Observer Availability Discussion Paper

September 18, 2024[1]

1 Introduction

In June 2023, the North Pacific Fishery Management Council (Council) tasked staff to prepare a discussion paper on observer availability and opportunities for gaining experience on vessels. Specifically, the discussion paper should include the following information:

- The number of observers of each training endorsement level needed across fishing seasons compared with the existing number of unique qualified observers and newly qualified observers (including consideration of pending management programs such as pelagic trawl electronic monitoring; moving all Bering Sea Pacific cod trawl vessels into 100% coverage under the new catch share program; and changes to monitoring requirements in the Bering Sea pot cod CP sector).
- A description of observer provider challenges in providing observer coverage in both partial and full coverage fisheries.
- A summary of any solutions NMFS or observer providers are considering to improve observer availability.

2 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 every trip is monitored by one or two observers and vessels and processors obtain observer coverage by contracting directly with observer providers. The costs associated with the full coverage category are paid by the commercial fishing industry directly to certified observer providers. This cost structure is sometimes referred to as "pay as you go." There are currently three active certified full-coverage providers in Alaska: Alaskan Observers

[1] Prepared by: Anna Henry (NPFMC), with contributions from Phil Ganz (NMFS AKRO SF) and Andy Kingham (NMFS AFSC FMA)

For definition of acronyms and abbreviations, see online list: https://www.npfmc.org/library/acronyms

Inc (AOI); Saltwater, Inc. (SWI); and AIS, Inc. The majority of full coverage business is conducted by two of the three NMFS-permitted observer providers.

2) the partial observer coverage category (partial coverage), where NMFS randomly selects trips or offloads for observer or EM coverage at rates specified in the Annual Deployment Plan (ADP) developed in consultation with the Council. One observer provider is awarded the contract by NMFS to provide observers in the partial observer coverage category through a competitive process, allowing any company that provides these services to bid. The current observer service provider contract was competed and subsequently awarded for up to five years of the program to AIS, Inc. in July of 2019. In 2024, the contract will be recompeted again, with an expected award for up to five years. 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.

Some vessels and processors may be in full coverage for some trips and partial coverage for other trips, depending on the observer coverage requirements for specific fisheries. 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.

Observer providers recruit and hire qualified observer candidates, ensure each observer completes required training, provide travel and lodging before and after assignments, and assign observers to vessels and shoreside processors.[2] There are substantial differences among the observer providers in terms of both the proportion of their business dedicated to providing observers for the Alaska groundfish fishery and the proportion of the total groundfish observer deployment days they provide.

NMFS has implemented regulations that govern the terms of observer deployment (e.g., limiting deployment duration, setting minimum qualifications, requiring specific experience for observers assigned to certain deployments, etc.). NMFS Fisheries Monitoring and Analysis (FMA) staff are responsible for training, briefing, debriefing, and oversight of observers who collect catch data on board fishing vessels and at shoreside processing plants as well as quality control/quality assurance of observer and EM data.

NMFS regulations provide minimum requirements for qualified observer candidates in Alaska who can be hired by observer providers (50 CFR 679.52(b)(1)). To be a qualified candidate an individual must have: a Bachelor's degree or higher from an accredited college or university with a major in one of the natural sciences; Successfully completed a minimum of 30 semester hours or equivalent in applicable biological sciences with extensive use of dichotomous keys in at least one course; Successfully completed at least one undergraduate course each in math and statistics with a minimum of 5 semester hours total for both; and Computer skills that enable the candidate to work competently with standard database software and computer hardware. Nationally, NMFS policy sets national minimum eligibility standards for marine fisheries observers which largely mirror these regulations.

Qualified observer candidates then must meet specific requirements prior to deployment as defined in 50 CFR 679.53. New observer candidates are typically required to complete a 3-week training with 120 hours of scheduled instruction time and additional training by NMFS FMA staff as necessary. During their first two deployments, observers are required to complete a mid-cruise debriefing while still in the field. This mid-cruise debriefing provides the opportunity for both 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, mid-cruise debriefings are only required on an

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

individual basis if recommended by FMA staff. After each deployment, observers must meet with an FMA staff member for a debriefing interview. During the debriefing process, sampling and data recording methods are reviewed, potential regulatory violations are discussed and documented, and, after a thorough data quality check, the data are finalized.

Additional levels of job training and experience are required for specific observer deployment endorsements as summarized in Table 1. Generally, these include Observer Certification, annual deployment endorsements, level 2 endorsements and both trawl and non-trawl lead level 2 (LL2) 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.

Table 1 Observer training and experience requirements for the various observer deployment endorsements.

Endorsement	Requirements
Observer Certification	Minimum eligibility Initial observer training
Level 2	Observer certification 60 data collection days Met expectation on last cruise
Lead Level 2 (trawl gear)	Level 2 endorsement 2 cruises (contracts) 100 sampled hauls on a CP using trawl gear or a mothership
Lead Level 2 (non-trawl gear)	Level 2 endorsement 2 cruises (contracts)—at least 10 days each Successfully completed LL2 training or briefing as required 30 sampled sets (non-trawl gear) or 100 sampled hauls (trawl gear)

NMFS has consistently required more experienced observers with specific deployment endorsements for vessels participating in groundfish catch share programs 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). Catch share programs with additional monitoring and equipment requirements include the following: Community Development Quota (CDQ) Program (63 FR 30381, June 4, 1998), Pollock Fishery American Fisheries Act (AFA) Program (67 FR 79692, December 30, 2002), the Amendment 80 Program (72 FR 52668, September 14, 2007), the Central GOA Rockfish Program (76 FR 81248, December 27, 2011; 86 FR 11895, March 1, 2021), and the Pacific Cod Trawl Cooperative Program (88 FR 53704, August 8, 2023). [3]

The number of observers and deployment endorsement requirements are detailed at 50 CFR 679.51 and summarized in Table 2. These requirements apply to vessels in full coverage whenever fish are being harvested or processed and for vessels in partial coverage on selected fishing trips. In the partial coverage category, one certified observer is required on selected trips based on rates determined in the Annual Deployment Plan.

[3] The Halibut and Sablefish Individual Fishing Quota Program does not include transferable 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 2 Observer requirements

Coverage	Vessel/Gear Type	Fishery Description	Observer Endorsements Required
Full	Processing Plants	BSAI and GOA Pollock	Observer Certification (OC)
	Mothership	Groundfish CDQ – delivery of unsorted codends	OC + Lead Level 2 (LL2)
	Trawl CP/Mothership	Pollock CDQ Groundfish CDQ BSAI Pollock Amendment 80 in BSAI Rockfish Program	OC +LL2
	HAL CP	BSAI Pacific cod Groundfish CDQ	Increased observer option: OC + LL2
			Scales option: LL2 (with flow scale)
	CP/Mothership All gear types	All other fisheries (including HAL CPs that "opt out" of BSAI Pacific cod fishery)	OC
	Trawl CV	Groundfish CDQ BS Pollock Rockfish Program BSAI Pacific cod	OC
	HAL CV	46' LOA CDQ Groundfish	OC
	Pot CP	Groundfish CDQ	OC + LL2
		Groundfish (non-CDQ)	OC + Level 2 (L2)
Partial	All gear types	All fisheries (selected trips)	OC
	Fixed Gear EM	Selected trips	Camera system
Trawl EM EFP	Trawl CV	Pollock	Camera system
	Processing Plants	Pollock	OC

3 Observer Availability

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 FMA 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 to observer providers unless requested. New observers are certified after completion of the initial training and an observer's certification expires 18 months after their last debriefing. Table 3 shows the total number of distinct qualified observers, the newly qualified observers that first obtained their certification or endorsement in that year, and observer attrition each year from 2014-2023. Calculating each observer endorsement can be complex and can change from one day to the next given the specific endorsement requirements and an individual observer's experience level. Table 3 includes certifications attained and deployments initiated through December 31 of each year. Additionally, each individual observer may qualify for multiple endorsements and therefore may be counted in the data numerous times depending on how categories are defined. For example, in Table 3 an observer who has both Non-trawl LL2 and Trawl LL2 endorsements would be counted in every column except "Not LL2." The number of certified observers that leave the profession each year (identified as observer attrition in Table 3) 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 whose certification expired during the year. For example, in 2023, 141 new observers were trained, plus the 431 observers that were certified as of the end of 2022 minus the 434 observers certified at the end of 2023 equals the number of observer certifications that expired during 2023 (138). The total number of observers has decreased through the time period from a peak of 548 in 2015 to a low of 431 in 2022, while trends in newly certified observers and attrition are more variable throughout the time series.

