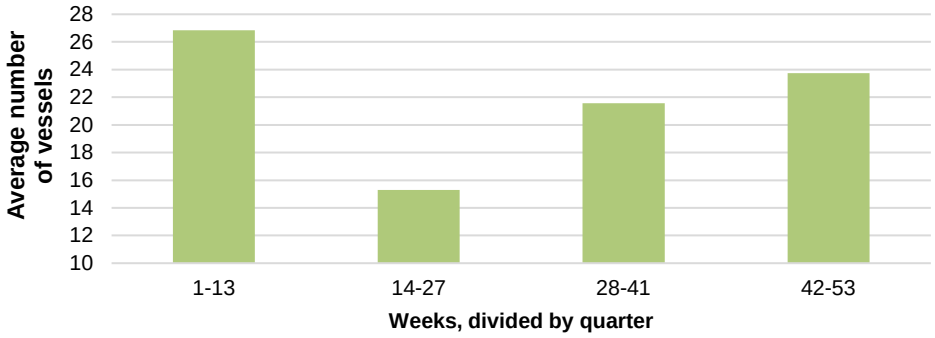
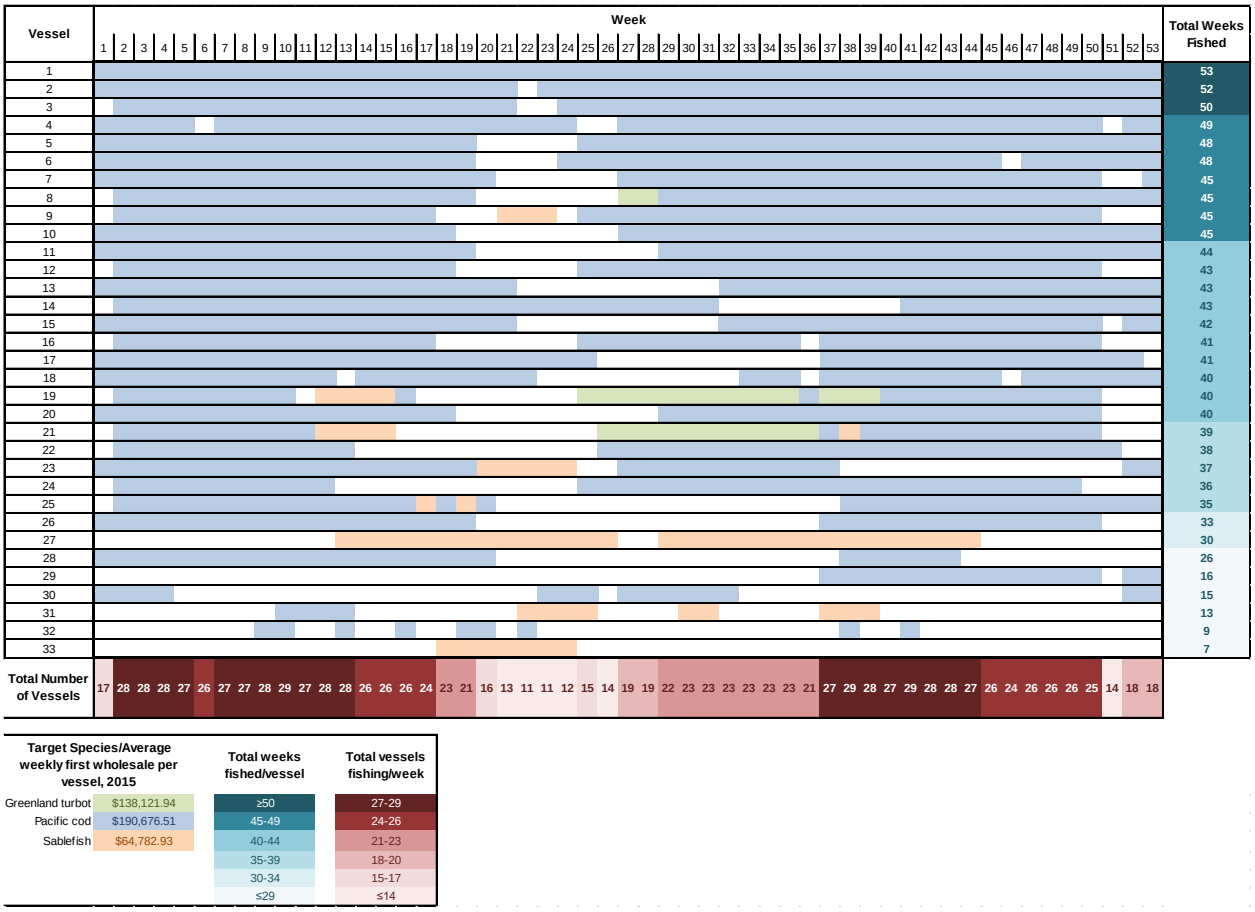


**Figure 4 Participation matrix for freezer longline vessels prosecuting BSAI target fisheries for Pacific cod, Greenland turbot, and sablefish fisheries, in 2015**




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 Pacific cod. 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 freezer longliners is sold in a variety of places (e.g., white tablecloth restaurants, fast food restaurants, food service operations in schools and hospitals, grocery stores, in the United States and 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 primarily produce trays of frozen headed and gutted Pacific cod. This product is processed further, once it leaves the CP. 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, three to five freezer longline vessels also participate in the target fisheries for Greenland turbot, and one to three vessels participate in the target fishery for sablefish. The vessels have harvested between 500 and 1,000 mt of Greenland turbot annually, from 2013 through 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 through 2016, between four and nine vessels in the BSAI freezer longline 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 LLP license holders 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 through 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, the number of vessels participating in the Pacific cod fishery has decreased from around 40 vessels in 2004 to 29 vessels in 2013 through 2016 (NMFS 2012). With fewer vessels participating in the fishery and the 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. NMFS has not issued a closure for CPs using hook-and-line gear to target Pacific cod since the formation of the cooperative.

### 3.1.5 Gross Revenue

Table 9 provides estimates of average gross revenue, and the number of freezer longliners fishing for Pacific cod 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 |

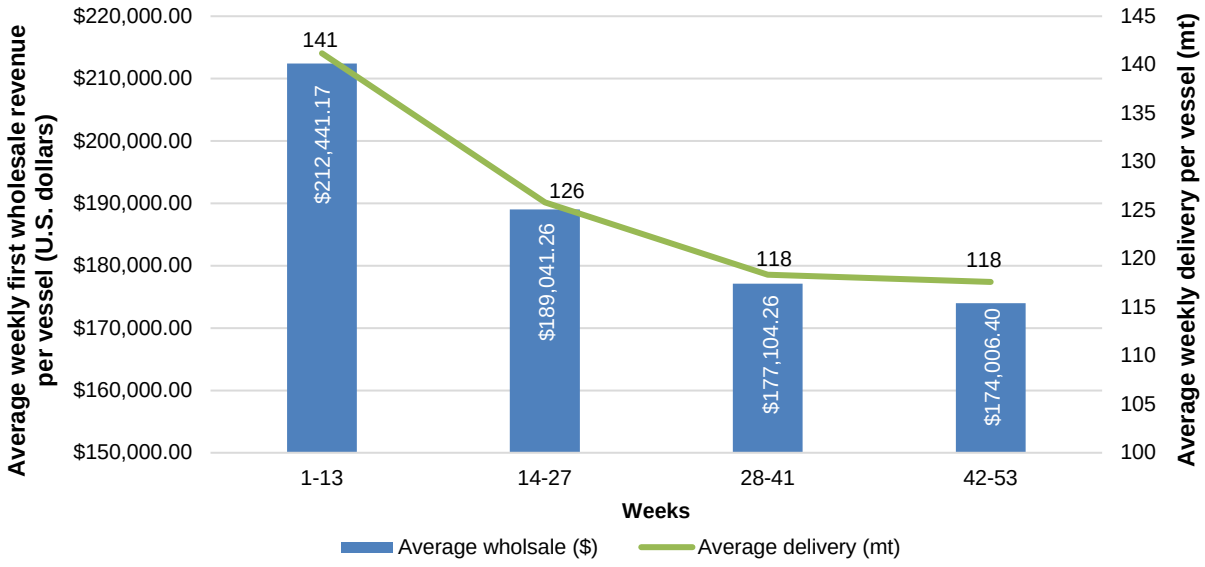
Source: AFSC Gross Revenue Procedure compiled by AKFIN

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 and 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. This shows 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 vessel and additional travel and lodging costs to and from the vessel. Table 10 summarizes the total annual observer coverage costs as submitted to NMFS by observer providers in monthly invoices for the 29 freezer longline vessels that have participated in the BSAI Pacific cod or groundfish CDQ fisheries from 2013 through 2016 (the vessels with an LL2 observer coverage requirement).

Table 10 also summarizes observer coverage costs for the Amendment 80 and AFA CP fleet, which allow 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 CP fleets compared, the freezer longline fleet pays the highest proportional observer coverage cost.

**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 Observer 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 & Motherships | | | |
| Total Observer 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 & Motherships | | | |
| Total Observer 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 and Logistics

Fishing operations in Federal waters off Alaska do not hire observers directly. Five observer provider companies are currently permitted by NMFS and actively provide observer services to vessels and processors participating in North Pacific fisheries. The five companies are A.I.S., Inc.; Alaskan Observers, Inc.; Saltwater, Inc.; Techsea International; and MRAG Americas, Inc. Of these, two are based in the Seattle area, one in Anchorage, one in Florida, and one in Marion, Massachusetts.[13]

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. Vessels cannot request specific individuals and are prohibited from discriminating on a number of other grounds, including gender.

