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# The Observer Declare and Deploy System of the Alaska Fisheries Science Center

C. Faunce, M. Moon, P. Packer, G. Campbell,  
M. Park, G. Lockhart, and N. Butterworth

**October 2021**

U.S. DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric  
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National Marine Fisheries Service  
Alaska Fisheries Science Center

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# The Observer Declare and Deploy System of the Alaska Fisheries Science Center

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## **U.S. DEPARTMENT OF COMMERCE**

National Oceanic and Atmospheric Administration  
National Marine Fisheries Service  
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## **Abstract**

What follows is a description of how trip-selection is accomplished in the North Pacific. Specifically, it is a description of the web-based system designed to determine which fishing trips are required to obtain observer or electronic monitoring coverage in the Federal groundfish and halibut fisheries of Alaska. Because the system was first designed to use declared trips to deploy observers, it has been termed the Observer Declare and Deploy System (ODDS). The ODDS was created and is maintained by the Fishery Monitoring and Analysis Division (FMA) of the Alaska Fisheries Science Center. This document describes the ODDS as of August 2020.

The description is divided into several sections, each designed around a different reader interest. A history of the program and the need for ODDS is first described. Next is a verbal description of the rationale behind its functions. The user experience is described in the next section. This document then contains detailed programming logic and workflow for the technically minded. Finally, we provide lists of recommendations for future directions based on current challenges with the System.



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# 1. WHY WAS ODDS BUILT?

## 1.1 Introduction

### 1.1.1 *The North Pacific Groundfish Observer Program*

#### 4.2.1.1 *History*

The groundfish in Alaska waters – (i.e.,- the Bering Sea and Aleutian Islands (BSAI), and the Gulf of Alaska (GOA)) - have been commercially harvested since the first Japanese fishing vessels arrived in 1933 (Nelson et al. 1981, French et al. 1982). Over the next several decades these waters were exclusively fished by foreign vessels. The quantity and types of species that was being harvested by these vessels was largely unknown to the people and government of the United States (US).

In 1976 the United States was granted authority over Alaska marine resources with the passing of the Fishery Conservation and Management Act. Within this authority, foreign vessels fishing within the U.S. fishery conservation zone were required to accept and provide accommodations for observers at their own cost. Observers are people trained and deployed to gather information from the nation's fisheries under the authority of the National Marine Fisheries Service (NMFS). Observers have been monitoring fishing vessel operations in the BSAI since 1973 and in the remainder of Alaska since 1975 (Wall et al. 1981, French et al. 1982). Prior to 1976, observers were only deployed at invitation by host countries. The original goals of the observer program were to monitor catch rates of Pacific halibut (*Hippoglossus stenolepis*), king crab, Tanner crab and Pacific salmon and to verify catch statistics and collect biological tissues (e.g. otoliths).

The development of a domestic fishing fleet started with catcher-only vessels that did not freeze were not capable of turning catch into products. In 1986, joint venture operations began combining - mostly between American-owned catcher vessels and Russian and Japanese catcher processors. Observers were only deployed on foreign vessels and were not deployed onto vessels under domestic ownership. Over the next four years, the ratio of domestic to foreign fishing operations increased (and observation of fishing operations in Alaskan waters consequently decreased) until an exclusively domestic fishery was established.

A domestic observer program became effective February 7, 1990 (55 FR 4839, February 12, 1990) through Amendments 13 and 18 to the groundfish Fishery Management Plans (FMP) for the BSAI and GOA respectively. These regulations established observer coverage requirements for vessels and processors participating in the groundfish fisheries. At-sea observer coverage was set at 30% (of fished pots, otherwise of fishing days) for vessels  $\geq 60$  and  $<125$  feet long within a calendar quarter plus one trip within each fishery a vessel participated in, while 100% observation was required for vessels greater than 125 feet long. These observer services were obtained from an observer provider company that had been certified by NMFS. Observers were paid for directly by the observed fishing industry. The domestic observer program became known as the North Pacific Groundfish Observer Program, and will be referred to hereafter simply as the observer program.

#### 4.2.1.2 *The need for change*

The sampling design used by the observer program has remained largely unchanged since 1990. Observers sample from the total unsorted catch at-sea according to a hierarchical nested design (Haul > Species Compositions > Lengths > Tissues) with randomization at each level to control for bias (Cahalan and Faunce 2020). However, the regulatory structure of observer deployment resulted in industry control of which fishing events were subject to monitoring. This deployment mechanism led to concerns that resulting observer coverage was biased through unrepresentative fishing (i.e., observer effects, *sensu* Benoit and Allard 2009). Indeed, observer effects have been demonstrated in the North Pacific (Faunce and Barbeaux 2011). However, the regulations governing observer deployment in the North Pacific would not change for two decades.

#### 4.2.1.3 *The restructured program*

In their 8 October 2010 meeting, the North Pacific Fishery Management Council (Council) voted unanimously to change the way that observers were to be procured and deployed among the Alaska fishing fleet starting in January of 2013. Briefly, the Federal observer program applies to any vessel retaining Individual Fishing Quota (IFQ) or Community Development Quota (CDQ) halibut or sablefish (*Anoplopoma fimbria*), vessels fishing groundfish in Federal waters (3-200 nm, where a Federal Fisheries Permit, or FFP is required) and vessels holding a FFP fishing in State waters (<3 nm) while a Federal fishery is simultaneously open (so-called “parallel fishery”). Vessels fishing without an FFP in State waters or within a State managed fishery do not fall under the regulatory authority of the NMFS observer program.

The restructured observer program, as it came to be known, retained two classes of observer coverage for vessels fishing for groundfish and/or halibut: a “full-coverage” (100%) class and a “partial-coverage” class (< 100%). Vessels in full coverage would continue to obtain observers through a suite of NMFS permitted observer provider companies, and pay for observer coverage on all of their fishing trips. Vessels in partial coverage would be assessed an ex-vessel fee that would fund observer coverage in future years (“start-up” funding for partial coverage in 2013 was provided by NMFS). Observers in partial coverage would be deployed through an observer provider company that was directly contracted with NMFS. Since the full-coverage fleet operations followed the *status quo* method of payment and deployment, the partial coverage fleet became known as the “restructured fleet”<sup>1</sup>.

Restructure was important because NMFS was given control over observer deployment in the North Pacific for the first time in its history. The challenge now was how to accomplish randomized observer deployment into the fishing operations of the North Pacific as recommended in external reviews and internal audits (MRAG 2000, USDOC 2004). The restructured program also established an annual “review, revise, and repeat” cycle through the Council process. Each year, NMFS presents its draft and final Annual Deployment Plan (ADP) for deploying observers into the partial coverage fleet in October and December respectively and each June reports on its performance relative to the previous ADP<sup>2</sup>.

The ADP of each year identifies vessel characteristics that define groupings of partial coverage fishing operations that share the same deployment method and selection rate for monitoring (i.e., *strata*). In the 2013 and 2014 ADP, observers were proposed to be deployed according to two methods (NMFS 2013a, NMFS 2013b). The first of these was termed “trip-selection”, in which observers are deployed onto a vessel for a single trip at a time. The second of these was termed “vessel-selection”, in which an observer is deployed onto a selected vessel for every trip within a pre-determined selection period. Based on performance results of the first few years of the restructured program trip-selection has been solely used for deploying observers onto partial-coverage vessels since 2015.

Electronic Monitoring (EM), where a system of cameras and electronic sensors are used instead of an observer to capture imagery for catch estimation, was also formally introduced as an alternative to carrying observers when the observer program was restructured in 2013. Vessel operators and owners may request NMFS to carry EM instead of an observer prior to the end of each year. EM in the North Pacific is unique among US regional areas managed by NMFS in that it is used for estimating catch composition, quantity, disposition, and location and is not 100% monitored.

#### 1.1.2 *Purpose of this document*

What follows is a description of how trip-selection is accomplished in the North Pacific. Specifically, it is a description of the web-based system designed to determine which fishing trips are required to obtain

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<sup>1</sup> For more complete history of the restructured observer program see Faunce (2013).

<sup>2</sup> This performance measure is reported as a chapter in Annual Reports and separately as a NOAA Technical Memorandum (e.g., NMFS 2019, Ganz et al. 2020).

observer or electronic monitoring coverage in the Federal groundfish and halibut fisheries of Alaska. The description is divided into four main sections. In the next section, the system development and key processes are described to address several key questions: 1) how to achieve a sample from an unknown population; 2) how to accommodate the logistics of observer and EM deployment; 3) how to avoid gaming of the system while maintaining flexibility; 4) how to accommodate the conditional release of observer coverage; 5) how to accommodate the logistics of EM; and 6) how the system is monitored.