Table 3 Number of distinct qualified and newly qualified observers at each endorsement level and observer attrition as of December 31 of each year 2014-2023.

YEAR	Qualified Observers						Newly Qualified Observers						Attrition
	All Certified	Not LL2	LL2 - either	Non-trawl LL2	Trawl LL2	LL2 - Both	All Certified	Not LL2	LL2 - either	Non-trawl LL2	Trawl LL2	LL2 - Both	
2014	532	237	295	203	233	141	164	130	34	11	27	4	149
2015	548	226	322	215	243	136	145	113	32	19	23	10	129
2016	524	178	346	215	261	130	108	81	27	13	21	7	132
2017	494	166	328	192	263	127	103	77	26	14	21	9	133
2018	486	178	308	181	260	133	128	98	30	9	30	9	136
2019	493	194	299	183	250	134	141	105	36	14	33	11	134
2020	479	209	270	171	237	138	140	121	19	6	19	6	154
2021	467	211	256	160	228	132	126	114	12	8	11	7	138
2022	431	196	235	165	208	138	126	109	17	10	15	8	162
2023	434	200	234	162	196	124	141	115	26	14	23	11	138

Source: NMFS FMA

Figure 1 shows the minimum number of observers qualified in a single day each month at each endorsement level from 2014-2023. In this figure, observers included in the “certified” endorsement level only include those observers who do not have a lead level 2 endorsement (although LL2 qualified observers are also certified) while observers that have both LL2 trawl and LL2 non-trawl endorsements appear in both categories. The total number of observers has declined over the time period although seasonal trends have remained relatively stable with a peak in the fall and a trough in the spring/early summer.

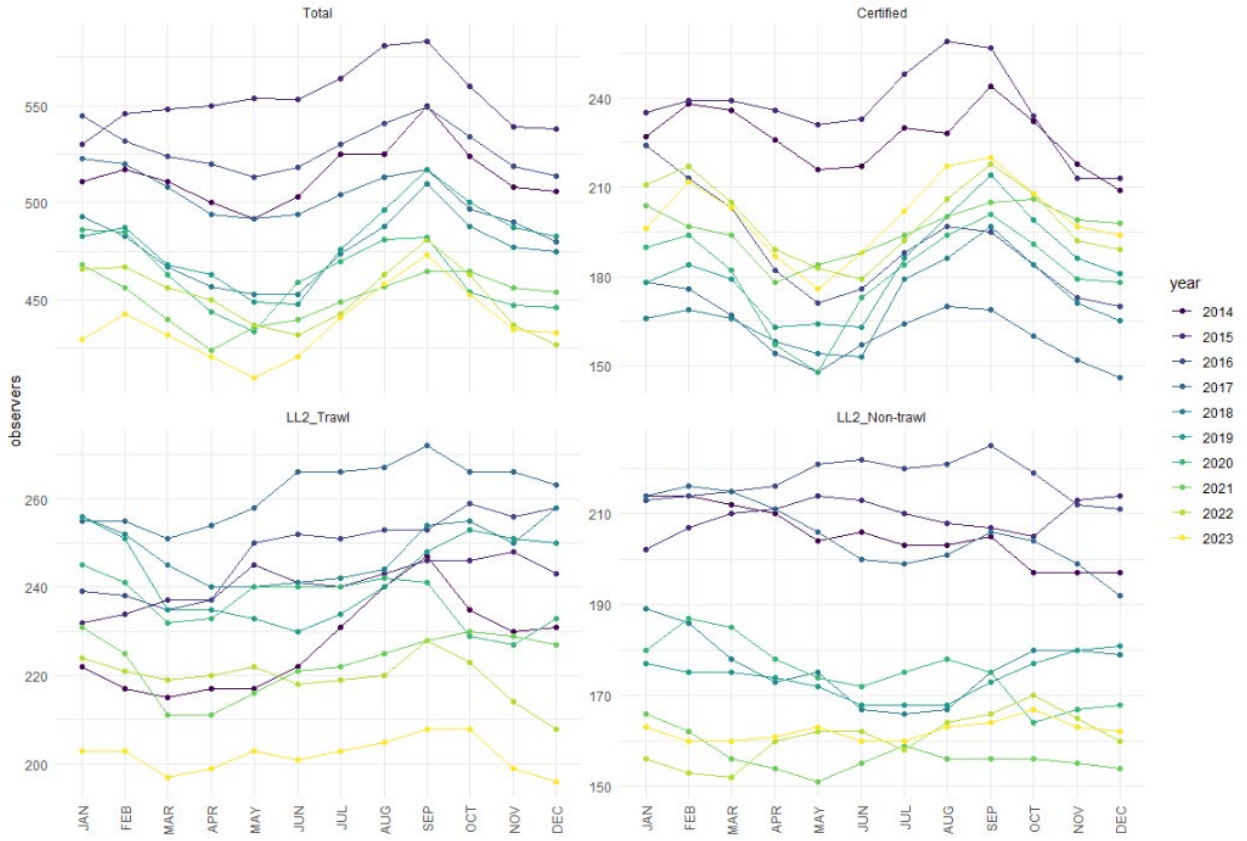

Figure 1 Minimum number of observers qualified on a single day each month for each endorsement level from 2014-2023 (note y-axis changes in each panel).

The number of *qualified* observers are reported in Table 3 and Figure 1; however, these numbers may differ from the number of observers *available* for a specific deployment on a specific vessel in an Alaska fishery at a given time. A number of factors may affect an observer's availability for an assignment 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. An individual observer is included in the pool of qualified observers as long as their certification or endorsement is valid, regardless of their individual intent to deploy on future assignments. Figure 2 shows the relationship between the number of qualified observers and the number of available observers for deployment on a vessel or at a processing plant, as well as some of the factors that influence observer availability and the responsibilities of NMFS and observer providers. NMFS does not track observer availability at a level more specific than tracking the number of qualified observers with a current certification**.**

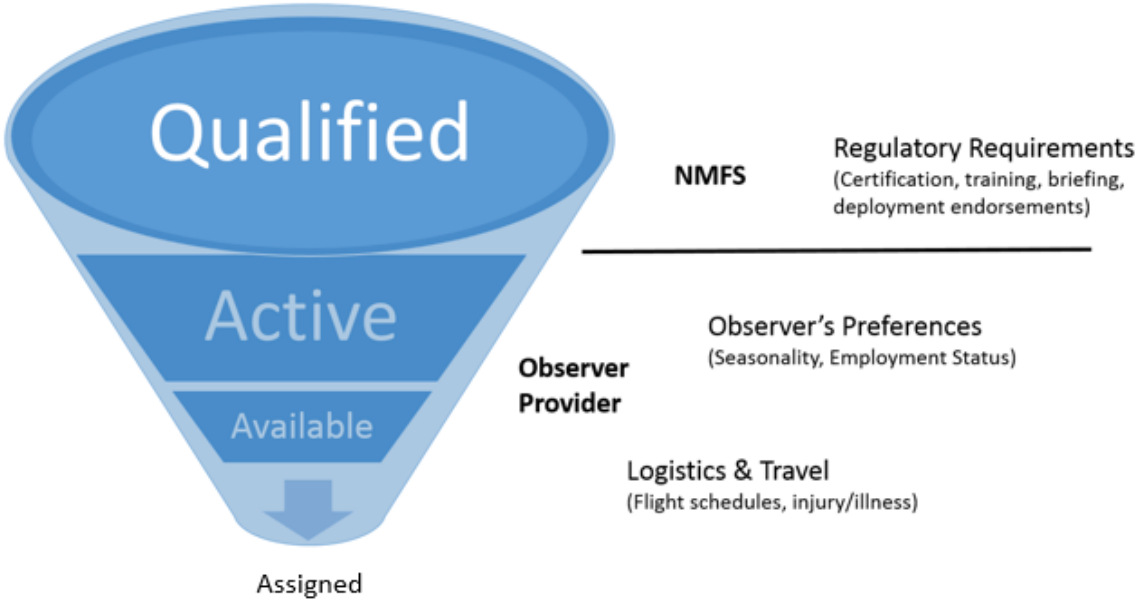

Figure 2 How observer availability is affected by regulatory requirements, observer preferences, and logistics and travel (adapted from NMFS 2017).