The regulatory structure that governs permitted observer providers creates two separate markets: 1) one in which the observer provider companies hire individual observers, and 2) one in which the observer provider contract with individual fishing firms to deploy 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 individual observer providers compete energetically for fishery operation business. The situation is complicated by the variety 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 some observer providers have been covered by union contracts. (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 vessels.[14] 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 its 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 could influence the ability of each observer provider to deploy

[13] The following observer provider websites were accessed on December 13, 2016: http://aisobservers.com/history/, https://www.alaskanobservers.com/contact/, http://www.saltwaterinc.com/, http://www.techsea.com/our-company.html, https://www.mragamericas.com/about/.

[14] Observer Provider responsibilities are detailed at 50 CFR 679.52.

observers to vessels they contract with. A failed training class, unexpected injury, 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 AFSC Fisheries Monitoring and Analysis (FMA) Division administers the Observer Program and provides data collected to the NMFS Alaska Regional Office (AKRO), 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 on board 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 AKRO Sustainable Fisheries Division (SFD) 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).

In April 2016, the Council's Science and Statistical Committee (SSC) requested this analysis include a broad overview of the administration of training and pre-cruise meetings, including how these functions relate to data quality and safety. Section 403 of the Magnuson-Stevens Act requires that NMFS establish training programs to ensure that each observer receives adequate training on basic vessel safety and data collection procedures so that the observer can sufficiently demonstrate competence to fulfill the responsibilities of the position.

The Observer Program complies with this statutory mandate to provide training to observers by requiring new observers complete a 3-week training class with 120 hours of scheduled class time and by requiring returning observers complete an annual briefing with an additional briefing prior to each subsequent deployment. During these trainings and briefings, observers are required to demonstrate their understanding and proficiency by passing exams on fish, crab, and bird identification, and successfully completing various in-class activities. New observers, during their first two deployments are required to complete a mid-cruise debriefing while deployed. This preliminary debriefing provides the opportunity for the observer and FMA staff to assess the data collected up to that point, methods used, challenges encountered, and discuss future vessel assignments. After successfully completing two contracts a mid-cruise debriefing is required on an individual as-needed basis if recommended by FMA staff.

After each deployment, an observer meets with FMA staff for a debriefing interview. During the debriefing interview, sampling and data recording methods are reviewed and data are thoroughly checked for accuracy and finalized. Upon completion of the debriefing process FMA staff may assign additional training for a specific observer to work on developing particular skills or to improve deficiencies. Feedback about common data collection errors identified during the debriefing process allow FMA staff to continuously refine and improve instructions to observers through the Observer Sampling Manual and through the trainings briefings.

The training and briefing schedule is responsive to requests to enroll observers in trainings and briefings for upcoming deployments. There are occasional times of the year with particularly high training demands where scheduling is limited by Observer Program staff and classroom space availability. Advanced planning allows the Observer Program to efficiently allocate staff resources and coordinate with observer providers to meet deployment needs.

The Observer Program may also coordinate a pre-cruise meeting between a vessel operator or manager and the observers assigned. NMFS has offered pre-cruise meetings to vessels on a voluntary basis since 2002. Observer and industry participants in these meetings have found them to be extremely beneficial in developing a mutual understanding of the observers' role on board the vessel.

The AKRO SFD implements the policy objectives of the Council and manages fisheries in the EEZ 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 manages 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 Alaska fishery, one starts with the pool of qualified observers and narrows 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, and 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 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 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**.**

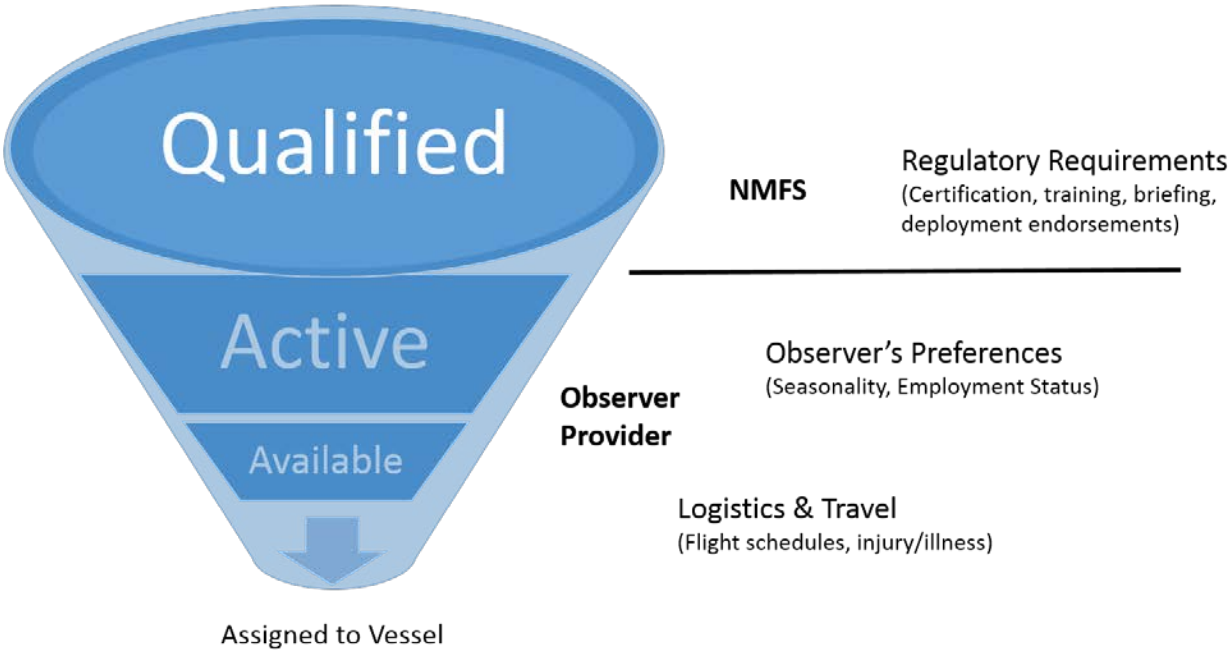



**Figure 6 How observer availability is affected by regulatory requirements, observer preferences, and logistics and travel in the full coverage fisheries.**

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 1.4. In addition to all qualified observers and indicated endorsements, Table 11 illustrates the number of newly qualified observers added to the eligible pool for each endorsement type each year. The number of qualified observers with each endorsement has remained relatively stable since 2012 despite the addition of newly qualified observers each year. This steady pool of eligible observers despite the addition of newly qualified observers is due to attrition and observers leaving the qualified pool. NMFS can track observer attrition when an observer's certification expires if they have not deployed within the last 18 months. Observer providers may have more specific information about the reasons why observers decide to leave the profession based on responses to employment offers. The number of certified observers that leave the profession each year (identified as observer attrition in Table 11) is calculated by adding the number of newly certified observers in any given year to the number of certified observers at the end of the previous year and subtracting the number of certified observers at the end of the current year to find the number of observers who's certification expired during the year. An observer's certification expires 18 months after their last debriefing. For example, in 2016, 107 new observers were trained, plus the 532 observers that were certified as of the end of 2015 minus the 515 observers certified at the end of 2016 equals the number of observer certifications that expired during 2016 (124).

**Table 11 Total number of distinct qualified observers and newly qualified observers who attained each endorsement type as of December 31 of each year 2012 through 2016.**

| | | Total Qualified (Eligible pool) | | | | Newly Qualified | | | |
|---|---|---|---|---|---|---|---|---|---|
| Year | Observer Attrition | Certified | Level 2 | Trawl LL2 | Nontrawl LL2[15] | Certified | Level 2 | Trawl LL2 | Nontrawl LL2 |
| 2012 | N/A | 511 | 275 | 208 | 214 | 168 | 102 | 64 | 60 |
| 2013 | 126 | 501 | 285 | 224 | 216 | 116 | 101 | 75 | 55 |
| 2014 | 162 | 500 | 292 | 229 | 202 | 161 | 99 | 73 | 39 |
| 2015 | 112 | 532 | 321 | 241 | 215 | 144 | 119 | 77 | 60 |
| 2016 | 124 | 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. The number of observers deployed as an 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 through 2016.**

| | Distinct Observers Deployed | | |
|---|---|---|---|
| Year | 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* | 192 |
| | Hook-and-line | 165 |
| | Pot | 26 |
| Catcher Vessel | Trawl | 602 |
| | Hook-and-line | 382 |
| | Pot | 141 |
| | Total | 1509 |

Source: NMFS Observer Program Database, March 1, 2017.
* Includes assignments onboard motherships.

[15] Each year 2013 through 2015, AIS employed qualified nontrawl LL2 observers included in the total number of qualified nontrawl LL2 observers. These numbers were 14, 33, and 43 nontrawl LL2 observers each year, respectively.

### 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, there are always more qualified observers than observers deployed in any given year. This is 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. At the end of 2015, AIS employed 43 observers qualified to deploy as a nontrawl LL2 observer. AIS was not permitted as a full coverage observer provider until August 2016 and therefore was prevented from directly contracting with vessels in the full coverage category to deploy nontrawl LL2 observers until AIS applied for and received a full coverage observer provider permit from NMFS in August, 2016.