Another section documents the user experience. Another is designed for the technically minded and contains the programming logic and workflow behind the ODDS. The final section lists ongoing drawbacks and recommendations for future directions based on current challenges.

Because the system was first designed to use declared trips to deploy observers, it has been termed the Observer Declare and Deploy System (ODDS). The ODDS was created and is maintained by the Fishery Monitoring and Analysis Division (FMA) of the Alaska Fisheries Science Center<sup>3</sup>. This document describes the ODDS as of August 2020.

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<sup>3</sup><https://www.fisheries.noaa.gov/about/fisheries-monitoring-and-analysis>.

## 2. HOW DOES THE ODDS FUNCTION?

### 2.1 How the ODDS Samples from an Unknown Population

#### 2.1.1 Sampling theory and terms of reference

The ensuing discussion on sampling design requires clear definition of some widely used statistical terms. A *population* is the entire group that one wishes to make inferences about. Information about a population may be gathered through a complete accounting of all items within the population (i.e., a census) or by gathering information on a smaller component of the population (i.e., a sample). Since there may be no fisheries monitoring program large enough to conduct a census, the target population (the population of interest) may not be identical to the sample population (the population available to be quantified). When the sample population is divided into equal measurable units, the units themselves are termed *sample units*, whereas the list of sample units comprises the *sample frame*. Each element of the sample population must be in one and only one sample unit, and the total of all sample units comprises the sample population. When sample units are selected according to some predetermined manner, we have a sample.

Sampling offers advantages over a census approach in that it is more cost-effective, faster, has greater utility, and can be more accurate if applied in conjunction with sampling theory (Cochran 1977). In addition, the likelihood of data being lost due to improper methods by the observer are reduced in sampling over a census approach, since in the former case an additional sample using proper methods may be attained from the sample frame, whereas in the latter there is no way to correct for improper data collection. The way in which samples are collected (i.e., the sample design) has meaning because it affects how you estimate the total.

The extrapolation from the sample to the population can be considered valid only if the sample is representative of the whole population. This representativeness is guaranteed by the selection of sample units according to a randomization scheme, otherwise known as random sampling (e.g., Fisher 1925; Thompson 2002). Because every item in the sample frame has an equal (and known) probability of being included in the sample, the use of random sampling protects against subjectivity or bias in sample selection by the observer.

Sample frames may be subdivided into *strata* with similar characteristics. Sampling efficiency is increased when between-strata variance is maximized and within-strata variance is minimized. Variation among sample units can be used to examine sampling effectiveness (by generating measures of dispersion or variance such as confidence intervals, standard errors, coefficients of variation, etc.; the opposite of dispersion is precision). Since it is desirable to obtain estimates of target metrics that are unbiased and precise, a final advantage of random sampling is that the variance of the estimate will decrease with increasing sample size in a predictable manner. In this way, sample size analysis can be used to assess the degree of precision expected for a given sample size (and hence for a given cost).

The ODDS works by creating a sampling frame for random selection processes using the anticipated trip as the primary sampling unit. The entire sampling frame over the course of the year for a deployment stratum is built one logged trip at a time. The objective of trip-selection is to obtain a representative sample of the population of fishing trips from the partial-coverage fleet. In the following sections, we describe the steps necessary to enable trip-selection in the North Pacific. These include defining the vessels in the trip-selection pool, identifying the primary owners associated with each vessel, populating a list of permitted operators (ODDS users) for each owner that will log trips, and facilitating the logging of anticipated fishing trips. These steps represent a hierarchy where deployment strata define the vessel operation type and vessel > owner > user > trips.

### 2.1.2 Defining vessels in the trip-selection pool

Identifying which vessels are in the partial-coverage fleet is important since each vessel will be required to log trips and the resulting list of logged trips constitutes the target population for sampling and assigning observer and EM coverage.

The ADP specifies which vessels belong to the partial coverage fleet for the coming year, their

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ODDS is the mechanism to assign anticipated trips to strata and to achieve a random sample at the desired rate.

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identifying strata, and the selection rates for each strata. The selection rates determine the portion of trips that are desired to be sampled (e.g., strata 1 may be defined as catcher vessels logging with hook and line gear, and they are selected at a 15.24% rate). The strata definitions and selection rates in an ADP can change from one calendar year to the next to achieve efficiency, cost savings, and data collection goals (Figure 2-1). Multiple trip-selection strata can be defined in an ADP, however their definitions must be mutually exclusive between trips. For each logged trip it is important that the appropriate stratum be identified, since this will determine the selection probability of the logged trip.

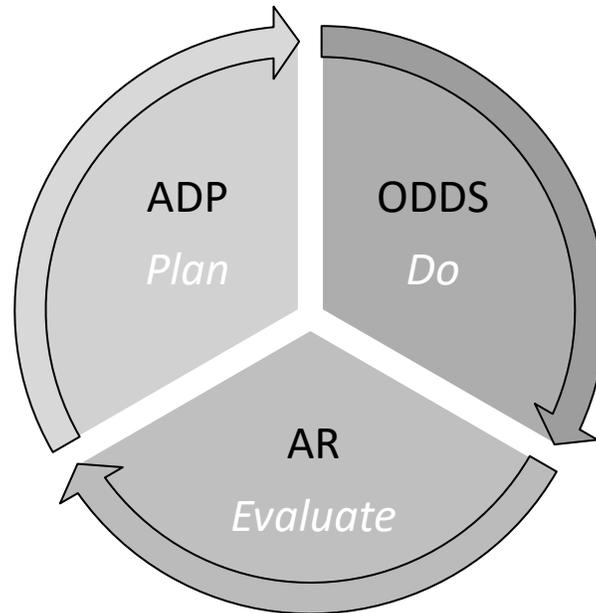


Figure 2-1. -- Relationship between the Annual Deployment Plan (ADP), Observer Declare and Deploy System (ODDS) and the Annual Report cycle for the Observer Program. AR cycle covered in detail in section 2.4.

The ODDS is the mechanism to assign anticipated trips to strata and to achieve a random sample at the desired rate. Thus, the system must be available to all partial coverage vessels identified in an ADP. While the strata definitions may change between ADPs, the partial coverage fleet is defined in regulation (Subpart E of 50 CFR part 679)<sup>1</sup>. Briefly, the federal observer program in Alaska waters applies to any vessel retaining IFQ or CDQ Pacific halibut or sablefish (*Anoplopoma fimbria*), vessels fishing groundfish in federal waters (3-200 nautical miles [nmi], where a Federal Fisheries Permit, or FFP is

required) and vessels holding a FFP fishing in state waters (< 3 nmi) while a federal fishery is simultaneously open (so-called “parallel fishery”). Vessels fishing without an FFP in state waters or within a state managed fishery do not fall under the regulatory authority of the NMFS observer program.

The original list of vessels in trip-selection was generated from past fishing activity and stored as a table in the ODDS. Those vessels with prior activities that would fall under the new partial coverage trip-selection pool were included in an initial list of potential trip-selection vessels. This initial list can differ from the actual list of vessels that fish in two ways. In the first, vessels identified as belonging to the strata based on past activity may not actually fish in the upcoming year. This difference is not too troubling since vessels that do not fish do not need to log trips into the ODDS. A greater concern is when vessels that have not been identified as needing to log trips by NMFS engage in activities that later define them as belonging to trip-selection strata. This scenario is troubling because it can result in biased observer deployment. To reduce this potential negative outcome, NMFS does outreach to the fleet to request an ODDS account via email<sup>4</sup>. In addition, landing records are monitored throughout the year. If a trip-selection landing report is made by an unexpected vessel (a vessel that is not included in the trip-selection strata vessel list), then three actions are triggered: the vessel is referred to the NMFS Office of Law Enforcement (OLE), the vessel is added to the appropriate vessel list, and the vessel owner is sent a selection letter described in the next section. In this way the list of vessels that belong to trip-selection strata increase over time and is only reduced through a change in stratum definition or through notification to NMFS from vessel owners.

### *2.1.3 Identifying the primary owners and operators of a vessel*

The creation of strata in itself does not enable the trip-selection process. To accomplish this, vessel owners are assigned an initial username and password and these values together with contact information populate a separate table that is connected to the list of vessels. The ODDS allows vessel owners to assign operators (also with their own username, password, and contact information) to one or several vessels they own. Since an owner can have multiple vessels, and a vessel can have more than one captain and vice versa, a table of users associated with each vessel and owner is generated in a many many-to-to-many relationship.