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 are responsible for responding to industry requests to fulfill an observer requirement on a vessel or at a plant. When doing so, the provider must deploy observers with the appropriate endorsement to meet the industry request. Table 4 shows the number of individual observers deployed by endorsement type. Note that an individual can be counted in multiple columns in this table if they are deployed under numerous endorsement types. The number of individuals deployed has declined for each endorsement type throughout the time series.

Table 4 Number of individual observers deployed by endorsement type 2014-2023.

YEAR	Deployed Observers			
	All Deployed	As Not LL2	As Trawl LL2	As Non-trawl LL2
2014	433	407	112	78
2015	454	422	104	84
2016	443	411	113	72
2017	383	358	101	77
2018	382	366	116	61
2019	381	357	117	66
2020	352	335	98	50
2021	355	339	96	45
2022	340	315	108	56
2023	329	310	97	55

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, in-season advising and support, sampling and safety gear, and debriefing services. The current deployment system for observers means that NMFS is not involved 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.

4 Observer Demand

To determine the number of observers required at each endorsement level, one cannot simply summarize the endorsement levels of assigned observers because observers are often deployed on assignments that require lower endorsement levels than they hold (i.e. a lead level 2 observer may be assigned to cover a trip that only requires a certified observer). Therefore, to estimate the demand for observers at each endorsement level, analysts identified observed hauls and determined the endorsement level required based on the characteristics of the haul (fishery, gear, etc). Trips including observed hauls were then matched to observer assignments to create a dataset of the total assigned observers at each endorsement level on each day. These data are summarized in Figure 3 below to show the maximum number of observers assigned on a single day each month for each endorsement level from 2014-2023. Note that while all LL2 observers also meet the requirements of certified observers, the data in this document reporting certified observers only includes observers that do not hold an LL2 endorsement or where an LL2 endorsement was not required. Overall observer demand follows seasonal trends that peak in January-March and June-September. Demand for total observers and certified observers has decreased over the last 10 years, while demand for trawl and non-trawl lead level 2 observers has been more variable throughout the time series.

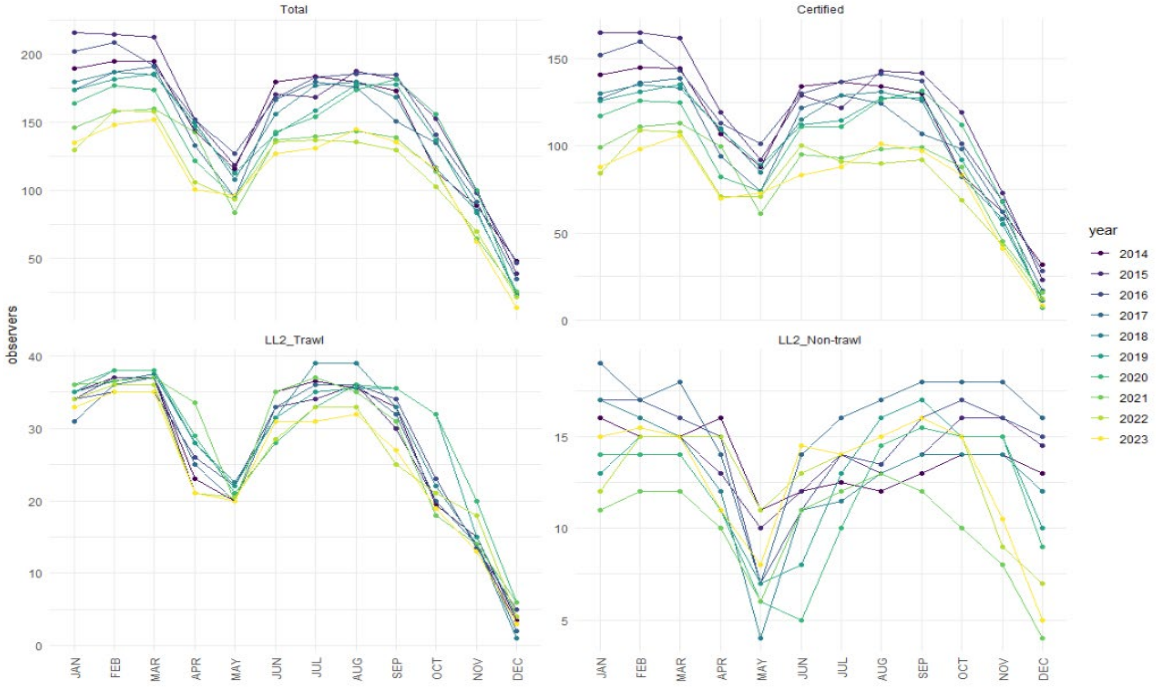

Figure 3 Maximum number of observers assigned on a single day each month for each endorsement level from 2014-2023 (note y-axis changes in each panel).

Figure 4 shows the distribution of the number of qualified and assigned observers each day in a year by endorsement type. “Certified” includes only those observers who do not have any LL2 endorsements and “LL2_Any” includes observers with either LL2 fixed gear or LL2 trawl (or both). Comparing the number of observers assigned to fulfill regulated observer requirements to the number of qualified observers at each endorsement level shows that on any given day, there are more qualified observers than assigned observers at each endorsement level. Note that even in 2016-2018 when the minimum number of qualified “certified” observers is close to the maximum number of assigned “certified” observes, not only could these minimum and maximum not be on the same day, but the actual number of qualified observers that could be assigned a deployment requiring a certified observer would also include the number of qualified “LL2_Any” observers in this figure. However, as mentioned earlier, the only data that exists of *available* observers are the actual number of *qualified* observers with current, valid certification at each endorsement level and this will inevitably include observers who are no longer interested in observing or would not accept an assignment and are therefore not technically *available* for deployment.