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.

**Eligibility**

To be qualified deploy as an observer a person must meet all eligibility criteria that are defined in 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 and briefing, and is eligible to be deployed. 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 an LL2 observer depends on the number of qualified observers who return for future employment and the number of 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 on board. All but one of these freezer longline vessels has selected the scales 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 D. 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 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 LL2 observers, and minimize burnout. Many noted that this would create parity with the 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 CPs. Freezer longline vessels received the lowest satisfaction score, and trawl CPs and CVs received the second highest and highest satisfaction scores, respectively (Wang, NMFS OST, personal communication, December 7, 2016).

These personal choices and preferences influence whether a qualified observer is an "active" observer as depicted in Figure 6. 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, Saltwater Inc., personal communication, February 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 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, Techsea International Inc., personal communication, 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 an August 2014 letter to NMFS, the FLC reported five situations that resulted in modifying a vessel's planned fishing operations because of observer availability since the revised monitoring requirements were implemented in 2012 (See 2014a). The FLC situations that impacted or were anticipated to impact the fishing plans of several member vessels. This information is summarized in Table 14. Overall, NMFS estimates these situations represent a small proportion, less than 0.8 percent, 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 this letter from FLC. Therefore, the total percentage of documented delays due to LL2 observer availability represents less than 0.4 percent 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 (See 2014a).**

| 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 meeting 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 Council meeting (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.

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

| | | | |
|---|---|---|---|
| ***Goals*** | • **Build pool of available LL2 observers**<br>• **Enable full coverage observers to get their LL2 endorsement**<br>• **Improve work environment and morale for observers on freezer longliners**<br>• **Increase retention of trained LL2 observers** | | |
| ***Actions*** | **NMFS** | **Freezer Longline Conservation Cooperative** | **Observer providers** |
| | • Revise process for crediting voluntary second observers with hauls sampled<br>• Revisions to address the heavy workload of a sole observer aboard a freezer longline vessel (revise the random sample tables)<br>• Reduce observer debriefing backlog<br>• Track status of LL2 observers | • Pay for voluntary second observers in order to build the pool of available LL2 observers<br>• Outreach to FLCC members and vessel captains about observer harassment<br>• Limit fishing trips that start or extend over Christmas Day | • Adjust observer contract lengths<br>• Rotate assignments for LL2-endorsed observers between longline and trawl vessels<br>• Increase pay for LL2-endorsed observers |

At the September 2015 OAC meeting, representatives from agency, industry, and observer providers reported on the successful implementation of non-regulatory measures to address the shortage of nontrawl LL2 observers that occurred during the summer of 2014 in the FLCC fleet.[17] 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 many 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 did not make it to 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, 21 freezer longline vessels selecting the scales 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 2016.[18] Ten vessels selecting the scales 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, Alaskan Observers Inc., personal communication, 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 option, 2013 through 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 2nd 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" (E.O. 12866). 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, primarily focus on the freezer longline fleet selecting the scales option. As noted, particularly under Alternative 3 Option 3.2, only one freezer longliner has selected the increased observer coverage option, and a small number of CPs using pot when groundfish CDQ fishing 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 Alternative 1, the No-action Alternative, regulations would not be amended to modify the nontrawl LL2 observer requirement for freezer longline vessels and pot CPs 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 CVs and CPs using nontrawl gear when a lead observer is not required. An observer could also gain experience toward a nontrawl LL2 endorsement 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 observers. The shortage reported in 2014 and the potential for a future shortage of nontrawl LL2 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 observers to supplement the pool of qualified observers. These non-regulatory actions included the voluntary deployment of second observers, pay incentives for nontrawl LL2 observers, and deployment flexibility for nontrawl LL2 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 Alternative 1.

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 CPs 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 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 12 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 that 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, and 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 3-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 mistakes and errors increase. Additionally, fatigue or sleep deprivation may increase the likelihood of injury. A regular sleep schedule provides the best ability for an observer to rest, 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 the 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. Most experienced LL2 observers have developed an approach that allows the observer to maintain high performance and collect high quality data over long periods assigned to freezer longline vessels. The reports from observers included in Appendix D. Observer Input, provide insight into the relative difficulty of successfully collecting data on board 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 the freezer longline 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 limits.[19] 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 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 stress differently; it does not mean that less experienced observers are not 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 CV 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 1.5 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 relationship 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 observer's 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 (Lisa Thompson, Observer Program, personal communication, 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 five or more hauls, or more than 50 percent 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 through 2015, between 65 and 81 percent involved an observer on his or her first or second contract, see Figure 7. This demonstrates that experienced observers who have completed at least two contracts are less likely to have data deleted during the debriefing process.

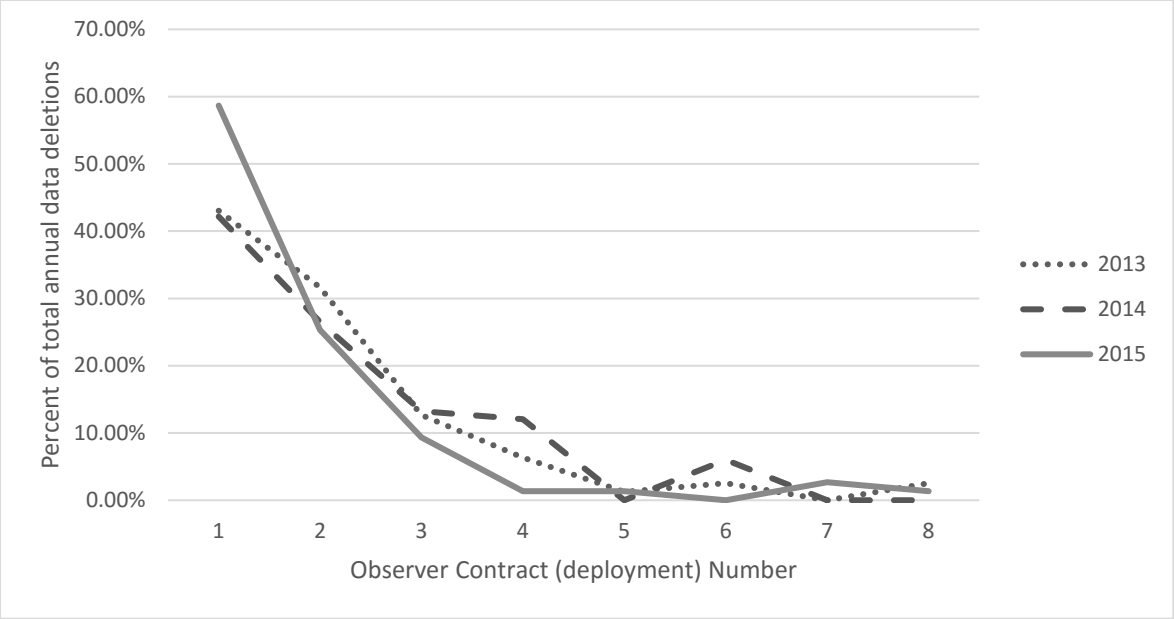



**Figure 7 Percent of annual data deletions tracked by the Observer Program by observer contract number, 2013 through 2015. Completion of one contract is equivalent to one deployment. Observer Program data 2016.**

### 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. A key assumption in the 2012 RIR/EA was that under the restructured Observer Program, the marketplace for observers would not be significantly altered (NMFS 2012). 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. (NMFS 2011)

In 2012 the partial coverage contract was awarded to an observer provider, AIS, that was not previously permitted to deploy observers in the Alaska Region. This created a different observer marketplace than had been anticipated in the 2011 RIR/EA/IRFA (NMFS 2011). Prior to 2013, all permitted observer providers were equal competitors in the observer provider market. With the award of the contract to a firm outside the established group of observer providers that had previously operated in Alaska, the market dynamics changed. Observers employed by AIS 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. 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, A.I.S., Inc., personal communication, March 6, 2017).

### 4.1.4 Costs to 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 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.

**Vessel Delays**

The five instances where a freezer longline vessel's fishing plans were altered or delayed are summarized in Table 14 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 and 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 FLCC members indicates that there is a potential for reduction in total harvest of Pacific 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 and 2016, and freezer longliners plan to continue deploying second observers in 2017 (See, Freezer Longline Coalition, personal communication, February 22, 2017). This indicates the addition of AIS as a new full coverage provider and the nontrawl LL2 observers it employs has not addressed all aspects of the shortage of LL2 observers for 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 per 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 an 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 observer providers and their client vessels. Some cost sharing occurs among vessel companies contracting with an individual observer provider. In addition to the daily rate for a second observer charged by the observer provider, a vessel that carries a second observer bears the burden of an additional person on board the vessel for the duration of the trip including food and bunk space and pays some or all of the daily observer rate depending on the number of vessels splitting the cost (Lake, Alaskan Observers Inc., personal communication, February 27, 2017). To the degree that a vessel would take one less crew to accommodate the voluntary second observer, this practice also could impose costs on the vessel owner by the value of reduced production, production efficiency, or profitability due to the displaced crew. 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, Freezer Longline Coalition, personal communication, February 24, 2017).

If deployment incentives are offered to an observer to deploy as a nontrawl LL2 observer, 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 (Table 15).

### 4.1.5 Costs to 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 its 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 March 6, 2017, observers employed by AIS have not been deployed on freezer longline vessels (Szymanski, A.I.S., Inc., personal communication, 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, Techsea International Inc., personal communication, March 2, 2017).