### *2.1.4 How trips are logged for fisheries monitoring*

Vessel operators of partial coverage vessels are required to declare intended fishing trips in the ODDS. The process of logging trips for the user of ODDS is detailed in Chapter 3 and the programming logic is detailed in Chapter 4. Therefore here we only present the main steps. To log a trip the user selects the “ODDS Login” button on the splash screen where they are prompted to enter their username and password. This information is verified through the authentication schema described above. Once verified, users can “View or Log Trips”, they can “Manage Captains”, and they can update their contact information by selecting “Your Contact Information”. Selecting the first of these options opens a pull-down menu that contains a list of vessels associated with the user. Once the user selects a vessel, further results are constrained to that vessel and a new trip history page is presented. This history page contains a table that stores the details of trips already logged. Trips that are not yet realized are considered to be “pending,” and these trips are also depicted on a calendar. The ODDS was programmed to limit the number of pending trips that can exist for a vessel to three. The trip history page contains a “Log New Trip” button. If the number of pending trips in the vessel history is less than four the button is blue and can be selected, otherwise the button is gray and does not function. Upon selecting Log New Trip (assuming enabled), the user is presented with the Add Trip Plan page where they can enter the trip details.

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<sup>4</sup> odds.help@noaa.gov

Users are prompted with a series of questions about their intended fishing trips that include those criteria needed to assign the trip to a pre-defined trip-selection stratum from the ADP. These include items known before a fishing trip begins (such as gear type) to improve the chances that the selection rate applied to the logged trip is the proper rate for the intended trip and to provide time for the observer or EM provider company to obtain coverage by the anticipated trip start. Features of a trip such as principal species and areas targeted cannot be used in the selection process since they are not always those realized during fishing operations (Borges et al. 2005).

The ODDS prompts users with some questions that serve as filters to reduce the chance that a trip requiring full coverage is not accidentally assigned to partial coverage stratum. This is important since accidental assignment of full coverage trips to partial coverage expends unanticipated funds from partial coverage budgets. If a logged trip has been identified as requiring full coverage, the vessel operator is prompted with this information and instructed to obtain their observer from an observer provider and not log the trip in the ODDS. A link to approved provider companies is provided in the dialog box.

Upon entering all of the required fields, the user selects an add/save button that logs the trip. Once logged, the trip is assigned to a deployment stratum, given a unique identifier known as the trip plan log sequence, and the trip enters the selection process (Fig. 2-2).

#### *2.1.5 How trips are selected for fisheries monitoring*

The ODDS sample selection follows a simple random sampling design and the ODDS facilitates different selection probabilities for each stratum. The selection process for a logged trip is quite simple: The trip is assigned a four-digit random value from zero to one inclusive of the endpoints. The random number is compared against the selection probability for the stratum in the selection table that derived from the ADP (An ADP selection rate of 15.34 % is stored in the ODDS as a selection probability of 0.1534). Each stratum can have multiple random selection values to adjust within the year if needed. To accommodate this, each random number value for each stratum has an effective start and end date. This date is compared to the system date to ensure the correct selection rate is applied to all logged trips. Trips are selected for observer coverage if the random number assigned to the logged trip is equal to or less than the appropriate selection probability. These trips are termed “selected trips”, while trips with a random number outcome larger than programmed in the ODDS are termed “unselected trips”. The random number and selection outcome is retained for all logged trips and stored in a monitor table. However, the most important part of the selection process is that it is unique to each logged trip - a new random number is generated for each logged trip.

#### *2.1.6 The disposition of logged trips*

Logged trips that have not been occurred are pending, and given an “open” status in the ODDS. Trips that have been realized are considered “closed.” Trips can be closed in two ways depending on the selection status. If the logged trip was not selected for monitoring, then the trip must be closed by the vessel operator. This can be accomplished in two ways. In the first, the user can enter the realized start time, date and port and the end time, date and processor in the ODDS. In the second, they can select from a pull-down menu of known deliveries for their vessel prior to the system date. This second method is accomplished by linking the ODDS to the eLandings system<sup>5</sup> that tracks all fishery landings made by fishing vessels in Alaska. The pull-down utility is facilitated by matches made based on processing port, vessel identification and date ranges.

The method to close a trip that has been selected for monitoring requires a different approach. Trips selected for monitoring are no longer under control of the vessel operator in the ODDS (Fig. 2-2). Instead, control of this trip is transferred to the observer provider or EM provider company responsible for

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<sup>5</sup> <https://elandings.alaska.gov/>

monitoring the trip, and the user is prompted to contact them with any anticipated changes. Trip details may still be changed, but are now under time and other trip logging constraints as explained in section 2.2. This effectively removes the NMFS from the day-to-day work of logistics associated with fishery monitoring.

Observer providers have different user permissions in the ODDS. One feature is the ability for them to see all of their available observers, if they are available for deployment, and what trips are anticipated to occur that require monitoring. An observer provider can assign an observer to an anticipated trip and once this occurs, the trip is functionally “closed” for the vessel owner and no longer counts towards allowable trip log limits. The ODDS identifies a trip as closed when there is the presence of observer logistics data associated with the trip between the trip start and trip end dates.

## **2.2 How the ODDS Maintains Flexibility and Order**

There are always unforeseen events that happen prior to fishing (for example, weather). For these reasons, flexibility was needed in the ODDS – the NMFS cannot direct fishers to fish on a given date at a given time or deliver to a given port. To accommodate flexibility, trip cancellations are allowed and more than one trip may be logged in advance. However, time constraints are placed on the flexibility to preserve the original intent of deploying fishery monitoring tools into fishing events randomly. The ODDS handles trips monitored with EM differently from those monitored with observers since the use of the former was developed more recently. Therefore, EM trip processes in the ODDS are described separately here and in subsequent sections as needed.

### *2.2.1 Observers*

Building from the successful implementation of similar systems (Palmer et al. 2016), the ODDS was designed with the intent that trips should be logged by users no less than 72 hours in advance. Indeed, this is a regulatory requirement for selected trips to be monitored by an observer (679.51). That concept was replaced with the ability to log trips with less than 72 hours’ notice with the constraint that if selected, the observer provider responsible for monitoring the trip would have the option to delay the trip to 72 hours if desired. This flexibility is meant to provide the fishery monitoring provider with enough time to accomplish their own logistics to accomplish the goal of monitoring the trip. The provider may not have an available observer to deploy, or may feel the trip is too costly to monitor. The provider may request a pre-departure waiver request from NMFS, and the ODDS stores whether or not this request is made before or after the anticipated trip start. NMFS reviews the request and the ODDS stores the outcome of the request. If the request is accepted, the trip is changed from “selected” to “waived”, and the trip is now treated by the system as an unselected trip. If the request is denied, then the trip is changed from “selected” to “not selected – contractor default” and the trip is functionally a not-selected trip.

The ODDS has an additional protection for the vessel owner; the observer provider must not only provide an observer by the anticipated start date, but also guarantee the trip will be observed up to 48 hours after the anticipated start date. This allows flexibility with respect to weather or unforeseen events without having to cancel the trip.

The 72/48 hour rules carry with them different permissions and penalties for trip cancellations. All cancellations free the observer from the trip assignment and they are free to be assigned to other selected trips. Prior to the 48h past sail period, a trip may be cancelled by the vessel operator. In this scenario, the ODDS stores this as a “vessel cancelled selected trip” description of cancellation. If a selected trip for which an observer has been assigned has not sailed after 48 hours of the start date, the trip is cancelled automatically and the system stores a “vessel failed to depart on a selected trip” description of trip cancellation for the vessel. Both of these actions affect future selection rates for the vessel as explored more in section 2.3.