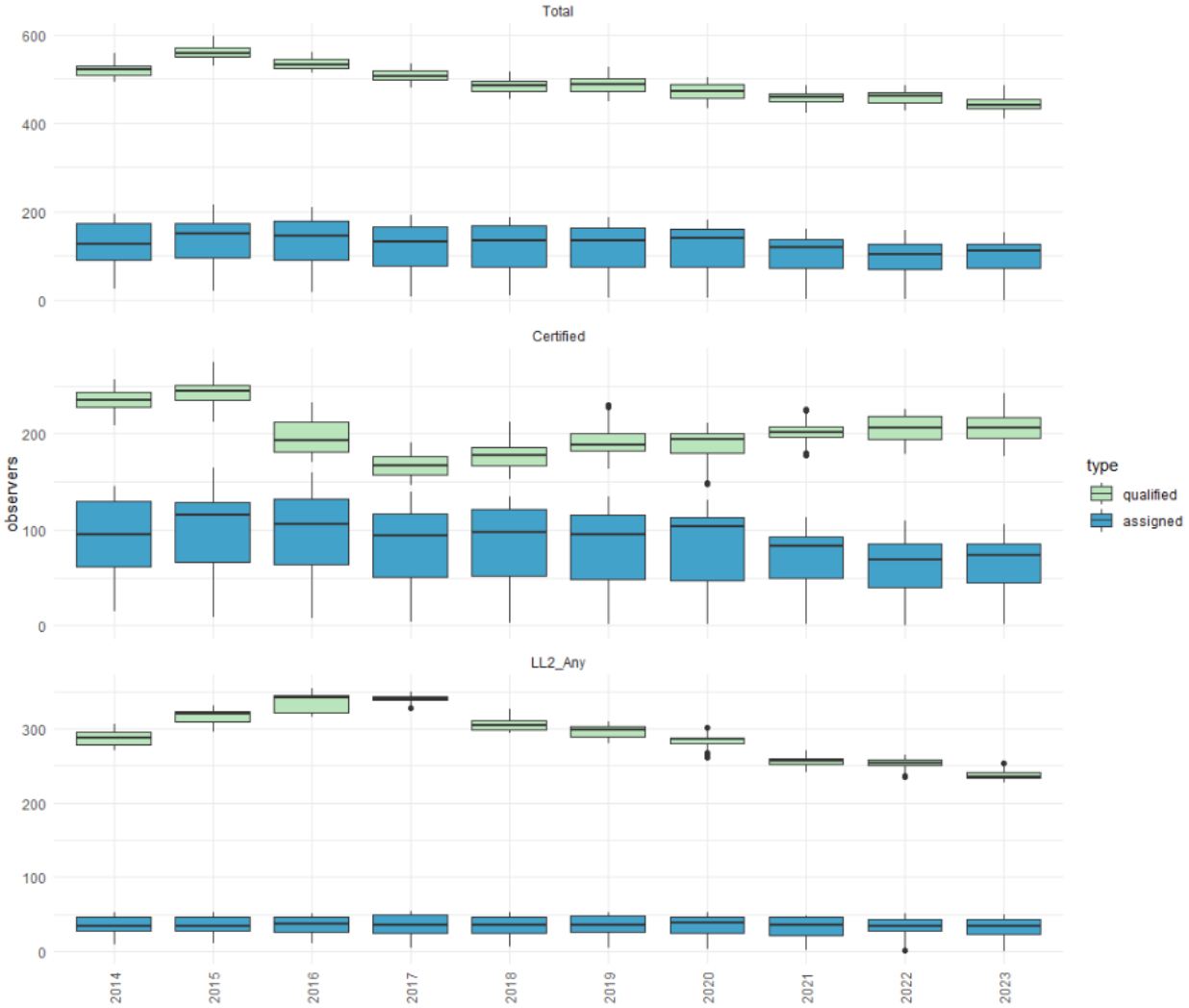

Figure 4 Daily number of available and assigned observers by endorsement level 2014-2023

Observer demand is impacted by numerous variables including management changes that affect monitoring requirements or coverage levels, total allowable catch limits and other management specifications that impact overall fishing effort and temporal distribution of effort in each fishery. External factors such as market conditions, processing capacity or operational decisions can also impact the overall need for observers at a single time. To demonstrate how observer demand is distributed by fishery throughout the year, analysts categorized assigned observers at each endorsement level into fishery groups. Figure 5 shows the average number of daily observers required for each fishery by month in 2023. Amendment 80 and AFA CPs are responsible for most of the Trawl LL2 observers while Freezer longliners account for all the non-trawl LL2 observer demand. Trawl fisheries also account for a significant portion of the certified observers with processing plant observers and partial coverage observers rounding out a majority of the certified observers. Overall observer needs have two peaks throughout the year, once in January through March and again over the summer from June through September.

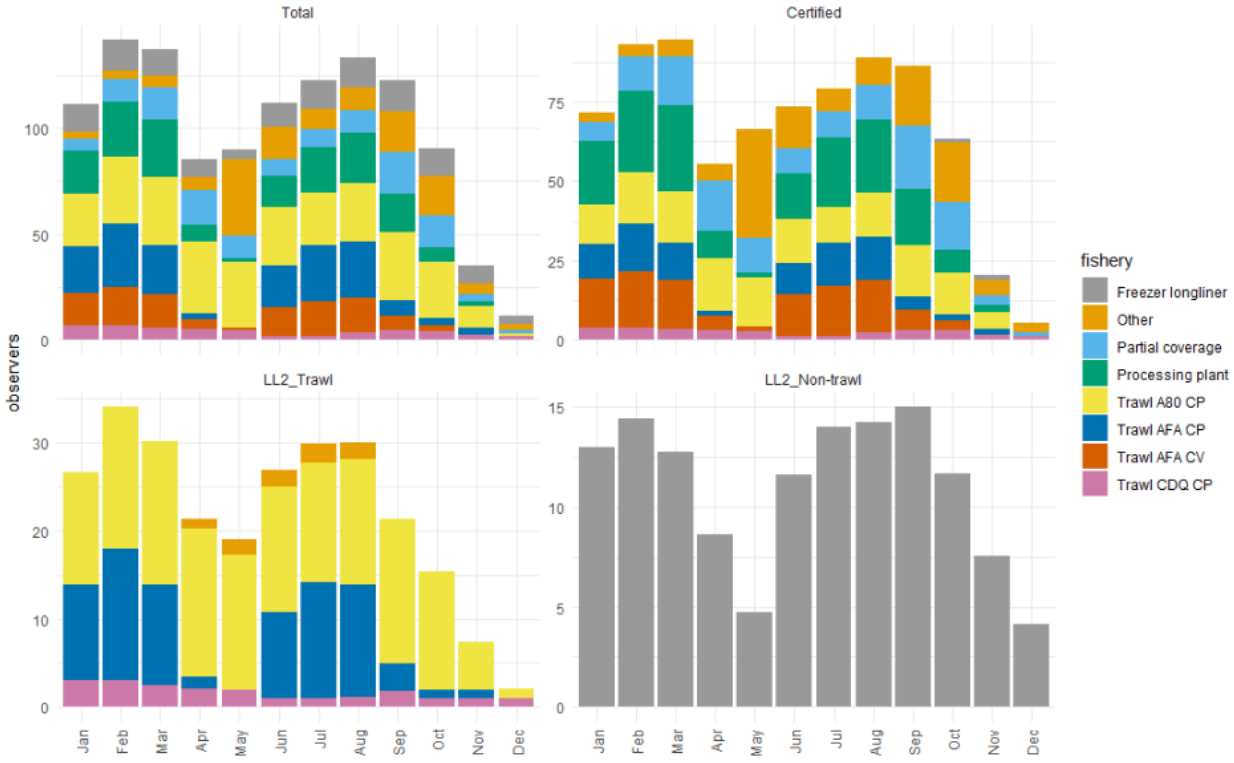

Figure 5 Average number of daily observers required by month and endorsement type in different fisheries in 2023 (note y-axis changes in each panel).

4.1 Effects of recent management changes

Data in Figure 3 through Figure 5 reflect management requirements that existed at the time. Recent and upcoming management programs have direct impacts on observer needs and indirect impacts on availability in terms of platforms available to obtain endorsement experience. Specifically, the Pacific cod trawl cooperative program (PCTC), Pot Catcher Processors (Pot CPs) in BSAI groundfish, and pelagic trawl electronic monitoring regulations (trawl EM) and their effects on monitoring needs (summarized in Table 5), are discussed in this section. To assess the impact of these regulatory changes on the number of observers required at each endorsement level, analysts re-created the observer demand dataset described and summarized in section 4 to demonstrate what the observer requirements would have been, had each of these regulatory changes been in effect in previous years. The number of observers in the original

dataset were subtracted from the updated data to estimate the difference in the number of observers required for each management change. This approach does not account for any changes to overall fishing effort or temporal distribution of effort that may occur in response to these management changes. However, given that these regulatory changes have only recently become effective it is difficult to determine the effect on monitoring from the relatively sparse data available since the changes have occurred. Therefore, this retrospective approach using actual fishing data from previous years can provide a more robust comparison on the potential changes to monitoring demand that may occur in future years due to the new requirements.

Table 5 Recent management changes affecting monitoring requirements.

Action	Effective date	Monitoring change
Pacific Cod Trawl Cooperative	9/7/2023	BSAI Pacific cod trawl CV fishery moved from the partial observer coverage category to full coverage category
Pot CPs in BSAI groundfish	12/11/2023	CPs previously required to have observers with the observer certification (OC) now required to carry at least one Level 2 observer at all times.
Pelagic Trawl Electronic Monitoring	expected 1/1/2025, EFP since 2020	Pollock CVs using pelagic trawl gear in the BSAI and GOA can opt to use electronic monitoring systems in place of observers onboard vessels; shoreside observers with OC monitor offloads.

Pacific Cod Trawl Cooperative

Amendment 122 to the BSAI groundfish FMP, established the pacific cod trawl cooperative program (Aug 8, 2023, 88 FR 53704) which took effect September 7, 2023. One condition of the PCTC program is that participating vessels are required to be in the full coverage observer category to monitor at-sea discards and obtain data to manage transferable PSC limits. Prior to this amendment, participants in the Pacific cod trawl CV fishery were in the partial observer coverage category, with the exception of vessels which requested to opt into the full coverage category.[4] Figure 6 shows the maximum additional number of observers required on a single day each month due to the full coverage requirements of the PCTC program. The additional observers required are certified observers that would not require any additional endorsements. Generally, more observers are required between January and May with the largest total number of additional observers required in any one month of seven in February of 2023.