### 4.1.6 NMFS Administrative Costs

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 the FLCC in 2015 (80 FR 936, January 7, 2015). Initial analysis indicated that the FLCC exclusively harvested the allocation assigned to the hook-and-line CP sector (79 FR 12108, March 4, 2014). However, vessels that are not part of the FLCC harvest a portion of the allocation assigned to the hook-and-line CP sector. A limited number of vessels harvest Pacific cod as hook-and-line CPs within State of Alaska waters and are not required to use a Federal fisheries permit 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 CP 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 portion of the TAC assigned to the hook-and-line CP sector, and the FLCC is not considered a limited access privilege program for purposes of 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 trawl LL2 observer if a nontrawl LL2 observer is not available.

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 an 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 vessel companies and observer providers that composed the market 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 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. Thirty days advance notice is the standard formerly used by NOAA OLE when investigating 30-percent coverage violations to determine if there were mitigating circumstances such as a shortage of observers (Lagerwey, NOAA OLE, personal communication, 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 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 § 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 its 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 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 an LL2 observer by contacting each observer provider and asking the following questions:

- 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]?
- What date were you first contacted by the vessel owner to provide a nontrawl LL2 observer for this trip?
- 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 could be investigated by NOAA OLE 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(a)(3)(iii) 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 an 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 an 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 Alternative 2, the deployment of a trawl LL2 observer as a substitute for a nontrawl LL2 observer could increase health and safety concerns for observers deployed on freezer longline vessels. Trawl LL2 observers would likely struggle with time management and the stress of the very demanding workload as a sole observer on a freezer longline vessel. However, trawl LL2 observers would be experienced observers and would likely adapt to the workload better than other, less experienced observers.

### 4.2.3 Data Quality

Under Alternative 2, most freezer longline trips would likely continue to be monitored by an LL2 observer. The deployment of a trawl LL2 observer 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 used in the future.

As described in Section 4.1.2, observer data deletions occur more frequently during an observer's first or second contract. (See Figure 7) A trawl LL2 observer might collect smaller samples, or sample fewer sets than an observer with fixed gear sampling experience but this is unlikely to impact the precision of catch estimates for that vessel.

Trawl LL2 observers are familiar with CP vessel operations, would be more likely adapt to vessel operations faster and complete sampling duties in a safe manner on a freezer longline vessel than observers without this experience.

### 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 nontrawl LL2 endorsement. This alternative establishes a mechanism to relieve the economic burden of a shortage of qualified LL2 endorsed observers. Through the creations of the exception, trawl LL2 observers deployed in lieu of a nontrawl LL2 observer would gain experience toward the nontrawl LL2 endorsement.

Assuming a vessel would be approved for an exception, Table 11 summarizes the maximum number of trawl LL2 observers that could potentially be available to deploy as a substitute observer and increase the potentially available pool of observers for deployment on a freezer longline vessel.

Allowing trawl LL2 observers to deploy in lieu of a nontrawl LL2 observer would create flexibility by increasing the number of eligible observers that could be deployed on a freezer longline trip approved for an exception. In 2016, there were 254 trawl LL2 observers, 71 of these observers were also qualified to deploy as a nontrawl LL2 observer, increasing the qualified pool by 183 observers.

### 4.2.5 Costs to Vessels

Under Alternative 2, the voluntary deployment of second observers would cease, saving the freezer longline fleet an estimated $111 thousand to $180 thousand 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 Costs to 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 observers.

### 4.2.7 NMFS Administrative Costs

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 FLCC. 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 on Observer Program staff to provide inseason advising, debriefing services, and training if observer attrition increases.

## 4.3 Impacts of Alternative 3 – Observer Options

Alternative 3 (preliminary preferred alternative) includes two options for adding to or revising the observer coverage requirements for BSAI freezer longline vessels. Alternative 3 would also require vessels with a nontrawl LL2 observer requirement to participate in a pre-cruise meeting if notified to do so by NMFS. This pre-cruise meeting requirement would apply if either option under Alternative 3 were selected as the Council's preferred alternative.

**Pre-Cruise Meeting**

Pre-cruise meetings provide an opportunity for vessel crew and a new observer to discuss sampling and vessel operations prior to embarking on a trip. Observer Program participation in pre-cruise meetings allows staff to facilitate this conversation between the observer and vessel crew and resolve questions about sampling expectations, and vessel specific advice about anticipated sampling scenarios that the observer might encounter at sea. Establishing a requirement to attend a pre-cruise meeting if requested to do so by NMFS would allow NMFS to identify when a meeting is required to better prepare the observer and the vessel crew to work together collaboratively for the collection of high quality data. Pre-cruise meetings support the collection of high quality data by resolving sampling questions and facilitating communication between observers and vessel crew. Pre-cruise meetings can help improve data quality, reduce conflicts between observers and vessel crew, and can assist vessel owners and operators to comply with observer related regulations. A pre-cruise meeting is also an opportunity for vessel personnel to discuss compliance issues such as observer harassment and interference with NMFS staff prior to departing on a trip. A pre-cruise meeting would also be an opportunity to discuss how to set up a cycle of flow scale tests that allows the vessel to comply with the regulatory requirement without interfering with an observers sleep schedule.

Pre-cruise meetings are currently a requirement in the Cental GOA Rockfish Program and Amendment 80 fisheries and are offered on a voluntary basis to the freezer longline fleet. Under these programs, the Observer Program must be notified prior to a new observer embarking on a vessel. If the Observer Program contacts the vessel to arrange a meeting, the pre-cruise meetings must minimally include vessel personnel and the observer(s) assigned to the vessel. The meeting must occur prior to the vessel's departure on a fishing trip with the new observer and while the vessel is in port. The meeting does not necessarily need to include Observer Program staff, and may involve NMFS staff in ports where NMFS staff are available.

Regulations at 50 CFR 679.100 and 679.32 would be modified to add the requirement to participate in a pre-cruise meeting if notified to do so by NMFS. These regulations would be very similar to the current requirements at 679.84(c)(7) and 679.93(c)(7). The new regulations would require that the Observer Program is notified at least 24 hours prior to departure when a vessel will be carrying an LL2 observer that has not deployed on that vessel in the past 12 months. This notification would allow NMFS to determine if a pre-cruise meeting is necessary and for the Observer Program to contact the vessel to arrange for a pre-cruise meeting. NMFS would identify the need for a pre-cruise meeting based on several factors including the observer's prior experience, and feedback from observers previously assigned to the vessel. Observer Program staff participation would depend on staff availability and port of departure. After NMFS has contacted the vessel to arrange a pre-cruise meeting, the meeting would happen prior to the vessel leaving port with the new observer. By notifying the Observer Program at least 24 hours prior to departure, a pre-cruise meeting may be arranged and held with minimal impact on vessel operations.

A vessel notified by NMFS to participate in a pre-cruise meeting would be required to do so. This could impact vessel operations because vessel personnel would be required to participate in the meeting rather than doing other work. Prior planning and cooperation with NMFS staff when arranging the pre-cruise meeting may minimize impacts and costs to a vessel. NMFS staff may or may not be available to participate in a pre-cruise meeting depending on port of departure. NMFS would only require a pre-cruise

meeting as needed to assist newly qualified nontrawl LL2 observers when first boarding a freezer longline vessel or as needed to resolve ongoing sampling challenges on a particular vessel. Pre-cruise meetings would be scheduled during a vessel's time in port. There is no minimum or maximum time requirement for how long a pre-cruise meeting must be. Typically, meetings can be as short as 30 minutes to an hour or as long as a couple hours if there are specific sampling challenges to discuss or a high level of interest from vessel personnel. The intent is to allow observers to meet key vessel crew, discuss vessel operations and talk through sample locations, as well as allow observers to get answers to sampling questions from NMFS staff before the start of the fishing trip.

The need to have Observer Program staff participate in pre-cruise meetings could increase the demands on Observer Program field office staff resources. The increased demand on field staff resources to participate in pre-cruise meetings would not interfere with Observer Program field office operations.

### 4.3.1 Option 3.1 – Two observers

Option 3.1 would allow deployment of two level 2 observers instead of one LL2 observer. The Analyst assumes that the two observer option would be used approximately as often as the deployment of voluntary second observers as described in Section 3.3.5. This assumes that 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 modifying 50 CFR 679.51 to add the additional option for vessels selecting the scales 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 Alternative 3, the deployment of two level 2 observers as a substitute for one nontrawl LL2 observer would balance the health and safety concerns of deploying less experienced observers. Level 2 observers could be less experienced than LL2 observes and may have more difficulty adjusting to the strenuous workload. A level 2 observer has completed at least one contract with a minimum of 60 sample days. Though these observers are less experienced, each would share the burdensome workload with a 12-hour shift, reducing the potential for fatigue and sleep deprivation that would be increased if they were sleeping randomly as a sole observer would be required to do.

#### 4.3.1.3 Data Quality

The deployment of two level 2 observers would allow the observers to share the workload. Deploying two observers provides the opportunity for them 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. These less experienced observers would be more likely to take smaller samples, but with more hauls sampled, the impacts to data quality would likely to balance out.

A level 2 observer 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, the likelihood that one

observer might become incapacitated by seasickness is drastically reduced, and both observers would benefit by working as a team

#### 4.3.1.4 Observer Availability

Option 3.1 would allow level 2 observer to deploy on freezer longline vessels, this would increase the pool of qualified observers 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 option would have increased the qualified pool of observers for deployment on freezer longline vessels selecting the scales option by 129 observers in 2016.