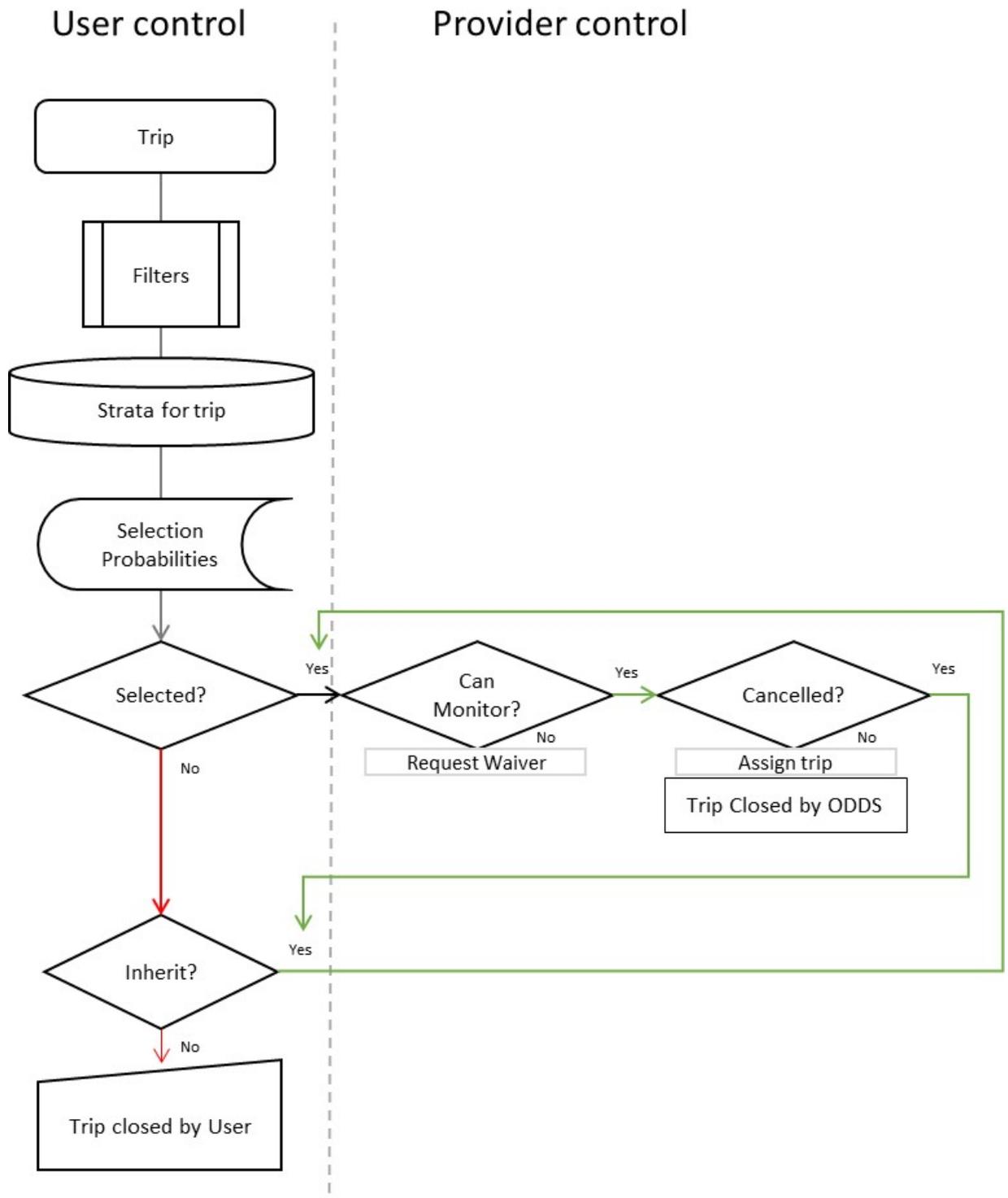


Figure 2-2. -- Main processes of trip-selection in the ODDS.

### 2.2.2 *Electronic monitoring*

Unlike stratum that rely on observers for monitoring trips, regulations prohibit the NMFS from requiring EM as a fishery monitoring tool. Therefore, EM strata in each ADP are populated only by those vessels that volunteer and are approved by the NMFS. These processes necessitated additional ODDS functionality. These include storing volunteers, vetting volunteers, establishing and approving vessel monitoring plans (VMPs) and facilitating an appeal process.

Vessels volunteering for EM began to be selected for monitoring in the ODDS in 2018. Although the ODDS was built to facilitate the use of EM on trawl gear vessels, this document will focus on the use and rules governing the regulated fixed-gear EM program. Using the ODDS, vessels may submit a request to the NMFS to opt in to or out of the EM selection pool before November 1 of every calendar year. Any vessel that does not request to participate by this deadline will not be eligible for the following year's EM selection pool the following year and will be included the observer trip-selection pool. To accommodate the request process, the ODDS tables were populated with a list of all eligible vessels for EM request following the eligibility criteria outlined in the most recent ADP. These vessel operators have the functionality of selecting a "request EM coverage" button between September 1 and November 1. Screening of EM requesting vessels is done by FMA staff outside of the system. However, the results of the screening are usually made by December 15<sup>th</sup>. The decisions by the NMFS populate a table in the ODDS that returns the decision to the eligible vessel list table and is used to generate two form notices – one for vessels accepted into the EM pool and another for those vessels which were not accepted. These notices appear to the user upon their subsequent login.

If a vessel is denied their request for EM coverage, they may appeal this decision (called a 679.51 appeal). This creates a problem for fisheries monitoring – the vessel is neither in the observer coverage pool nor is it in the EM coverage pool. The ODDS handles this by considering this vessel in observer coverage with a zero probability of selection. The appealing vessel may still log trips and fish as normal. However, once a decision regarding the appeal has been made, the vessel is placed into the EM selection pool or the observer pool (depending on the decision). Vessels subject to observer coverage enter anticipated trips as described in earlier sections (Fig. 2-3).

Vessels that have been accepted to the EM coverage pool however are not allowed to log trips and are not assigned to EM strata until they submit an individual Vessel Monitoring Plan (VMP) to the NMFS and it has been approved. This is because the NMFS only specifies the information that is required to be collected for EM coverage, but does not provide the means to achieve this coverage. Individual EM provider companies work with the vessel owner to submit a VMP. The EM portion of the ODDS was built so that NMFS users could upload and attach .pdf forms to the request records of individual vessels. Once a VMP has been accepted by the NMFS, the vessel is then placed into the EM stratum and can log trips. A VMP may enter a "Needs Modification" status, in which case trip logging is reduced to one at a time. If however, a modified VMP rejected by the NMFS, the vessel may not log EM trips and remains in observer coverage and cannot log EM coverage trips. The vessel owner may appeal the VMP decision (called a 15 CFR 906 appeal) and is then placed in a EM stratum with a zero selection probability. If, or once the appeal is denied, the vessel reverts back to requiring a VMP and cannot log EM trips (Fig. 2-3).

As for trips requiring observers, there are some trips logged that require special attention because of pre-existing regulations. One of these is the requirement that vessels that are fishing IFQ in multiple IFQ regulatory areas be fully monitored. Normally this would be flagged as a full coverage trip and the trip would be flagged as such and omitted from the ODDS. However, the NMFS decided that the use of Electronic Monitoring offered a unique ability to handle this situation in the ODDS. As such, when users indicate a "multiple area IFQ trip," the system will flag that trip as selected for compliance monitoring to distinguish this trip-selection from pure random selection (Fig. 2-4). This distinction allows for the amount of this activity to be quantified as well as enables proper evaluation of the trip-selection procedures in annual reports described in section 2.4.

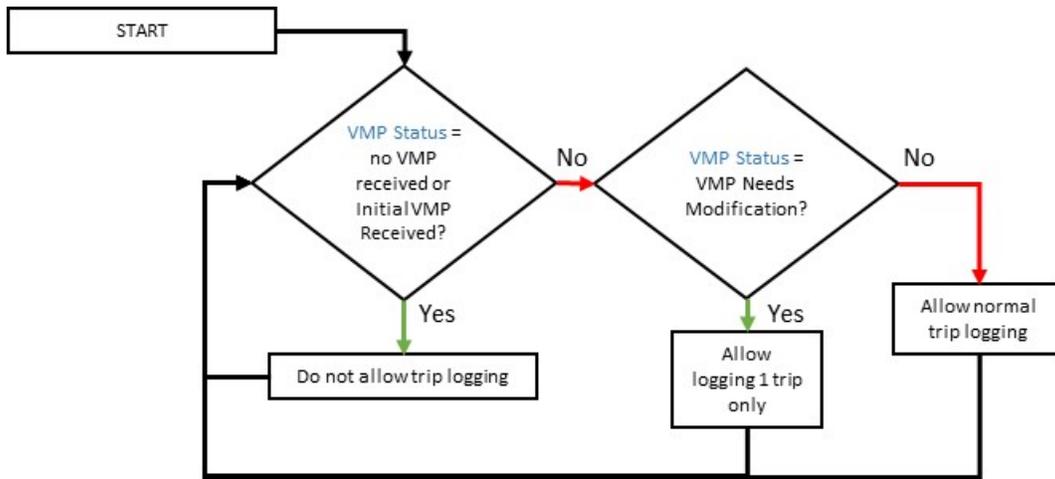


Figure 2-3. -- Trip logging rules for EM selected trips depending on VMP status.