As noted above, this approach estimates the amount of existing effort that would move from the partial coverage to full coverage observer program. However, it is more challenging to predict how the temporal distribution of that effort may change with the implementation of the PCTC program. According to the Regulatory Impact Review for the PCTC program (NPFMC, 2021), although Pacific cod harvests are highly influenced by the timing and location of spawning aggregations, the implementation of the PCTC program could change the geographic distribution and timing of the BSAI Pacific cod fishery. The length of the BSAI Pacific cod fishery for the trawl CV sector had compressed from a 40-day to 60-day A season fishery to less than a two-week fishery in recent years, when the fleet was unable to organize a voluntary cooperative.

[4] At the time of the Observer Program restructuring, the Council and NMFS determined that partial observer coverage was appropriate for BSAI trawl CVs that are operating outside of the AFA directed pollock fishery (NMFS, 2016). After the implementation of the restructured Observer Program in 2013, NMFS allowed the owners of BSAI trawl CVs in the partial observer coverage category to volunteer on an annual basis for full observer coverage during all times that they participate in BSAI trawl fisheries. Individuals who made this choice were typically owners of AFA CVs that participate in the BSAI limited access Pacific cod trawl fishery to better manage Pacific halibut PSC limits within their cooperatives. In 2016, NMFS published a regulatory amendment to implement this annual request in regulation (81 FR 67113, 30 September 2016).

Implementing cooperative harvest privileges could shift the emphasis from a “race for fish,” to an operation that better optimizes timing of harvest of BSAI Pacific cod, which would likely lengthen the fishery for the A season and B season.

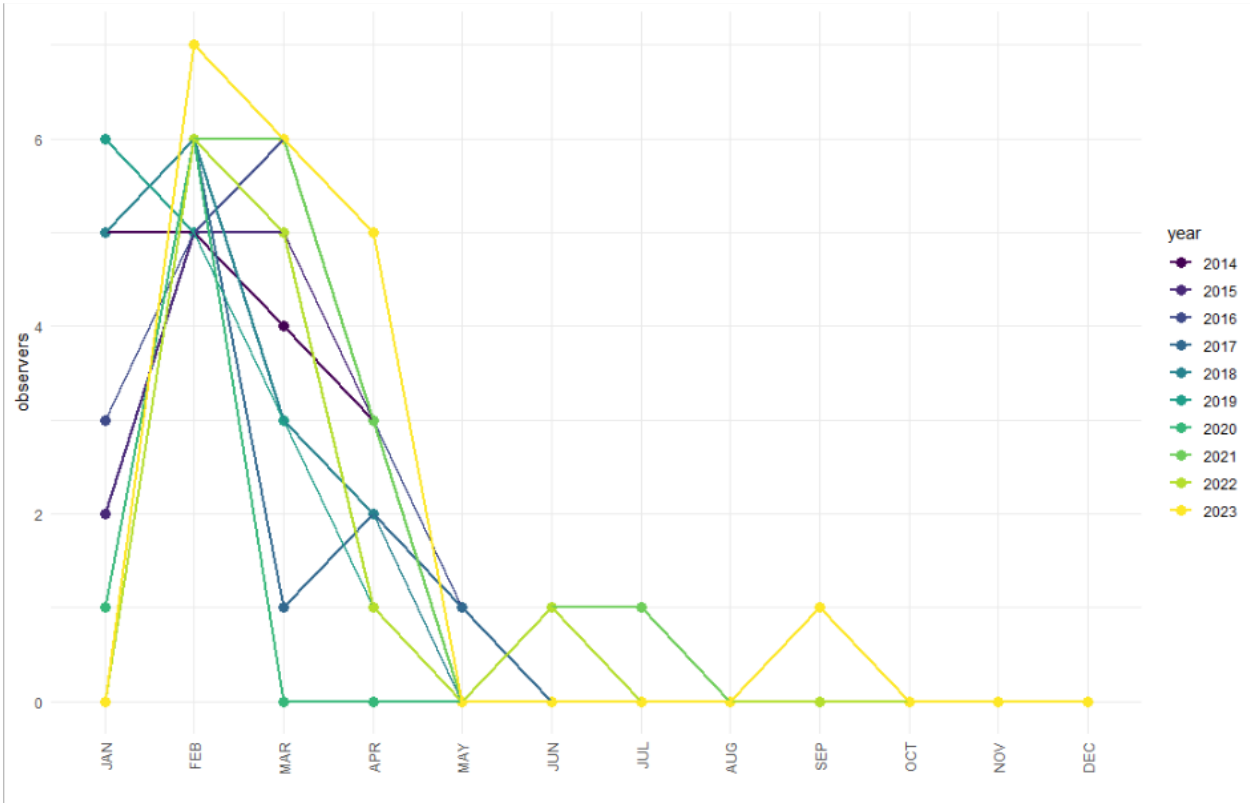

Figure 6 Maximum additional number of certified observers required in a single day, by month if the PCTC program had been in place 2014-2023.

Pot Catcher Processors in BSAI groundfish

Effective December 11, 2023, the monitoring requirements for pot Catcher Processors (CPs) participating in BSAI groundfish fisheries were revised to require pot CPs fishing non-CDQ groundfish to carry at least one Level 2 (L2) observer at all times. Previously, observers on these vessels were not required to have endorsements in addition to the observer certification specified at § 679.53(a)(5)(i). Figure 7 shows the maximum number of L2 observers required on a single day each month due to the Level 2 requirements in the pot CP fishery. Note that these are not additional observers required, but rather observer assignments that could have previously been filled by certified observers without an experience based endorsement. On any day from 2014-2023, at most, five observers with only an observer certification would have required an L2 endorsement had these regulations been in place. This occurred in September and October 2015. In more recent years, this number has declined.