This option would 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 Alternative 1, 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 when two observers are deployed.

#### 4.3.1.5 Costs to Vessels

Option 3.1 would reduce the potential for vessel delays and associated costs by creating an alternate observer coverage option that does not require an 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 an 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 FLCC, this option is likely to result in an overall cost savings, or at a minimum, no cost increase.

#### 4.3.1.6 Costs to Observer Providers

Option 3.1 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 Administrative Costs

Option 3.1 would implement an alternate observer coverage requirement in regulation and this 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 (preliminary preferred alternative) would modify the experience and training requirements for a nontrawl LL2 observer. BSAI freezer longline vessels and pot CPs participating in the groundfish CDQ fisheries would continue to be required to carry a nontrawl LL2 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 through 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- or 3-day training is being considered. Observers who achieve the minimum 30 sampled sets on a nontrawl CP or an observer that has previously deployed as a nontrawl LL2 would not be required to take the training class. All other qualified observers would attend the nontrawl LL2 training class to earn the nontrawl LL2 endorsement. Additional detail about the specifics of the nontrawl LL2 training class are described in Section 4.3.2.7.

#### 4.3.2.1 Implementation Considerations

Implementation of Option 3.2 would require revising 50 CFR 679.53 to modify the experience and training requirements necessary for on 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.

#### 4.3.2.2 Observer Health and Safety

Option 3.2 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 specific instruction and tips on 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 trawl LL2 observers 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 CP operations, the use of the flow scale, 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 hook-and-line 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 flow scale.

#### 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. Table 11 in Section 3.3.2 shows that in 2016, 77 new observers gained the trawl LL2 endorsement and 53 observers gained the nontrawl LL2 endorsement. Assuming that none of the new trawl LL2 observers are also nontrawl LL2 observers, this option would more than double the number of newly qualified observers potentially available to deploy on freezer longline vessels each year.

Observers without prior experience on a fixed gear CP would be required to take an additional training class provided by NMFS. The training schedule and duration of the training class would impact observer availability. This is described in more detail in Section 4.3.2.7.

#### 4.3.2.5 Costs to 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 per year for this program. By reducing the potential for a shortage of observers, this option could also reduce the potential for vessel delays and associated increases to operating costs.

#### 4.3.2.6 Costs to Observer Providers

Option 3.2 would expand the pool of observers qualified to deploy on freezer longline vessels and would thereby create additional flexibility for observer providers to assign observers to freezer longline vessels. Increased flexibility would reduce operational costs for observer providers. Observers without prior experience on a fixed gear CP would be required to attend additional training. This would increase operational costs for observer providers. 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. The training schedule and duration of the training class would impact associated operating costs for observer providers. Additional detail about the training and anticipated class availability is described in more detail in Section 4.3.2.7

#### 4.3.2.7 NMFS Administrative Costs

Option 3.2 would increase Observer Program administrative costs to develop and provide an additional training class. Observer Program staff provide initial training and annual briefings to observers. In 2016, Observer Program staff provided training to approximately 469 individual observers in 84 training classes.[20] Fifty four of these classes were one or two day briefings. Observer Program staff have developed some training materials for the voluntary training program offered as part of the nontrawl LL2 observer certification policy (See appendix C). This option would not increase administrative costs for compliance monitoring and enforcement functions.

To estimate the minimum number of training classes that might be necessary to supplement the pool of qualified nontrawl LL2 observers, NMFS would need to provide training to at least as many observers as is created by the current practice of voluntary deployment of second observers. Assuming that each trip where a second observer was deployed (see Table 16) resulted in a newly qualified nontrawl LL2 observer, NMFS would minimally need to provide additional training to approximately 10 to 16 observers each year to supplement the pool of qualified observers at a rate similar to the status quo.

[20] 2016 Observer Program Annual Report will be available at https://alaskafisheries.noaa.gov/fisheries/observer-program-reports by May 23, 2017.

In 2016, 254 observers were eligible to deploy as a trawl LL2 observer, of these, 71 were also eligible to deploy as a nontrawl LL2 observer, the remaining 183 observers plus the 77 newly qualified trawl LL2 observers (assuming all newly qualified trawl LL2 observers are not nontrawl LL2 qualified) represents an estimate of the maximum initial demand for the nontrawl LL2 training class. In 2016, a maximum estimate of 260 observers would have had the experience necessary to qualify as a nontrawl LL2 observer with the additional training class. To ensure that the pool of qualified LL2 observers is supplemented at least as much as it is under the status quo, a minimum of between 10 and 16 observers would need to receive the training each year. This would maintain the current level of additional new nontrawl LL2 observers provided by the voluntary deployment of second observers if each trip a second observer was deployed on resulted in a newly qualified nontrawl LL2 observer (see Table 16). If training class size is capped at 25 observers, NMFS would minimally need to provide one LL2 training class annually with a maximum potential demand in the first year for up to 11 training classes if observer providers intend to train every observer that may be qualified to be a nontrawl LL2.

NMFS estimates that not all qualified observers would be enrolled in the training class. As noted previously, observer attrition is relatively high and observer training increases costs for observer providers so they will likely train observers who are available for the scheduled training classes, are likely to continue working as an observer and, observers willing to deploy on a freezer longline. It is likely that the demand for nontrawl training classes will be higher at first to provide training to all existing trawl LL2 observers who will be newly qualified for the training, but then demand will taper off to some lower level to maintain an adequate pool of qualified nontrawl LL2 observers.

At current staffing levels, the Observer Program is confident that it has the capacity to develop training materials for the nontrawl LL2 training class, but staff resources needed to teach the class might be a difficult given seasonal peaks for training and debriefing resources. The Observer Program would evaluate and prioritize how to allocate resources based on staff availability, seasonal demands and input from observer providers. The frequency and timing of training classes could vary depending on demand and staff availability. To efficiently use staff resources, the Observer Program has established some minimum class sizes and advanced registration standards for the 3-week and 4-day trainings. By planning ahead and providing the Observer Program with advanced notice to provide training to full classes, staff resources can be used efficiently and effectively to provide training to as many observers as possible and thereby maximizing deployment flexibility for observer providers.

The Observer Program would develop the training curriculum and enrollment policy during the implementation process considering input and suggestions from observer providers about anticipated demand and timing. The Observer Program expects the nontrawl LL2 training class would to be relatively short, possibly 2 or 3 days long and that the training class could be offered at any time of year. An observer would need to meet minimum experience requirement to be enrolled in the class and the timing of training classes could be designed to meet deployment needs. Specific minimum experience requirements necessary to enroll in the training class would be described in an observer program training policy. Training policies are periodically reviewed and may be adjusted to meet necessary training objectives and seasonal demands. The location of training classes offered would depend on available staff and facility resources. NMFS does not expect that the completion of this training class would limit observer availability.

## 4.4 Impacts on Pot CPs

A CP using pot gear when groundfish CDQ fishing is required to carry a nontrawl LL2 observer. Observer data are used as the single authoritative record for estimates of target species catch that accrues toward a CDQ allocation. There are two pot CPs that have regularly participated in this fishery. The CDQ program is a catch share program that requires additional accountability for allocated species. When these vessels participate in non-CDQ groundfish fisheries, they are required to carry one observer at all times,

and are required to carry a nontrawl LL2 observer during groundfish CDQ fishing. These vessels contract directly with observer provider firms for observer coverage and are in direct competition for nontrawl LL2 observers with the freezer longline fleet. Pot CPs have greater observer coverage flexibility because they participate in a non-CDQ fishery and can still go fishing if a shortage of nontrawl LL2 observers occurs by just switching fisheries and not groundfish CDQ fishing. The freezer longline fleet must carry a nontrawl LL2 observer at all times when the BSAI Pacific cod fishery is open and does not have an alternate option if they participate in the BSAI Pacific cod fishery during the year.

### 4.4.1 Alternative 1 – No Action

There are four CP vessels that use pot gear in the groundfish fisheries off Alaska. CPs using pot gear to harvest groundfish CDQ are required to comply with the nontrawl LL2 observer requirement. When a vessel participates in other fisheries, the vessel is required to have full observer coverage but is not required to comply with the additional LL2 endorsement requirement. In 2017, the Observer Program issued a clarification memo to observer providers shortly after NOAA OLE provided outreach to pot CPs because of compliance concerns with the nontrawl LL2 observer requirement when 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 try to maximize the number of nontrawl LL2 observers created by assigning new observers on these vessels and removing them as soon as they have reached the required 30 sampled sets. Fast rotation of new observers on these vessels could contribute to the relative high data deletion rate because new observers, on their first or second contract, are more likely to have data deleted than more experienced observers.

The two 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 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.

### 4.4.2 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

Alternative 2 would not impact pot CPs groundfish CDQ fishing as it is currently structured. If Alternative 2 were expanded to apply to pot CPs when groundfish CDQ fishing, the case by case exception could allow a substitute observer to deploy on a pot CP when groundfish CDQ fishing if an 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**

Alternative 3 (preliminary preferred alternative) would 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. Pot CPs would incur the same or similar costs as freezer longline vessels to comply with this requirement. The costs to a vessel for complying with a pre-cruise meeting requirement are described in Section 4.3.