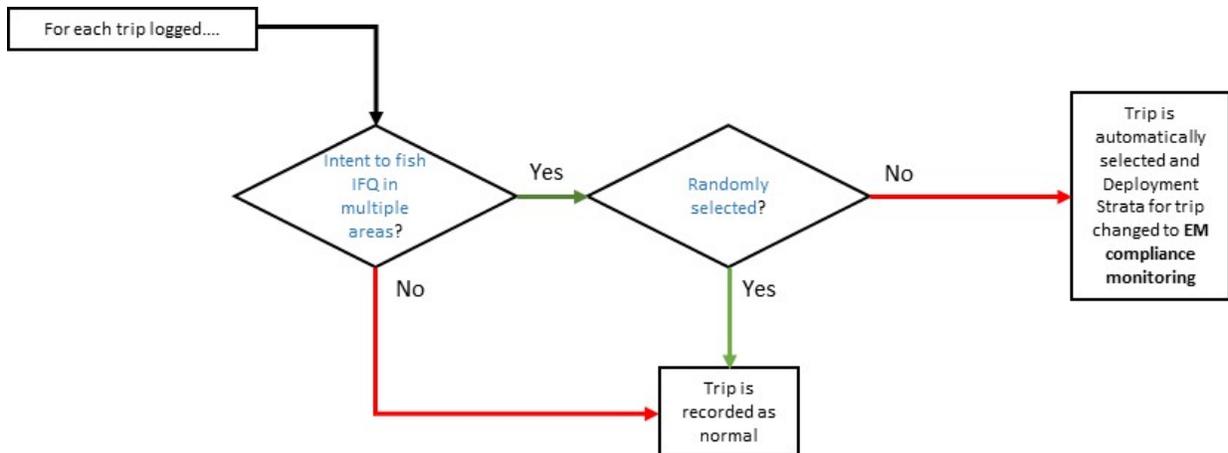


Figure 2-4. -- Types of EM selection.

### 2.3 How the ODDS Avoids Gaming

As stated by Hall et al. (2000): "...the determined violator can circumvent nearly any monitoring system employed to manage and enforce a fishery," and observer and deployment effects are present in fishery monitoring programs (Benôit and Allard, 2009, Faunce and Barbeaux, 2011). Building flexibility into the ODDS means that there is more room to "game the system."

Three mechanisms are present in the system to help prevent gaming. The first is the concept of an inherit, the second is a cascade cancel, and the third is how trips left open at the end of the year are treated. An *inherit*, is when a trip that was previously "not selected (to be monitored)" inherits a "selected" status from a previously cancelled "selected" trip. Since the inherit only affects previously "not selected" trips, it only serves to increase the overall coverage rate of an individual vessel (Fig. 2-2).

When the system was first designed, it was envisioned that the cancellation of a “selected” trip would automatically assure the next logged trip in sequence was to “selected.” This became known as the “next logged trip” rule. However, it was interpreted by policy makers as the next *newly* logged trip rather than the next logged trip to be conducted by the vessel. This interpretation was problematic because the ODDS allows for up to three trips to be logged at time. Consequently, the ODDS was programmed so that the time of a “selected” trip cancellation is logged and the next logged trip (based on system time) receives the inherit. Inherits work on a 1:1 ratio – if two anticipated selected trips are cancelled, two inherited trips must be realized before returning to a normal randomization outcome of the selection process.

While the inherit process serves to discourage cancellation of selected trips, it does not encourage keeping the trips in their original order in time. To encourage keeping the original order of logged trips, the system was programmed with a “cancel cascade” feature. Basically, when a trip is cancelled, the system looks for any open trip that has an anticipated start time before the system time of the cancellation. For any logged trip meeting this condition, the trip is automatically cancelled by the system. Cancel cascade does not cause inherits, but works in tandem with them – a cancel cascade also causes an inherit for any logged trip that with a the start date is after the system time for of the cancellation (described in detail later in section 4.4.2).

When selection rates are not held constant between years, there can be trips from one year that affect the overall number of selected trips the following year. Consequently, the sampling rate that is achieved overall, outside of the ODDS can be quite different than expected. To mitigate this effect, any open trip in the ODDS was automatically cancelled by NMFS staff at the end of the year so they would not affect the number of selected trips the following year, since selection probabilities may differ between years. The rationale for this was that because the selection rates between years for each boat may differ, it would be problematic to have trips with different selection probabilities in the same calendar year. After 2014, this decision was revamped after seeing that vessel owners were delaying their selected trips to the end of the year and most of those were not being realized. Keeping previously logged trips in the system across years effectively boosted the selection probabilities of participating vessels the following year, and these would be most likely realized at the start of the year – a desirable property according to some regions of the U.S. (Palmer et al. 2016).

## 2.4 How the ODDS is Monitored

The ODDS database contains a table entitled ODDS\_MONITOR that stores the logged inputs and outcomes of each trip, including random numbers. This table is the foundation for annual NMFS reports to regional advisory bodies on the ODDS performance in trip-selection for the prior year (e.g., Chapter 3 of NMFS, 2019). The results of these analyses are used to evaluate the observer provider company and EM review provider companies when deciding to renew contracts (Fig. 2-1).

There are numerous analyses performed for annual review. The number of cancellations by the system and users for each stratum is reported for selected and not selected trips to provide insight into whether deployment effects – disproportionate cancellations in one stratum or across strata depending on whether the trip was selected or not – had occurred. The number and proportion of selected trips that were waived or inherited is also reported. The performance of the random number generator is evaluated using a binomial test – low  $p$ -values indicate departure from random. This test is repeated for increased complexity in the logged trips – as cancellations are additionally considered, as cancellations and inherits are considered, and as cancellations, inherits and waivers are considered. The resulting  $p$ -values at each step can be used to elucidate where the departure from randomness occurs. For example, consider the data in Table 2-1. Here the first two rows indicate that the selections were as expected for initially logged trips, and those trips considering cancellations. However, the next line indicates that those cancellations were not evenly distributed between selected and unselected trips, since the inherit process greatly increased

the selection rate, indicating far more selected trips were cancelled. Finally, the effects of the inherits was not mitigated by the influence of inherits on the final selection rate (last row).

Table 2-1. -- How the ODDS trip-selection is monitored. Although the random selection and cancellation processes did not affect selection rates, the combined effects of cancellations with inherits significantly increased the overall selection rate for the hook and line (HAL) stratum. Recreated from Ganz et al. (2020).

Strata	Trip disposition	Selected trips	Total trips	Actual selection (%)	Programmed selection (%)	<i>p</i> -value
<i>Hook and Line</i>	Initial Random Selection, <i>a</i>	346	1,898	18.23	17.71	0.548
	After Cancellations, <i>b (a-b)</i>	253	1,500	16.87	17.71	0.417
	With Inherits, <i>c (a-b+c)</i>	314	1,500	20.93	17.71	0.001
	After Waivers, <i>d (a-b+c-d)</i>	307	1,500	20.47	17.71	0.006

## 3. HOW DO USERS INTERACT WITH THE ODDS?

### 3.1 Overview

the ODDS records the logistics and occurrences of fishing trips as well as trip supporting information. Different user roles are needed in order to capture trips and supporting information in the ODDS. Vessel operators (i.e., owners and captains), are the primary users creating trip data. The vessel operators may use the call center for all actions described in this section and under certain conditions must use the call center. Observer monitoring providers (OM Providers) use several of the tools for monitored selected trip modifications and observer logistics. Electronic monitoring providers (EM providers) use tools for documenting hardware install and system problems. Each section lists the primary user in parentheses after the section title.

A breadcrumb of the path followed within the ODDS is present at the start of each section to provide quick reference. For example the breadcrumb in Figure 3-1 shows the path as the user logged into the ODDS, selected the *Captains* option and then selected to add or edit captains.

*Log on>Captains>Add-edit captains*

*Figure 3-1. – An example of a breadcrumb used in this chapter.*

### 3.2 Logging into the ODDS (owners)

*Log on>*

The NMFS sends a selection letter to the owner of a newly identified trip-selection vessel 60-days in advance of a new calendar year, or immediately if the vessel is identified from a landing report after the start of the year. The letter contains an initial username and password, and also details two possible methods to log intended fishing trips:

- Website: The official URL for the ODDS application is [odds.afsc.noaa.gov](http://odds.afsc.noaa.gov).
- Call center: For users who did not wish to use the website, a call-center could be reached at 855-747-6377 between the hours of 6 AM and 10:00 PM, 7 days a week. The call center simply follows the instructions presented in the ODDS and reads those prompts to the caller. In the rare event that the ODDS is unavailable electronically, paper forms are used to complete the call and these are manually entered into the ODDS upon return of the system. The call center has been operated by the company AIS, Inc. under contract by the NMFS during 2013-2020.

Trip management starts within the ODDS Trip Management System (TMS) application. Owners participating in partial coverage (PC) can either log on to TMS or work with the call center. To log on to TMS, users enter their user names and passwords (Fig. 3-2).

After logging in owners are navigated to the main menu screen (Fig. 3-3). From the main menu screen owners have the options to view their own contact information, manage their captains, select coverage, and view or log their trips.