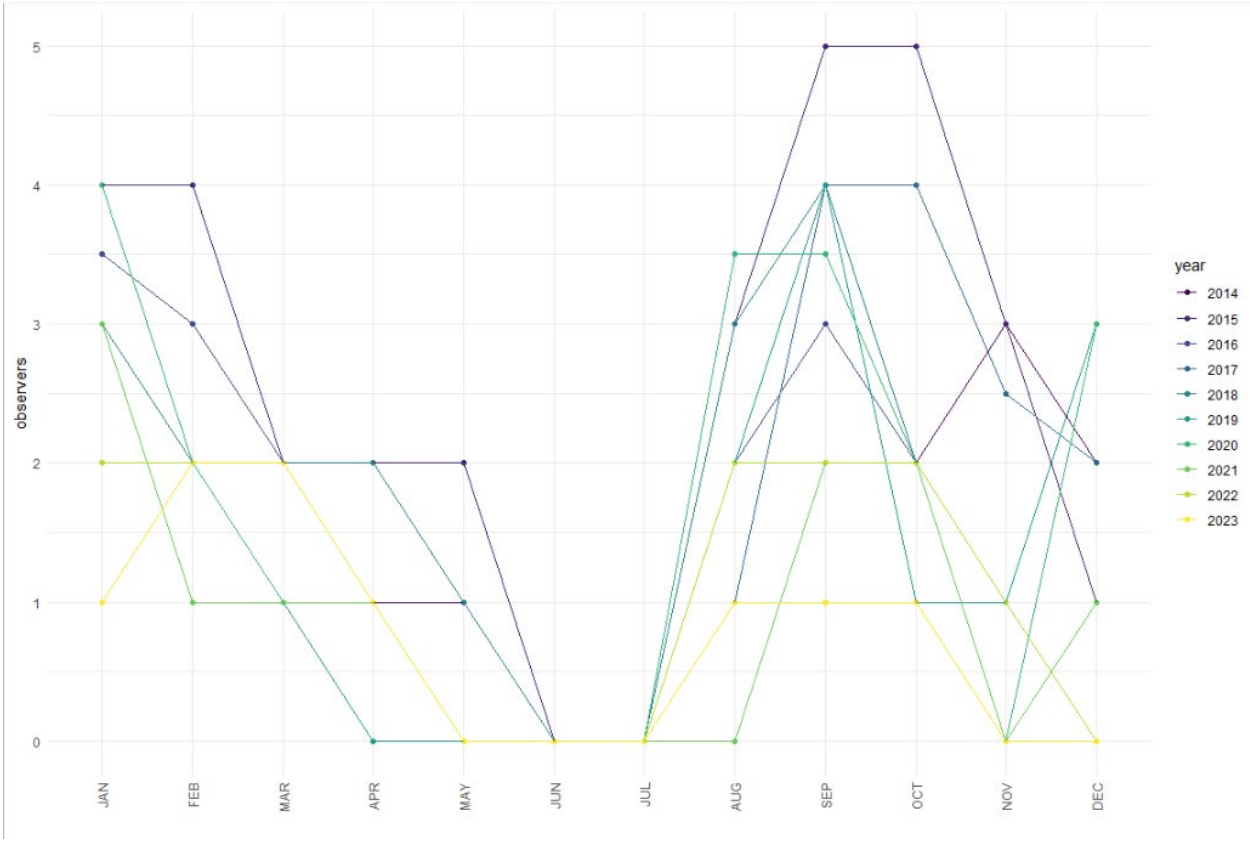

Figure 7 Maximum number of L2 observers required in a single day, by month if the pot CP Level 2 observer requirements had been in place 2014-2023. Note these are not additional observers but rather L2 endorsed observers that would have previously only required observer certification.

Trawl Electronic Monitoring

Electronic monitoring on pollock CVs using pelagic trawl gear in the BSAI and GOA has been operating under an exempted fishing permit (EFP) since 2020 but will be implemented as a regulated program in 2025. Participation in the trawl EM program has been limited under the EFP although it has expanded in recent years leading to reductions in observer demand as participating vessels were exempted from carrying an observer during the EFP. While additional observers were deployed to shore-based processors participating in the EM EFP to collect prohibited species and biological data from observer-exempted vessels participating in the EM EFP, the number of vessels that were exempted from carrying an observer greatly outnumbered these additional observers deployed to processing plants. This can be seen in Figure 8 which shows maximum daily reductions of around 25 to 45 observers that would have been required, by month had trawl EM been a regulated program with full participation in 2014-2023.

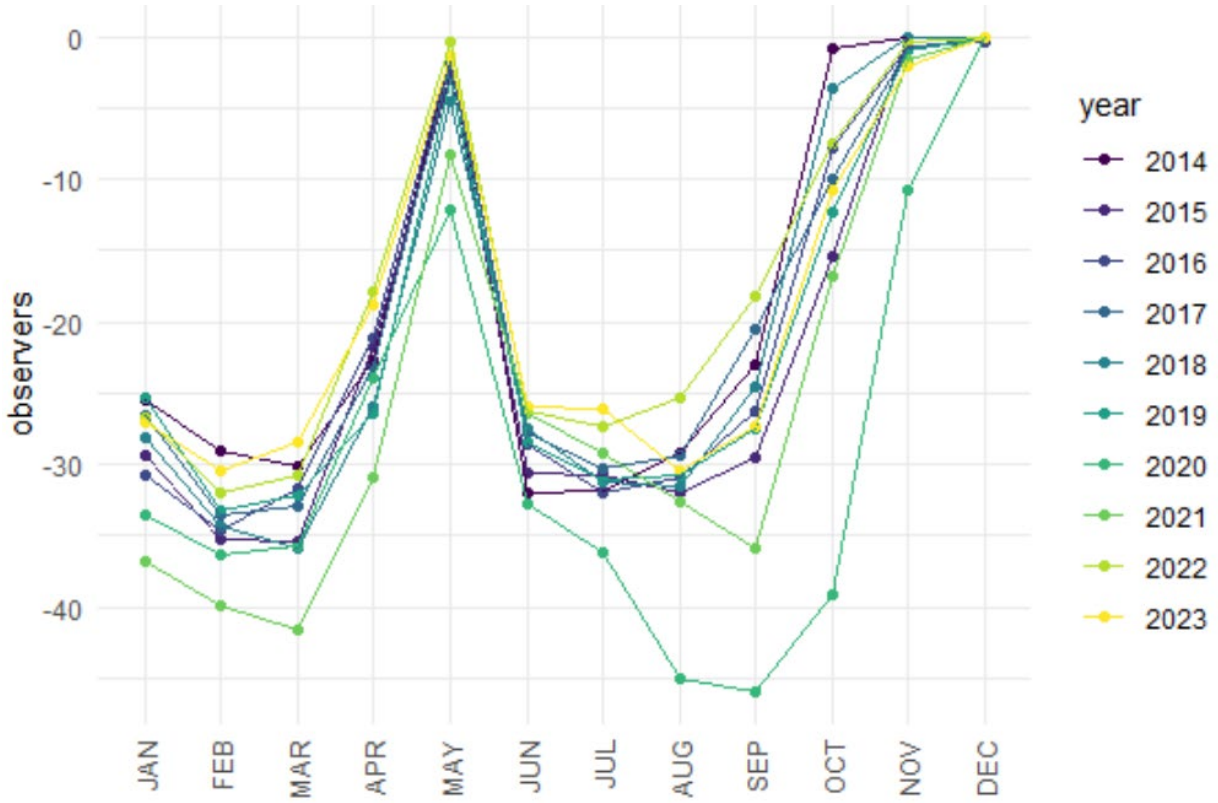

Figure 8 Greatest daily change in number of observers required if trawl EM had been a regulated program 2014-2023.

The combined effect of these three regulatory changes (PCTC, Pot CPs and Trawl EM) is a reduction in overall observers required (Figure 9). There is no change in Lead Level 2 requirements, a slight increase in required Level 2 observers, and an increase in certified observers from PCTC that is more than offset by the large reduction in certified observers from the Trawl EM program (the impacts of which are discussed further in section 5).

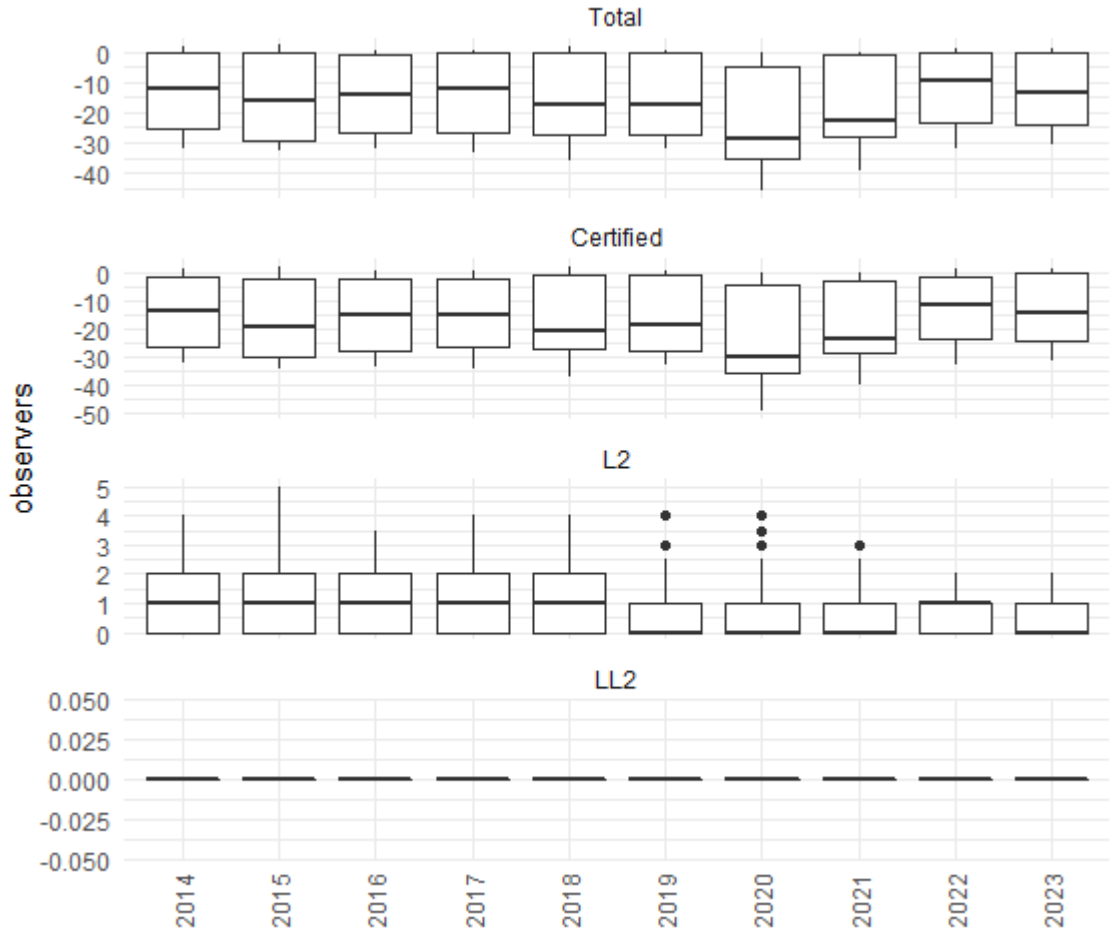

Figure 9 Overall daily change in observers assigned due to PCTC, Pot CP and Trawl EM regulatory changes.