Option 3.1 would create an alternate observer coverage option for freezer longline vessels selecting the scales option and would not impact observer coverage requirement for pot CPs groundfish CDQ fishing. The Council could decide to expand Option 3.1 to apply to pot CPs groundfish CDQ fishing. If the Council were to expand this option, 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 use the increased observer coverage option under Alternative 3.

Option 3.2 (preliminary preferred alternative) would apply to all vessels with a nontrawl LL2 observer requirement. Under Option 3.2, the nontrawl LL2 experience requirements would be modified to allow trawl experience to count toward deployment as an LL2 on any fixed gear vessel. This would increase the number of observers that would qualify to enroll in the new training class and subsequently deploy as a nontrawl LL2 observer. The Observer Program could evaluate if pot gear specific training materials should be included in the new nontrawl LL2 training class.

## 4.5 Affected Small Entities

Section 603 of the Regulatory Flexibility Act (RFA) requires that an initial regulatory flexibility analysis (IRFA) be prepared to describe the economic impacts of proposed actions on small entities. As of January 2017, NMFS Alaska Region will prepare the IRFA in the Classification section of the proposed rule for an action. Therefore, the preparation of a separate IRFA is not necessary for the Council's final action on this issue. This section provides information that NMFS will use to prepare the IRFA for this action, namely a description and estimate of the number of small entities to which the proposed action will apply. A summary of the impacts of the alternatives is included in Section 4.6 and is not repeated here.

The alternatives would directly regulate observers, owners and operators of freezer longline vessels that participate in the BSAI hook-and-line Pacific cod fishery, and owners and operators of pot CPs when groundfish CDQ fishing. Observer providers are impacted by the availability of LL2 observers, but the PPA would not modify regulations that directly apply to observer provider firms. Observers are individuals so they do not meet the SBA definition of a small entity. Therefore, neither observer providers nor observers will be considered directly regulated entities in the IRFA prepared for this action.

Based on fishing activity from 2013 through 2015, the PPA would directly regulate the activities of 29[21] BSAI freezer longline vessels and two pot CPs. Two questions must be considered in classifying CPs under the RFA. First, are the individual vessels independently owned and operated and not dominant in their field of operation, or are these vessels affiliated under the RFA? Second, which industry classification is appropriate to use for vessels that conduct both fish harvesting and fish processing?

[21] There are currently 36 limited licenses available to this fleet sector, associated with 31 vessels. Only 29 vessels have been active in the BSAI Pacific cod fishery each year since 2013.

As noted earlier in the RIR, the freezer longliners directly regulated by this action are all members of the Freezer Longline Conservation Cooperative (FLCC), a voluntary fishing cooperative operating through a contract among all parties, whose members have a *de facto* catch share program because they effectively control fishing for the longline CP subsector's allocation of Pacific cod in the BSAI. NMFS has determined that vessels that are members of a fishing cooperative, including the American Fisheries Act pollock cooperatives, the Amendment 80 cooperative, the Rockfish Program cooperative, and the FLCC are affiliated when classifying them for the RFA analyses. In making this determination, NMFS considered SBA's "principles of affiliation" at 13 CFR 121.103. Specifically, in § 121.103(f), SBA refers to "[A]ffiliation based on identify of interest," which states "[A]ffiliation may arise among two or more persons with an identity of interest. Individuals or firms that have identical or substantially identical business or economic interests (such as family members, individuals or firms with common investments, or *firms that are economically dependent through contractual or other relationships*) [*emphasis added*] may be treated as one party with such interests aggregated." If business entities are affiliated, then the threshold for identifying small entities is applied to the group of affiliated entities rather than on an individual entity basis.

In addition, distinct from their affiliation through the FLCC, the CPs directly regulated by this action also may be affiliated through ownership. NMFS has reviewed cooperative membership as recorded on the FLC website, Federal fisheries permit data, CFEC data, and State Corporate Business data to assess ownership and affiliations among vessels.[22] Based on this information, NMFS estimates that the 29 active FLCC vessels and two pot CPs that have participated in groundfish CDQ fishing since 2013 are owned and operated by no more than 11 separate entities. Of these 11 entities, six entities own 26 freezer longline vessels and one pot CP vessel.

The thresholds applied to determine if an entity or group of entities are "small" under the RFA depend on the industry classification for the entity or entities. Businesses classified as primarily engaged in commercial fishing are considered small entities if they have combined annual gross receipts not in excess of $11.0 million for all affiliated operations worldwide (81 FR 4469; January 26, 2016). Businesses classified as primarily engaged in fish processing are considered small entities if they employ 750 or fewer persons on a full-time, part-time, temporary, or other basis, at all affiliated operations worldwide. Since at least 1993, NMFS has considered CPs to be predominantly engaged in fish harvesting rather than fish processing. Under this classification, the threshold of $11.0 million in annual gross receipts is appropriate.

By applying the $11.0 million annual gross receipts threshold collectively to the vessels affiliated through the FLCC, all of the members of the FLCC are considered large entities. The one pot CP vessel that is not a member of FLCC is a small entity. Considering ownership and affiliation independent of the FLCC contracts, the six entities that own 26 freezer longline vessels and one pot CP vessel had an average combined annual revenue above the $11.0 million threshold and are therefore would not be small entities. The remaining five freezer longline vessels and one pot CP vessel are owned by five separate entities and would be considered small entities with average annual gross revenue under the $11.0 million threshold if they were not affiliated through the FLCC membership. If additional affiliations exist of which NMFS is unaware, or if entities had non-fishing revenue sources, this estimate may overstate the number of directly regulated small entities.

[22] FLCC members identified on the FLC website at: http://www.freezerlonglinecoalition.com/members.html, accessed on December 29, 2016. CFEC commercial vessel database: https://www.cfec.state.ak.us/plook/#vessels, accessed on May 10, 2017. NMFS permit data available on the Web at: https://alaskafisheries.noaa.gov/permits-licenses, accessed on April 27, 2017. Alaska State Corporations Database available at: https://www.commerce.alaska.gov/cbp/main/search/entities, accessed on May 10, 2017. Washington State Corporations database available at: https://www.sos.wa.gov/corps/, accessed on May 10, 2017.

In response to its 2015 proposed rule (80 FR 56432; September 18, 2015), NMFS received comments on its determination to consider vessels in a fishing cooperative as affiliated under the RFA and on its determination to classify CPs as primarily engaged in fish harvesting rather than fish processing. Specifically, the Alaska Groundfish Data Bank disagreed with NMFS's determination to consider vessels in a fishing cooperative as affiliated under the RFA. The FLC and the At-Sea Processors Association disagreed with NMFS's determination to classify CPs as primarily engaged in fish harvesting. Pacific Seafood Processors Association and Phoenix Processor Limited Partnership commented on the classification of floating fish processing vessels. None of these determinations were the subject of the 2015 proposed rule, so were outside of the scope of the proposed rule. However, these comments are relevant to the determinations that will be made in the IRFA for this action.

Because the PPA affects one pot CP that is not a member of the FLCC, NMFS will prepare an IRFA for this action regardless of the classification of the freezer longliners. Therefore, NMFS does not intend to certify that the proposed action will not impact small entities. In addition, as the PPA generally benefits all affected CPs and other alternatives that could have further reduced the economic impact on CPs of any size had other negative impacts, it is unlikely that the classification of the CPs under this action would, on its own, change the range of alternatives considered, justify creating alternatives that applied different monitoring and management measures to CPs determined to be small under the RFA, or otherwise affect the selection of the preferred alternative. Therefore, NMFS will continue to review the comments to date on the classification of CPs under the RFA, may add additional information in the IRFA prepared for this action, and will seek additional comments on the IRFA and any other aspects of a proposed rule for this action.

## 4.6 Summary of the Net Benefits to the Nation

This section provides a summary of the impacts of the alternative to evaluate the net benefits to the Nation. The impacts 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.

Section 4 primarily focus on the impacts of the alternatives on the 29 freezer longline vessels that have participated in the BSAI Pacific cod fishery each year since 2013. Section 4.4 summarizes the impacts of the alternatives on the pot CPs groundfish CDQ fishing. 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 18 shows the impacts of the alternatives as relative costs or benefits when compared to Alternative 1, No Action.

Under Alternative 1, the No-action Alternative, there are limited avenues for observers to gain experience on nontrawl vessels to become qualified to deploy as a nontrawl LL2 observer which has created additional costs for observer providers and vessels due to the potential for a shortage of nontrawl LL2 observers To reduce the potential for a shortage of nontrawl LL2 observers, some freezer longline vessels have carried a second observer to increase the pool of qualified LL2 observers (see Table 16). Nontrawl LL2 observers collect very high quality data under the existing regulatory structure. Overall, among the alternatives, the status quo does not provide the maximum net benefits to the Nation because some vessel owners are incurring additional costs to carry a second observer on some trips to provide observers with the experience needed to qualify for a nontrawl LL2 endorsement, thereby increasing the supply of nontrawl LL2 observers.