#### 3.2.1 Verifying your information (owners)

*Log on>Verify contact information*

Owners should verify their contact information by selecting the *Your Contact Information* button on the main menu (Fig. 3-3). Owners will then be shown their contact information (Fig. 3-4). If any information is incorrect, the owner should contact the division of Restricted Access Management (RAM) in the Alaska Regional Office (AKR).



***Observer Declare and Deploy System  
For the North Pacific Groundfish and Halibut Observer Program***

User ID

Password

ODDS Call Center  
1-855-747-6377

***Forgot Password (Registered Vessel Owners Only)***

***Observer Program FAQs***

***EM Program FAQs***

***Frequently Asked Questions and Troubleshooting Non-EM***

***Frequently Asked Questions and Troubleshooting EM***

***Non EM ODDS User Manual for vessel owners or captains***

***EM ODDS User Manual for vessel owners or captains***

Figure 3-2. -- TMS log on screen.



*Observer Declare and Deploy System  
For the North Pacific Groundfish and Halibut Observer Program*

*Welcome to the ODDS Main Menu*

[View or Log Trips](#)

[Manage Captains](#)

[Your Contact Information](#)

[Request Full Coverage](#)

[Request EM Coverage](#)

Figure 3-3. -- TMS main menu screen.



**Please review your contact information for any errors or any missing information.**

- If any of this information is incorrect or missing please contact the Restricted Access Management (RAM) Division with the Alaska Regional Office in Juneau at 1-800-304-4846 (option #2) or email RAM.Alaska@noaa.gov. The RAM Division will assist you in updating your information.

[Back to Main Menu](#)

**Verify Contact Info**

Primary Phone Number

Email Address

Address

City  State

Zip

Figure 3-4. -- Owner verify contact information screen in TMS.

### 3.3 Adding and Editing Captains and Their Vessels (Owners)

Log on>Captains>Add-edit captains

On the main menu screen, owners select the *Manage Captains* button to navigate to the captain editing screen (Fig. 3-3). Owners can input information about new captains, edit their captains' information, reset their captains' passwords, deactivate their captains' accounts, and assign their vessels to their captains. Owners association to vessels within TMS are managed by the ODDS staff using emails from RAM directly to staff or owner emails to [odds.help@noaa.gov](mailto:odds.help@noaa.gov).

#### 3.3.1 Adding and editing captains (owners)

To add a captain, owners fill out a form with the captain's first, middle initial and last name, a phone number and a temporary password (Fig. 3-5). Owners click the *Click to Generate User ID* button for the system to create the captain's user id. Once the *Save New Captain* button is pressed, the captain's account is created. If an email was provided for the captain, the temporary password will be auto emailed to the captain; otherwise owners should provide their captains with their usernames and temporary passwords. Owners can select to edit their existing captains' information and activate and deactivate captains' accounts by clicking the *Edit* button.



[Back](#)

**Create New Captain Account**

This form allows the registered owner to create an account for a captain so that the captain can log trips in ODDS.

- Unique User ID for the captain will be generated using the provided captains first name, last name and middle initial (if middle initial is unknown or does not exist use the last letter of the captains first name).
- \* Required fields

[Reset Form](#)

\*Captains First Name  \*Captains Last Name  \*Captains Middle Initial

User ID  [Click to Generate User ID](#)

\*Phone

Captain's Email  ⚠ To receive automated trip receipts email address required

\*Initial Temporary Password

[Save New Captain](#)

Captain List												
Edit	Assign Vessel	User Type	Active User	Odds User Id	First Name	Middle Initial	Last Name	Last Login Date	Email	Phone	Vessel Owner	Reset Password
<a href="#">Edit</a>	<a href="#">Assign Vessel</a>	Captain	Y	www.w.w.27467	Bob	Captain	W			(555) 555-5555	owner	<a href="#">Reset Password</a>

1 - 1 of 1

Figure 3-5. -- Owner screen to add and optional edits of captains in TMS.

### 3.3.2 Assigning vessels (owners)

Log on>Captains>Assign vessels

For captains to log trips they must be assigned a vessel. The owner assigns their vessels to their captains. Owners press the *Assign vessel* button to navigate to the assign vessel screen (Fig. 3-5 and Fig. 3-6). If wanted, owners can assign all of their vessels to all of their captains.



The screenshot shows a web interface titled "Add - Change Vessels for User" with a "Back to Main Menu" button. A dropdown menu for "Select User" is set to "Bob Captain W". Below this are two tables. The first table, "Vessels User Can See", has columns "Remove Vessel", "ADFG", and "NAME". It contains one row with a "Remove" button, ADFG "99999", and NAME "ODDS BOAT". The second table, "Select Vessel to Add To Above User", has columns "SELECT\_VESSEL", "ADFG", and "NAME". It contains one row with an "Add" button, ADFG "99999", and NAME "ODDS BOAT". Both tables show a "1 - 1" indicator at the bottom right.

Figure 3-6. -- Owner screen to add or remove captains from their vessels in TMS.

## 3.4 Selecting Coverage (Eligible Owners, EM Providers and NMFS)

Log on>Coverage

Owners logging into the ODDS are already participating in partial coverage. Owners may want to modify their coverage. Owners of eligible vessels have the option to request full observer monitoring coverage for the BSAI Pacific cod fishery or request to be included in EM. Modifications for these coverages are available September and October for the upcoming year. During these months, owners of vessels eligible to participate in these modified coverages will see these options (Fig. 3-3).

### 3.4.1 Full coverage (eligible owners and NMFS)

Log on>Coverage>Full

Between September 1 and October 15, owners of eligible vessels can request to participate in BSAI Pacific cod fishery for the upcoming year (full observer coverage). Trips participating in full coverage require an observer at all times and are not logged into TMS. Users attempting to log full coverage trips will be instructed to contact an OM provider.

To request participation in full coverage, owners click the *Request Full Coverage* button on the main menu screen (Fig. 3-3). Owners are shown a screen to review information and instructions and make the request by pressing a new *Request Full Coverage* button (Fig. 3-7). Owners are navigated to a final screen to review information (Fig. 3 8). Owners complete the request by clicking the Submit button. NMFS approves the request.



**Full Observer Coverage Request**

*A vessel owner may request, on an annual basis, that NMFS place a vessel in the full observer coverage category for all directed fishing for groundfish using trawl gear in the Bering Sea and Aleutian Islands Management Area (BSAI) in the following calendar year.*

*Regulations describing this annual process are at 50 CFR § 679.51(a)(4). Once a request is approved, the vessel owner and operator must comply with observer coverage requirements described at § 679.51(a)(2) and carry an observer during all directed fishing for groundfish in the BSAI.*

*To be approved for full observer coverage category placement in 2017, a full observer coverage request must be submitted by November 15, 2017. For 2018, and each year after, the request deadline is October 15 of the prior year.*

**INSTRUCTIONS:**

*Follow the below instructions to submit a request to place a catcher vessel in the full observer coverage category. Once a request is submitted and approved, the catcher vessel is placed in the full observer coverage category for all directed fishing for groundfish using trawl gear in the BSAI for the duration of the following year. Once a request has been approved, the vessel may not be placed back in the partial coverage category while directed fishing for groundfish using trawl gear in the BSAI until the end of the calendar year indicated.*

1. Locate the name of the vessel you wish to place in full observer coverage category on the list below and click on the "Request Full Coverage" button next to the vessel name.
2. Read the text and confirm that you wish to submit your request to place the vessel in full observer coverage category by clicking on the "Submit" button to submit your request to NMFS. If you do not wish to submit a full observer coverage category request at this time, click the "Cancel" button.
3. Once you click "Submit", the approval status will be updated and you will be notified if your request has been approved or denied by NMFS.

**For questions about this process or questions about a request approval status, please contact:**

**Alicia M Miller**  
**Alaska Regional Office**  
*alicia.m.miller@noaa.gov*  
**(907) 586-7471**

Request Full Coverage for 2019 Back to Main Menu

NAME	PERMIT	Request Full Coverage	Approval Status
ODDS BOAT	31958	<div style="border: 1px solid blue; padding: 5px; display: inline-block; color: white; background-color: #007bff;">Request Full Coverage</div>	-

Figure 3-7. -- TMS request full coverage screen.



*By clicking "Submit" below, your request to place the F/V ODDS BOAT into the full observer coverage category is submitted to NMFS. Upon approval, the vessel is placed in the full observer coverage category for all directed fishing for groundfish using trawl gear in the Bering Sea and Aleutian Islands Management Area in the 2019 calendar year and is subject to full observer coverage category requirements detailed at § 679.51(a)(2)*

Submit

Cancel

Figure 3-8. -- TMS submitting request for full coverage screen.