5 Challenges and solutions for observer availability

Analysts spoke with representatives from each permitted observer provider company, current and past observers, and FMA employees to better understand the current challenges and potential solutions related to observer availability. There was no consensus in describing the scope or the magnitude of the problem. One provider mentioned that they have not seen changes in recent trends in recruiting or retention of observers while other providers stated that the problem is dynamic; a few years ago it was harder to recruit the necessary overall number of people to fill observer positions, but the current challenge is more related to retaining observers and subsequent reduction in experienced observers.

The following topics and themes were mentioned as contributing factors:

Challenges

COVID-19

Many of the current challenges were attributed to unique circumstances that occurred due to the COVID-19 pandemic. During the pandemic many observers scattered and were harder to get in contact with or had adjusted their professional aspirations or their willingness to be away from home for long periods of time leading to fewer observers accepting longer deployments. Increased length of deployments during the pandemic also led to burnout for some observers, as well as a lower rate of observers obtaining higher endorsement levels because there were fewer total deployments and therefore less opportunities available to gain experience towards an endorsement. Additionally, colleges and universities had moved to online learning and discontinued most field work, leading to a lag in qualified candidates and a cohort of observer trainees with less experience with in-person communication and a generally lower level of social intelligence, which although not a regulated requirement can be an important skill set for successful observers.

Current dynamics of the fishery

There are unique challenges currently facing Alaska's groundfish fisheries as harvesters and processors are facing challenging market conditions, increased costs, and operating on generally thinner margins. Increased uncertainty in the fishery and prices has led to less predictable operations which makes providing observers even more challenging. One provider mentioned they were seeing operational dynamics they have never seen before with more last-minute changes, including one instance where observers were on a flight, in route to a deployment when the vessel determined it was no longer economically viable to go fishing and they were tying up for the season. This environment increases stress levels, creates tension, and increases the potential for conflict on vessels. As one provider described, "no one is having fun right now."

Specific demands of the position

Many of the challenges related to observer recruitment and retention are related to specific challenges inherent to the job of an observer. Fisheries observing is difficult work, often requiring long hours in harsh environmental conditions. It is mentally and emotionally draining being isolated from family, community, and the comforts of home. Observer data collection is scrutinized often by those on the vessel as well as the agency. Information relayed to the FMA Division from observers indicates the importance of the data weighs heavily on observers. This, paired with potential harassment and hostile and intimidating work environments, impacts the longevity of observers in the position. Lastly, there is very little, if any, opportunity for career advancement. Overall, these circumstances don't lend themselves to long term participation in the field.

Regulatory requirements

As noted in section 2, regulations require observer candidates to have a bachelor's degree with a major in the natural sciences, 30 semester hours of biological sciences including the use of dichotomous keys and 5 semester hours in math and statistics. These specifics are becoming more challenging for candidates to meet as academic curricula evolve and remove potential candidates who may otherwise be successful observers. All providers mentioned that they have numerous applicants who do not meet these requirements. Specifying requirements in regulation allows for no subjectivity regarding a candidate's aptitude for the observer position, which seems particularly rigorous given the extensive training (120 hours of instructional time) that is provided and required for observer certification. However, the academic requirements do ensure that observer candidates have minimum qualifications and skill sets without which observer certification training may need to be extended to cover in adequate detail (e.g., use of dichotomous keys, foundational statistical sampling theory). Finally, there are also NMFS policies on minimum qualifications for fishery observers which apply to all federal programs. Lowering the qualifications in Alaska only, may push higher qualified candidates to other programs.

Structure of the observer system

The multi-layered structure with specific responsibilities of the observer program and observer providers makes it difficult for observers to know who to go to with different questions. This can lead observers to feel a lack of support and trust if concerns brought to providers are met with "that's not in our purview, talk to the agency" or vice versa. Additionally, vessels are the direct clients of the full coverage observer providers, which can lead to an awkward dynamic if challenges between observers and vessel personnel arise. This can be exacerbated by the fact that observer providers are competing for the same labor pool (potential observers) and client pool (industry vessels).

Changing demographics of the labor pool

New observers are often recruited after recently graduating college and the generational differences between the current cohort of graduates and past generations is often mentioned as a challenge towards retaining observers for longer tenures. Observers include a wide range of ages, from new hires just out of college in their early 20s to some longtime observers who can be in their 60s. Each generation is motivated differently. Generally, older generations are seeking more security and financial compensation, while recent graduates may be less focused on financial aspects and now especially tend to want shorter contracts, prioritizing work-life balance and mental health.

Management changes

Every change in fishery management that affects observer requirements, affects a provider's ability to fulfill those requirements and can affect the overall appeal of observing as a profession. Some of these changes may be more directly related to the management measure while other, less direct effects may be less predictable. For example, the direct effect of the trawl EM program is reducing the number of at sea observers needed as participating vessels move into the EM pool, which also reduces revenue generating opportunities for providers. Other, indirect effects associated with trawl EM include fewer deployments that require only observer certification and can accrue towards higher level endorsement requirements; and fewer catcher vessel deployments in the full coverage pool, diminishing the variety of deployment types available to help reduce the monotony and stress associated with deployments on catcher processors. Additionally, many of the vessels that moved into the trawl EM pool also participate in cod trawl fisheries which moved into full coverage with the implementation of PCTC. The combination of these two programs dramatically shifted the distribution in coverage requirements as PCTC created a spike in coverage requiring a lot of observers for a short amount of time and trawl EM reduced coverage requirements that could have spread out coverage into more evenly distributed effort. Less consistent, more sporadic work can also lead to increased observer attrition and challenges providing coverage. As one provider stated, "some people will come to work for just a month in February, but it is hard to get the numbers."

Additional sources

Challenges related to observer availability are not unique to the North Pacific. A recent report from the US Government Accountability Office focused on efforts to reduce and monitor bycatch stated that "(a)ccording to officials from NMFS headquarters and all five NMFS regions, recruiting and retaining enough observers to support the data collection needs across fisheries has been an ongoing challenge" (GAO 2024). This report specifically identified compensation rates that "have not remained competitive with other jobs for similar graduates (of marine biology from colleges around the country)," and working conditions such as "seasickness, contentious working relationships with vessel crew, and long deployments" as factors leading to low observer retention. The report noted that "some regions have outlined their resource needs for observers" but recommended that "NMFS identify and communicate resource needs from across the regions to support fisheries observers" (GAO 2024).

In 2016, NMFS conducted an anonymous online survey to current and former observers across regions, collecting information on the attitudes and experiences of fishery observers, and how those may impact their decision to stay in or leave the profession (Wang and DiCosimo 2019). Common reasons identified for becoming an observer included obtaining field work experience, career development or advancement, protecting the environment, travel opportunities, pay, seasonal work schedule, and ability to fill educational or employment gaps. Almost all respondents expected to spend five years or less as an observer. The survey also identified the following factors as potentially contributing to high turnover of observers: the unpredictable work schedule, potential distance from and lack of communication with home, and a demanding work environment. The National Observer Program is currently developing an updated survey.

Potential solutions

More professional approach

While there is widespread recognition that fisheries observing is not often a long-term career (although it can be for some), there was also an understanding that describing the position and treating the observers as a more professional occupation may help to maintain observers over a longer tenure. This approach can include many different tactics, from the framing of the position as more than a "stepping stone" during training, to providing increased feedback on the specifics and importance of how observer data are used in management, to potential resume building workshops or mentorship programs with more experienced observers that would help observers apply what they have learned in the field to more permanent employment opportunities.