Alternative 2 would be administratively burdensome to determine on a case by case basis if an exception should be approved to allow a trawl LL2 observer to deploy if a nontrawl LL2 observer is not available. It

is unclear if this administrative process could be designed is such a way to eliminate the possibility of a vessel being delayed at the dock or to ensure that costs to vessels and observer providers would be reduced relative to the status quo. Data quality and observer health and safety would be negatively impacted but the magnitude of that impact would depend on the frequency which a trawl LL2 observer is deployed instead of a nontrawl LL2 observer. In April 2017, the SSC recommended that under Alternative 2, a trawl LL2 observer should receive the same nontrawl LL2 training described in Alternative 3, Option 3.2 to reduce the negative impacts on data quality and observer health and safety. When Alternative 2 is weighed in terms of balancing the negative impacts on observer health and safety, data quality and NMFS administrative costs with the relative uncertainty of benefits to industry to reduce costs and the potential for a shortage of nontrawl LL2 observers, one could conclude that the costs of Alternative 2 do not outweigh the benefits when considering the net benefits to the nation as a whole.

Both options under Alternative 3 would increase the pool of observers qualified to deploy on freezer longline vessels thereby reducing the potential for a shortage of observers for deployment on freezer longline vessels. Both options would also maintain high data quality and observer health and safety. And under either option selected, Alternative 3 would require pot CPs groundfish CDQ fishing and freezer longline vessels to participate in a pre-cruise meeting if notified to do so by NMFS.

The differences between the two options under Alternative 3 impact the costs to both industry and NMFS. Option 3.1 would allow deployment of two level 2 observers instead of one LL2 observer, still requiring vessels to pay for two observers, but on an as needed basis rather than proactively estimating how many second observers to deploy, so this option could reduce costs somewhat. Option 3.2 (Council's preliminary preferred alternative) would modify the experience and training requirements necessary for an observer to gain the nontrawl LL2 endorsement.

Alternative 3 Option 3.2 would result in the largest reduction of industry costs relative to the other alternatives considered because this option results in the largest increase in observer availability while still only requiring the deployment of one observer when a nontrawl LL2 observer is required. Option 3.2 would increase NMFS administrative costs more than Option 3.1 because NMFS would provide additional training to observers without prior experience on nontrawl CPs under Option 3.2.

The Council's purpose and need statement prioritizes reducing the potential for a shortage of LL2 observers for deployment on freezer longline vessels while maintaining data quality and reducing costs. Both options under Alternative 3, would reduce the potential shortage of nontrawl LL2 observers while also lowering costs. Option 3.2 applies more generally to all vessels with a nontrawl LL2 observer requirement, reducing the potential for a shortage of nontrawl LL2 observers equally for pot CPs and all freezer longline vessels, including the vessel selecting the increased observer coverage option.

As shown in Table 18, Alternative 3.2, the PPA, likely has a greater net benefit to the nation as it results in no decrease in observer health and safety and data quality relative to the status quo, but likely would provide the same benefits in terms of increase in observer availability and some additional benefits relative to the other action alternatives. Specifically, the PPA likely would increase observer availability, as would Alternative 3, and may reduce costs to industry more than the other alternatives. Although the PPA may slightly increase administrative costs to NMFS, this increase in administrative costs is not as great as Alternative 2. Overall, NMFS believes that the benefits of the PPA outweigh the increases in administrative costs.

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

| Affected Entity | Alt 1 No-action | Alt 2 LL2 exception | Alt 3, Opt 3.1 2 observers | Alt 3, Opt 3.2 LL2 endorsement |
|---|---|---|---|---|
| **Impact Category: Obs. Health & Safety** | | | | |
| Observers | • Stressful as single observer with heavy workload<br>• NMFS reviewing Data collection protocols | • Status quo plus:<br>• Increased stress due to less experienced observer<br>• Deploying newly certified observers is highest risk | • Status quo plus:<br>• Increased stress due to less experienced observers, but balanced by having two observers<br>• Deploying newly certified observers is highest risk | • Minimal change from status quo as observer has comparable at-sea experience |
| **Impact Category: Data quality** | | | | |
| Individuals using observer data, vessel owners and operators, and NMFS | • High quality data | • In most cases, status quo<br>• Reduced data quality with less experienced observers<br>• Risk decreases with experienced observers (more than 2 contracts) | • In most cases, status quo<br>• Reduced data quality of less experienced observers balanced by having two observers | • Minimal change from status quo<br>• Observers would have comparable at-sea experience and gear-specific training |
| **Impact Category: Observer Availability** | | | | |
| Observer Providers: Pathways to create LL2 observers | • Deployment on pot or longline CPs in full coverage, Fixed gear CVs in partial coverage | • Status quo plus:<br>• Substitute observers deployed if exception granted | • Status quo plus:<br>• Deployment of 2 less experienced observers on freezer longline vessels | • Status quo plus:<br>• Trawl LL2s with additional training |
| **Impact Category: Costs to Industry** | | | | |
| Vessel owners and operators | • Potential for vessel delays<br>• $110-180K/ year for voluntary seconds | • Reduces potential for vessel delays<br>• Possibly eliminate or reduce the cost of voluntary seconds<br>• Time and information burden of requesting an exception<br>• Cost of available LL2 observers would not be considered | • Reduces potential for vessel delays<br>• Possibly reduces cost of second observers, seconds deployed as-needed basis, rather than a proactive calculation | • Reduces potential for vessel delays<br>• Eliminates cost of voluntary seconds |
| Observer Providers | • Track and calculate LL2 availability, and organize voluntary seconds<br>• Increased operating costs due to deployment incentives for LL2 observers | • May be required to help vessel or NMFS document exception request | • Organize seconds as needed | • Additional training for some new nontrawl LL2 observers |
| **Impact Category: Administrative Costs** | | | | |
| NMFS | • Current level of administrative costs of observer training, advising, debriefing. | • Status quo plus:<br>• Costs and workload to implement regulatory change<br>• Ongoing costs and workload to process exception requests | • Status quo plus:<br>• Costs and workload to implement regulatory change | • Status quo plus:<br>• Costs and workload to implement regulatory change<br>• Costs and workload to develop and provide nontrawl observer training |

**Table 18 Summary of the alternatives and impacts relative to the status quo.**

| Alternative | Observer Requirement | Observer Health & Safety | Data Quality | Observer Availability* | Cost to Industry | Administrative Cost |
|---|---|---|---|---|---|---|
| **Alternative 1** Status Quo |  | Stressful but manageable | High Quality | Limited | $110K -$180K Potential delays Obs. Provider costs | Normal Operations |
| **Alternative 2** LL2 Exception | **If a nontrawl**  **is not available, then allow a trawl**  | Some Negative impact | Some Negative impact | No Change | Possibly Reduce | Increase |
| **Alternative 3.1** Two Observers |  **OR:**  | No Change | No Change | Increase | Slightly Reduce | No Change |
| **Alternative 3.2** Modify LL2 Experience Requirements |  | No Change | No Change | Increase | Reduce | Slight Increase |

*Observer Availability for deployment on freezer longline vessels

Increased costs or negative impacts are indicated with a dark background and white letters and benefits such as reduced costs or positive impacts are indicated with a shaded background and dark letters.

# 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 NMFS to prevent overfishing while achieving optimum yield. The proposed action evaluates implementation of alternative observer requirements for BSAI freezer longline vessels and pot CPs 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 FLCC and pot CPs 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 Alternative 1, the No-action Alternative. The PPA would maintain observer data quality and increase the pool of qualified nontrawl LL2 observers.

**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 U.S. 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 and pot CPs. Reducing the risk of an observer shortage that would have a negative economic impact on these vessels would increase 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 CPs groundfish CDQ fishing 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 and pot CPs 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. The proposed action would not duplicate any other management action.

**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 CPs 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 CPs, 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 methods to assess the type and amount of bycatch occurring in the groundfish and halibut fisheries. The proposed action would not modify existing reporting methods.

**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 CPs 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. Under the PPA, nontrawl LL2 observers would continue to be experienced observers with additional training specific to the challenges of sampling on nontrawl vessels.

# 6 Preparers and Persons Consulted

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# 7 Data Sources

Information presented throughout this analysis, but primarily in Chapters 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. Council Motions

**North Pacific Fishery Management Council**
**C10 LL2 Observers motion**
**April 9, 2017**

The Council recommends the analysis be released for public review after the following revisions are made:

1. Accept the recommendation to revise the purpose and need as included in the initial review draft on page 13. The sentence added to the end of the first paragraph in the purpose and need is revised to read:

In addition to freezer longline vessels, pot catcher/processors participating in the groundfish CDQ fisheries are also required to carry a nontrawl LL2 observer.

2. Accept the recommended revision in the initial review draft (page 24) to add Option 3.2 under Alternative 3, and identify it as the Council's preliminary preferred alternative.

3. Move Alternative 4 to the list of alternatives considered but not analyzed further.

4. Under Alternatives 2 and 3, remove suboptions that would allow deployment of a certified observer. Under Alternative 2, require a substitute observer to have a LL2 endorsement for a catcher/processor using trawl gear.

5. SSC and AP recommendations should be considered to the extent practicable. Specifically, additional information to clarify implementation considerations for the observer training and pre-cruise meeting requirements under Alternative 3.2 should be added to the Analysis.

The revised alternatives are shown below, with the Council's preliminary preferred alternative in **bold**:

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

**Alternative 3: Observer Options. Modify the nontrawl LL2 observer coverage requirement. Require vessel owners to participate in a pre-cruise meeting if requested to do so by NMFS.**

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. Both observers must have a Level 2 endorsement.

**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.**

**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.

**North Pacific Fishery Management Council**
**C-1 Observer Annual Report**
Council motion June 9, 2016[23]

Finally, the Council requests 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 fisheries information; (2) reimbursements by the Federal government; and (3) other unfair competitive advantages.