### 3.4.2 EM coverage (eligible Owners and NMFS)

*Log on>Coverage>EM>Request*

Owners with eligible vessels can request to participate in the EM selection pool. NMFS approves or denies the request. EM requires EM hardware installation and a NMFS-approved VMP.

Between September 1 and November 1 eligible vessels can request to participate in EM coverage. To request participation owners click the *Request EM Coverage* button on the main menu screen (Fig. 3-3). Owners are navigated to a screen to review information and instructions (Fig. 3-9).

After reviewing the information, owners should press the Request Electronic Monitoring button to continue. Owners are navigated to a form to submit the request with the EM provider they intended to use and fishing gear (Fig. 3-10). NMFS staff log on to approve or deny the EM submitted request (Fig. 3-11). NMFS EM approval is conditional on EM installation and an approved Vessel Monitoring Plan (VMP). The deny option is labeled as *Deny Or Remove*. Remove is used when the request was already approved, however the user steps are the same to deny or remove.

#### 3.4.2.1 Hardware and VMP (EM providers and NMFS)

*Log on>Coverage>EM>Hardware and VMP*

In preparation for participating in EM, the EM provider will install EM hardware aboard the vessel and enter the information into the Electronic Monitoring Provider application (EMPR) (Fig. 3-12).

The EM provider will create a VMP for the installed gear and submit the VMP in EMPR (Fig. 3-13).

After a VMP is received, NMFS reviews and approves or denies the VMP (Fig. 3-14). Once approved the vessel is cleared for EM fishing for the upcoming year.



**Electronic Monitoring Coverage Request**

*A vessel owner may request that NMFS place a vessel in the Electronic monitoring selection pool when directed fishing for groundfish using long line gear or pot gear in the following calendar year.*

*Regulations describing this annual process are at 50 CFR § 679.51 . Once a request is approved, the vessel owner and operator must comply with electronic monitoring coverage requirements described at § 679.51(a)(2) and carry a functional electronic monitoring system during all directed fishing in a fishery subject to EM coverage.*

*To be considered for electronic monitoring selection pool in 2018, a request must be submitted by November 01, 2017.*

**INSTRUCTIONS:**

*Follow the below instructions to submit a request to place a vessel in the electronic monitoring selection pool.*

*Once a request is submitted and approved, the vessel is placed in the electronic monitoring selection pool and must submit a vessel monitoring plan annually.*

1. *Locate the name of the vessel you wish to place in electronic monitoring coverage category on the list below and click on the "Request Electronic Coverage" button next to the vessel name.*
2. *Read the text and confirm that you wish to submit your request to place the vessel in EM selection pool by clicking on the "Submit" button to submit your request to NMFS. If you do not wish to submit a EM selection pool request at this time, click the "Back" button.*
3. *Once you click "Submit", the request will be submitted and you will be notified if your request has been approved or denied by NMFS.*

**For questions about this process or questions about a request approval status, please contact:**

**Mike Vechter**  
FMA  
Mike.Vechter@noaa.gov  
(907) 271-1696

Request EM Coverage for 2020				<a href="#">Back to Main Menu</a>	
ADFG	VESSEL	REQUEST_EM	STATUS	Requested Gear Provider	
99999	ODDS BOAT	<a href="#">Request Electronic Monitoring</a>	-	-	
					1 - 1

Figure 3-9. -- TMS request EM coverage screen.



**EM Request**

Electronic Monitoring Request for ODDS BOAT

Gear types I plan to fish with  Longline (hook longline)  Pot Gear (include longline pots)

Select the Longliner EM Provider you want to use  AMR

Select the Pot gear EM provider you will use  AMR  Saltwater

Figure 3-10. -- TMS request EM coverage form.



**EM Vessel Request Report**

This report - processing assumes you know what you are doing.  
If you have questions - ask.  
All selections made are not processed until the submit button is pressed.

Vessel Seq	Permit	Name ↑=	Status	
100472	31958	ODDS BOAT	Request made on 07/31/2019 for this vessel for EM coverage.	<input checked="" type="radio"/> Approve <input type="radio"/> Deny Or Remove
				1 - 1

Figure 3-11. -- NMFS EM request approval, denial, removal screen in TMS.

**EM System install remove** [Add / Save](#) [< Back](#)

Provider  AMR  Saltwater Inc  
 Gear  Longline Gear  Pot Gear  Trawl Gear  
 Vessel

Service  INSTALL  REMOVE  
 Date Service Performed  Time Of Service   
 Service Performed By   
 Location of Service   
 System Test Performed  Yes  No  
 System Operational  Yes  No  
 Vessel Ready To Fish  Yes  No  
 Comment

56 of 4000

Figure 3-12. -- EMPR install or remove EM gear screen.

**Add A Vessel Monitoring Plan** [Add / Save](#) [< Back](#)

Vessel   
 Vessel sample group   
 Receive Date   Year VMP is for   
 Provider

Owner

Gear Type VMP Covers  Pot Gear  Longline Gear

[Upload VMP](#)

[VMP Added - can now upload VMP PDF document](#)

Figure 3-13. -- Adding a VMP in EMPR form.

**Vessel Monitor Plan Review** Add / Save < Back

Reviewer: mike.vechter

Review Date: 07/31/2019

Approve or Deny VMP for gear: Approve

Review Comment: Looks good

Gear Reviewing:  Longline Gear,  Pot Gear,  Trawl Gear

10 of 2000

VMP Information			
Vessel Name	ODDS BOAT	Sample pool	Electronic Monitoring - Gear Type- Selected Trips
Vmp Receive Date	07/31/2019	VMP Year	2020
Vessel User	Owner Boat		
Provider Company	AMR		
Gear	Pot Gear and Longline Gear		

**VMP Documents**

No VMP Documents Uploaded

Figure 3-14. -- VMP review form in EMPR.

### 3.5 Trip Log to Trip Close (Vessel Operators and OM Providers)

*Log on>Trips>Log*

Vessel operators log on to the ODDS to enter trips they intend to conduct. Vessel operators can change, cancel and close any trip not selected for monitoring. Vessel operators will need to work with the observer provider for OM selected trips, and the call center for EM changes and cancellations.

#### 3.5.1 Logging trips (vessel operators)

Owners can log and view trips by selecting the View or Log Trips button on the main menu screen (Fig. 3-3). After selecting a vessel, owners arrive at their trip plan log for the selected vessel, which is the screen captains are initially navigated to after logging in (Fig. 3-15).

Vessel operators can switch between their vessels by selecting one of the vessels available in the vessel drop down list. All trips are listed from most recent to oldest. A calendar at the bottom of the screen displays any pending trips for the vessel. Vessel operators can download the trip receipt for individual trips.

Trips must be logged in chronological order. Each vessel is limited to three pending trips logged. Vessels may be further limited depending on their VMP status or if an inherited trip is canceled. In Fig. 3-15, the VMP status is red because the VMP is not current, which will restrict the number of new trips logged. Addition information on VMP status, inherits and trip logging restrictions can be found in Chapter 4.

Select Vessel | FISH WHISPERER ADFG: 7778 | [Back to Main Menu](#)

Select Vessel: FISH WHISPERER ADFG: 7778

Status for FISH WHISPERER

Press link below to log trip	Status
<a href="#">Guide me through trip selection</a>	ok
<a href="#">Electronic Monitoring - Gear Type - Selected Trips</a>	VMP is required for vessel/Trip limit reached

Trip Plan Log for FISH WHISPERER

Close/Change Trip	Cancel Trip	Start/Leave Date	Return Date	Trip #	Print	Leave Date Plus 48 hrs	Start / Leave Port	Landing Date	Gear Type	Tender	CDQ Flag	Trip Status	Observer Status
<a href="#">Close</a>	<a href="#">Cancel</a>	03/10/2021 08:00 PM	03/12/2021	109055	<a href="#">Print Trip Receipt</a>	03/12/2021 08:00 PM	Elfin Cove	-	Longline	N	N	Pending	EM Selected Trip - assigned
		03/07/2021 10:00 AM	03/09/2021	109054	<a href="#">Print Trip Receipt</a>	03/09/2021 10:00 AM	Elfin Cove	-	Longline	Y	N	Cancelled	EM Not Selected Trip
<a href="#">Close</a>	<a href="#">Cancel</a>	03/04/2021 08:00 PM	03/08/2021	109053	<a href="#">Print Trip Receipt</a>	03/08/2021 08:00 PM	Elfin Cove	-	Longline	Y	N	Pending	EM Not Selected Trip
		01/20/2021 01:00 AM	01/21/2021	109012	<a href="#">Print Trip Receipt</a>	01/22/2021 01:00 AM	Adak	01/21/2021	Longline	Y	N	Completed	EM Selected Trip - assigned

1 - 4

[Log New Trip](#)

Logged Trips Calendar

Monthly Weekly Daily < Previous Today Next >

May 2021

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
02	03	04	05	06	07	08
09	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

Figure 3-15. -- Trip Plan Log screen in TMS.