A professional approach to observer development could also include a more professional compensation structure including typical professional non-salary remuneration such as more readily available health insurance plans, retirement plans, Employee Assistance Programs, and counseling/mental health services while deployed. Observer feedback through FMA indicates that observers would feel more valued if treated as an employee rather than short-term assistance and were made aware of their resources available to them, such as in an employee handbook.

Increased communication and support

Multiple strategies are used to increase a sense of community and provide support to observers in the field to counteract the inherent isolation of the position. The agency as well as some providers send periodic newsletters to observers in the field including information about events in port communities and assist in getting observers together when they may overlap onshore during periods of bad weather. Other strategies include more frequent communication between support staff and observers such as weekly virtual meetings with updates on current status of the fisheries and opportunities for newer observers to ask questions of more experienced observers and create realistic expectations for new deployment experiences. The addition of Starlink technology to most vessels may also help reduce the feeling of isolation and increase communication abilities for observers.

New recruitment strategies

Multiple providers discussed revisiting their recruitment and messaging efforts to reach recent college graduates more effectively. This may include increased social media presence or attendance at job fairs although there were mixed perspectives on the potential return on investment for job fairs that can be costly to attend. Some providers also mentioned it would be helpful to revisit the academic requirements that are set in regulation for observer candidates, particularly in relation to spring job fairs as interested candidates who do not have the prerequisites cannot adjust their schedules to meet educational requirements.

Compensation

Observer compensation was mentioned multiple times as both a recruitment and retention challenge (payment does not adequately compensate for the challenges and stress associated with the position), and as a solution (increased compensation to better match the challenges and requirements of the position will lead to easier recruitment and increased retention). The specifics of observer pay are complicated and the structure of compensation varies based on providers. Observer certifications and endorsements are held only by the observer, and they are not linked to the provider. Increased compensation linked directly to the type of endorsement needed by each provider may help fill needs across different time periods, particularly if one observer provider has the majority of the market share of a particular fishery. Multiple strategies that may not increase observer wages but could increase compensation were mentioned, such as bonuses for outstanding performance or data quality, reimbursing travel costs to observer trainings, providing comprehensive health insurance benefits, allowing observers to maintain benefits between deployments, or providing more overall benefits.

As noted in section 2 a single observer provider is awarded the partial coverage contract, a federal contract between NMFS and the observer provider company, whereas the full coverage observer providers do not operate under a federal contract. Instead, full coverage observer providers are permitted by NMFS and contract observer services directly with vessels and processing plants. Because federal contracts are subject to numerous federal regulations, the compensation structure for partial coverage observers is much more regimented. The partial coverage contract holder does not have control over many wage and benefit requirements that are set by the Department of Labor such as minimum wages, overtime pay requirements, and fringe benefits including health insurance, paid sick leave, paid vacation, and holiday pay. Some of these same benefits may not be provided under the pay-as-you-go model, where a day-rate pay scale is more frequently used than hourly rates plus benefits. All travel costs and expenses incurred in partial coverage are reimbursed in accordance with the Government's Travel Regulations. These include specified per diem rates which are paid regardless of actual expenses. Full coverage providers have more flexibility as to how they invoice travel expenses and can use non-invoiced travel options such as having observers ride a vessel to Alaska and/or be carried aboard a chartered flight paid for by a fishing vessel company. While full coverage providers may have more flexibility in some regards, observer contracts are still covered by union contracts which are negotiated regularly. Additionally, full coverage providers are competing for business in a constant market (the number of vessels requiring observer coverage is relatively fixed) so if wages are raised and those costs are passed onto vessels, there is a risk of losing business to competitors.

Certified observer providers are required to submit to NMFS copies of all of their invoices for observer coverage. The observer invoice data are confidential under section 402(b)(1) of the Magnuson-Stevens Act and information submitted regarding compensation cannot be disclosed. Current public postings for observers in North Pacific fisheries do not include specific compensation information. If compensation information were publicly available, it would not be feasible to compare compensation plans because the differences in pay structure vary among providers and it is difficult to determine how much an observer will earn during a set time period.

Agency strategies

The National Observer Program (NOP) has focused recent efforts on observer recruitment and retention, including developing the following strategies and programs:

- Observer Survey – In 2016, the National Observer Program published a survey on fishery observer attitudes and experiences (Wang and DiCosimo 2019). The NOP is currently developing another survey that should be distributed soon with many of the same questions as well as additional ones focused on recruitment and retention.
- Mentorship program - NOAA staff mentor interested observers about potential career opportunities available for experienced observers.
- Progression stories - Creating NOAA staff shorts for professionals who started as observers documenting how they progressed to their current career after working as an observer.
- Universities -Collecting contact information and surveys for universities to gather information for the regions. Potentially sending colleges and universities 1-2 flyers a year to promote observing. Also potentially having an annual webinar for recruitment to universities, etc.
- Flyers - Flyers for each region are being created for observer recruitment at outreach events, etc.
- Webinars - Potentially hold webinars for current observers to illustrate the different ways observer data is used.
- Veteran to Observer Program (Vet2Obs) - Identifying mechanisms to hire military veterans into observer programs nationally. This includes developing a pathway for Regional Administrators to waive observer educational requirements for veterans to be considered eligible candidates for observer training. In addition, the NOP is developing a Vet2Obs recruitment and marketing campaign and working with military bases and other military Transition Assistance Programs and groups to promote observing as a job option for veterans.
- Creation of the fisheries.observer@noaa.gov email address to facilitate recruitment and retention efforts.
- Creating a permanent listing on popular job boards that links the fisheries observer NOAA web page and links to current permitted contractors.
- Developing an art contest for observer artwork.
- Updating the NOP website to provide additional information for those interested in becoming an observer.

The FMA division has implemented numerous strategies to assist observer providers to support their recruitment efforts. Some examples are as follows:

- Upon request, registration deadlines can be extended
- Increase capacity for 3-week training from 25 to 30 attendees.
- Dichotomous keys: If unable to receive official documentation from a professor or university outlining extensive use of dichotomous keys per the regulations, observer applicants may provide supplemental documentation that illustrates their usage and experience. This includes defining in the applicant's own words what is a dichotomous key, the process of using a key, the name of the key, and specific examples as to how they actually used it.
- Degree confirmations: consider and conditionally approve qualified applicants who have completed all degree requirements, but have not received their official degree confirmation. The otherwise qualified applicant can be conditionally approved and all official paperwork must be submitted prior to the last day of training.

6 Conclusion

Observer availability and demand is a complicated and dynamic subject. Data show that there is a surplus of qualified observers for assignments under current management requirements (including recent regulatory changes). However, these data include any qualified observer whose current certification meets the endorsement requirements and likely includes numerous observers who are not actively interested in observing and would not accept a deployment. Given currently available data it is difficult to estimate an accurate number of observers willing and able to accept an assignment at any given time. While there may be some adjustments that can be made to increase the pool of potential observers, many of the challenges are either inherent to fisheries observing or general factors that affect the overall labor pool. Observer providers and NMFS are working on a number of strategies towards improving observer availability and these are largely outside the scope of Council influence. The Council should consider impacts of management changes on monitoring requirements in context of the current overall observer requirements including potential cumulative and indirect effects on observer demands.

7 Contributors and Persons Consulted

Contributors
Phil Ganz, NMFS AKRO SF
Andy Kingham, NMFS AFSC FMA

Persons Consulted
Rochelle Barainca, NMFS AFSC FMA (NOP Lantern)
Jennifer Ferdinand, NMFS AFSC FMA
Josh Keaton, NMFS AKRO SF
Jennifer Mondragon, NMFS AKRO SF
Melanie Rickett, NMFS AKRO SF
Gwynne Schnaittacher, NMFS AFSC FMA

Haley Anderson, AIS Inc
Rebecca Hailey, AIS Inc
Stacey Hansen, Saltwater Inc
Michael Lake, Alaskan Observers Inc
Chelsae Radell, Alaska Groundfish Databank
Luke Szymanski, AIS Inc
Sarah Williamson, FMAC observer seat

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