**North Pacific Fishery Management Council**
**C-1 LL2 Observer**
Council motion October 8, 2014

The Council recognizes that there is a shortage of Lead Level 2 (LL2) observers for deployment on CP hook-and-line vessels. In order to provide and maintain a viable observer pool, there is a need to ensure that there is a sufficient training opportunity for new LL2 observers as well as consideration of incentives to retain existing trained LL2 observers.

Resolution of this issue may require non-regulatory actions in the near term. There may be a need for a future discussion paper to analyze options that would require regulatory amendment.

Successful resolution of this issue in the near term will require a cooperative effort from NMFS, the Freezer Longline Coalition, and the observer providers. The Council strongly encourages the FLC and observer providers to meet and collectively work together to resolve this issue. The Council requests that a representative from the NMFS Observer Program should be in attendance at the work session in order to assist the parties in arriving at solutions. The work group should consider (but are not limited to) the following recommendations:

> 1.) The owners of the FLC vessels send letters to their vessels reaffirming the vessel responsibilities to the observer and company policy on treatment of observers. The FLC vessels will continue to voluntarily take a second observer for training purposes as space and scheduling allows.
>
> 2.) The observer providers consider incentives that would facilitate retention of trained LL2 observers including (but not limited to): increased pay; variation in deployment scheduling between trawl and fixed gear vessels; contract length; as well suggestions on encouraging a work place environment to which the observers would be more likely to return.

In addition to the work group considerations, the Council recommends that NMFS investigate training and deployment requirements and non-regulatory changes that may assist in increasing the pool of available LL2 qualified observers. NMFS should also determine what changes are required to be able to deploy trawl LL2 observers on fixed gear vessels in the event a longline trained LL2 observer is not available.

**North Pacific Fishery Management Council**
C-2 **Observer Program – Lead Level 2 Observer Availability – Council motion**
June 5, 2014

The Council urges the NPGOP to develop a system that accurately credits observers for sampling any set or haul. This needs to include a system whereby second observers voluntarily placed as second observers on fixed gear vessels are credited for sampled sets that will accrue toward lead level 2 certification. The NPGOP should report back to the Council how this is instituted and any problems with accomplishing this.

[23] The entire Council motion is available at http://legistar2.granicus.com/npfmc/meetings/2016/6/939_A_North_Pacific_Council_16-06-06_Meeting_Agenda.pdf.

**D-5, Staff Tasking:**
**Lead Level 2 Observer Discussion Paper – Council motion**
June 9, 2014

The Council requests staff to prepare a discussion paper to:

1. Identify how many fixed-gear, newly LL2 qualified observers were certified in 2013 working in each the full coverage and partial coverage programs.

2. How many fixed-gear, LL2 certified observers were available for deployment in 2013 compared to 2012.

3. Identify alternative methods to develop a sustainable, renewable and adequate pool of fixed-gear, LL2 qualified observers. Methods could be regulatory (such as further modifications to prior experience requirements) or non-regulatory (such as additional work with an in-season advisor via ATLAS, especially during the early days of the cruise).

The discussion paper is intended to guide the Council in developing potential alternatives for a regulatory amendment package to the Observer Program.

## Appendix B. 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 LL2 certification. The company representatives indicated that they would not be able to provide enough LL2 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 LL2 requirements, and proposed a relaxation in the LL2 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 LL2 requirement in more detail and discuss the impacts. (NMFS 2012)

In 2012, NMFS modified equipment and operational requirements for freezer longline vessels named on License Limitation Program (LLP) license 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 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 LL2 deployment endorsement. The rule also reduced the experience requirements for LL2 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 monitoring and enforcement 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 LL2 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 monitoring and enforcement proposed rule (77 FR 59053, September 26, 2012).

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. Michael Lake et al., letter sent to NPFMC, Jan 30, 2014, regarding LL2 observer availability.[24] 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 OAC recognized that if an LL2 observer is not available, the vessel experiences a hardship in that it would be unable to go fishing, and identified deploying a second inexperienced observer on some vessels as an interim solution. The OAC minutes noted that the freezer longline sector is unwilling to take on this role because of the cost (this sector has already made significant investments in flow scales in order to be able to take only one observer), and because of natural observer attrition, it would need to be training new observers in perpetuity.[25]

In May 2014, AOI, Inc. described the decreasing number of LL2 observers within the company, and informed the Observer Program that it was 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. Michael Lake, AOI, letter sent to Martin Loefflad, Observer Program, May 28, 2014.[26]

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, Saltwater, Inc., notified Coastal Villages that a qualified LL2 observer would not be available for deployment on the F/V *Lilli Ann*. The circumstances of the situation anticipated the vessel would need to cut its trip short by approximately 5 to 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. Saltwater, Inc., describes the situation as resulting from limited opportunities for observers to earn the LL2 endorsement in the full coverage category and fewer observers earning the LL2 endorsement in the partial coverage category. Saltwater, Inc. noted that at the time, the state of its LL2 observer supply was at "critical depletion" and that it had begun to deploy second observers at "considerable cost to industry". Stacey Hansen, Saltwater, Inc., Letter to Ken Tippett, Coastal Villages Seafoods, August 21, 2014. Coastal Villages responded to this letter identified the estimated cost of carrying a second observer as approximately $10,000 per trip (approximately 30 days under normal fishing conditions). They also requested urgent relief for the shortage of LL2 observers and

[24] Available on the Council's Web page under agenda item C-14:
http://legistar2.granicus.com/npfmc/meetings/2014/2/876_A_North_Pacific_Council_14-02-03_Meeting_Agenda.pdf

[25] 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

[26] Available on the Council's Web page under agenda item C-2:
http://legistar2.granicus.com/npfmc/meetings/2014/6/893_A_North_Pacific_Council_14-06-02_Meeting_Agenda.pdf

identified the need for alternate methods to develop LL2 observers that would be less financially burdensome to the industry. Ken Tippett, Coastal Villages Seafoods, letter dated, August 22, 2014.[27]

In a letter to NMFS in late August 2014, the FLC summarized the experiences of three vessels that had delays and 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 data aboard the freezer longline fleet. It criticized a point made in the 2012 RIR/EA (NMFS 2012) that the partial coverage category would provide new opportunities to create LL2 observers and urged that the shortage of LL2 observers is critical. The FLC described that members have deployed second observers to create more LL2 observers, which may result in realized benefits in 2015, but does nothing to alleviate the immediate shortage. It again identified the need for a long term solution. Chad See, FLC, letter to Jim Balsiger, NMFS dated August 28, 2014.[28]

NMFS responded to the FLC on September 8, 2014, and identified a number of non-regulatory market-based solutions that could be implemented by observer providers and the industry. NMFS referenced the RIR/EA prepared in 2012 (NMFS 2012), the responses to comments published in the final rule (77 FR 59053) as well as the Council's request for a discussion paper to identify regulatory and non-regulatory alternatives in June 2014. The Council requested staff identify alternatives "to develop a sustainable, renewable and adequate pool of fixed-gear, lead level 2 observers."[29]

On September 18 and 19, the OAC met and recommended that a discussion paper about the LL2 issue be added as priority 14 on the list of observer analytical priorities.[30] The OAC minutes noted that the shortage of LL2 observers experienced during the summer 2014 was due to 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 changes to address the shortage of LL2 observers.

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 range of possible actions for each of the three parties are discussed further in Section 3.3.4 and Table 15.

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 and recommended that regulatory solutions to the LL2 issue be evaluated. NMFS 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 resolve conflicts, recognize sample interference, and resolve potential

[27] Letters from Saltwater Inc, and Ken Tippett are available on the Council's Web page under agenda item C-1: http://legistar2.granicus.com/npfmc/meetings/2014/10/894_A_North_Pacific_Council_14-10-06_Meeting_Agenda.pdf

[28] Letter available on the Council's Web page under agenda item C-1: http://legistar2.granicus.com/npfmc/meetings/2014/10/894_A_North_Pacific_Council_14-10-06_Meeting_Agenda.pdf

[29] Council motion on Agenda Item D-5 Available on the Web: http://legistar2.granicus.com/npfmc/meetings/2014/6/893_A_North_Pacific_Council_14-06-02_Meeting_Agenda.pdf

[30] OAC report is available on the Web under Agenda item C-1 http://legistar2.granicus.com/npfmc/meetings/2014/10/894_A_North_Pacific_Council_14-10-06_Meeting_Agenda.pdf

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 that requested staff update the discussion paper requested at its 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 this motion was to "[E]ncourage AIS to become a certified observer provider, and supply LL2 observers to FLC vessels." AIS is the observer provider contracted by NMFS to provide observer services in the partial observer coverage category.

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 it has 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." On August 31, 2016, for reasons explained in more detail in Attachment 1, 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 an analysis examining the impacts of three of the options included in the discussion paper.

In April 2017, the Council reviewed the initial review draft RIR[31] that described the specifics of how each alternative could function and the potential impacts of each alternative. After reviewing the RIR, the Council removed the Agency funding alternative and options under the remaining alternatives that would have the largest negative impacts to data quality and observer health and safety.

[31] RIR available on the Council's Web page under Agenda item C10:
http://legistar2.granicus.com/npfmc/meetings/2017/4/955_A_North_Pacific_Council_17-04-03_Meeting_Agenda.pdf

## Appendix C. Observer Program Lead Level 2 Certification Policy

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 D. 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 if 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 were 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 then 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 things 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.