To log a new trip, vessel operators click the *Log New Trip* button on the Trip Plan Log screen or the link in the status report. The vessel operator must agree to record all information into TMS correctly. Vessel operators will be asked questions and the response will be used to determine which monitoring selection rate will be applied to the trip. American Fisheries Act (AFA), BSAI full coverage, rockfish program, and Community Development Quota (CDQ) trawl trips are not logged into TMS. Vessel operators logging these trips will be instructed to contact a full coverage provider.

If the vessel is participating in EM and high priority problem exists then a warning will appear (Fig. 3-16, see *Review* below for high priority problem creation). The vessel operator will still be allowed to log the trip. However, the vessel operator is required to fix the problem prior to embarking on the fishing trip, or waiver is required (section 3.5.2.2). The NMFS staff track these issues to ensure fishing trips following the regulations.

Vessels participating in observer monitoring will get a warning if logging a trip within 72 hours of intended trip start date (Fig. 3-17). If the trip is selected for monitoring, the provider may delay the trip 72 hours in order to handle the logistic of observer travel and availability (section 3.5.2.1). Once a trip is logged the selection results and trip number are displayed (Fig. 3-18). The details around how a trip is selected for observer coverage are described in more detail in section 4.5.

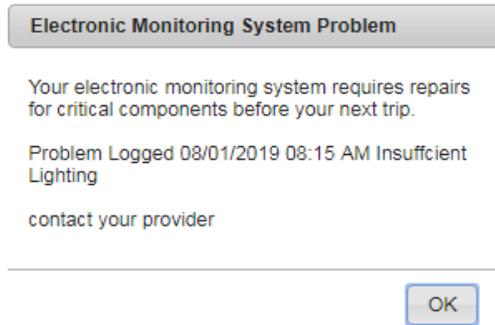


Figure 3-16. -- EM high priority problem warning in TMS.

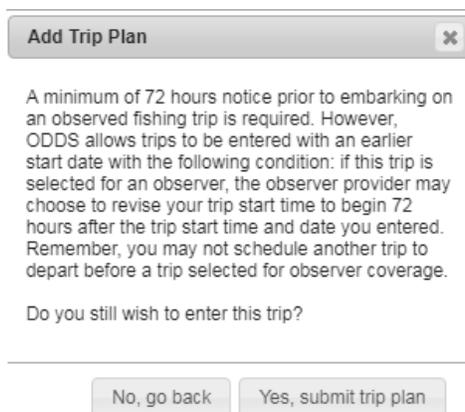


Figure 3-17. -- Logging trip to start with 72 hours warning in TMS.

### 3.5.2 *Monitoring trips (OM providers)*

*Log on>Trips>Monitored*

While logging a trip, vessel operators are asked questions and the responses are used to determine which monitoring selection rate the trip is assigned. Vessel operators are notified of selection outcome immediately after logging a trip (see Fig. 3-18 for an example of a trip not selected for monitoring). Additional steps are required for trips selected for monitoring.

#### 3.5.2.1 *Delaying trips (OM providers)*

*Log on>Trips>Monitored/Delay*

Trips selected for observer monitoring (OM) and logged within 72 hours of intended start, may have the start date delayed 72 hours by the provider to ensure an observer is available at the time of trip start (Fig. 3-19).

#### 3.5.2.2 *Waiving trip (providers and NMFS)*

*Log on>Trips>Monitored>Waive*

Both EM and OM providers can request a waiver from coverage for a trip selected for monitoring. Trip waivers occur when the provider is unable to supply an observer at the time of vessel's embark date or in the case of EM, when a problem with the EM system cannot be resolved prior to the planned trip start

date. The trip waiver option is only available when vessel embark date is within 72 hours. The provider requests the trip be waived 60 (Fig. 3-20) for OM and Fig. 3-21 for EM). NMFS decides to approve or deny the waiver. Trips that were selected for EM and waived will have the monitoring requirement moved to the next EM trip yet to embark (see Chapter 4).

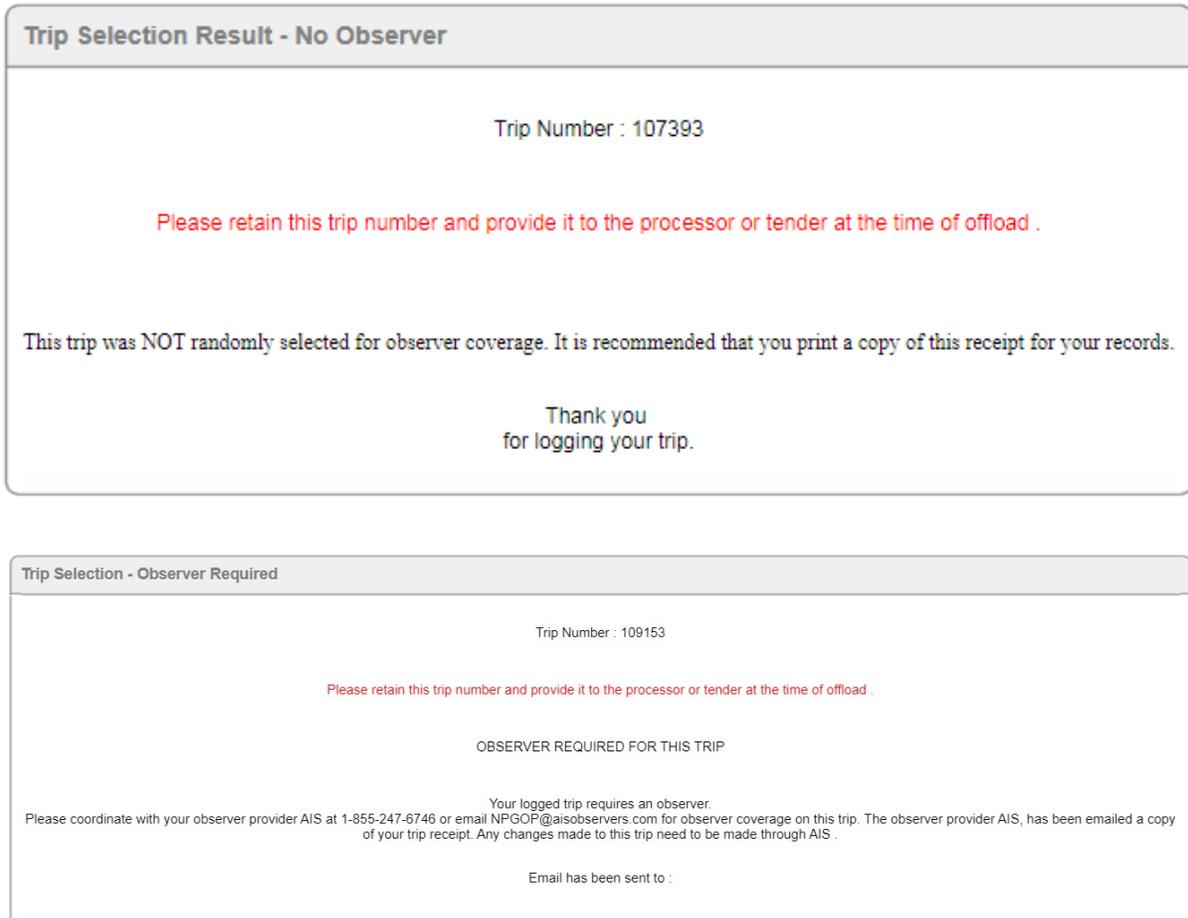


Figure 3-18. --Two examples of trip-selection results displayed after trip logged in TMS. Unselected trip (top) and selected trip (bottom).

<input type="text"/> <input type="button" value="Go"/> <input type="button" value="Actions"/> <input type="button" value="Back to Main Menu"/>											
Assign Observers	Delay Embark	Request Release	Cancel	Hours Until Embark	Trip Number	Date Logged	Vessel	Trip Status	Observer Status	Embark	Assigned Cruise
<input type="button" value="Assign"/>	<input type="button" value="Delay Trip"/>		<input type="button" value="Cancel"/>	51	107373	08/01/2019		Pending -	Observer Trip - Require Obsvr	Aitak - 08/03/2019	-

Figure 3-19. -- Trip delay option in TMS.

**Request Observed Trip Release**

Trip Number:  Vessel:  Trip Obs Status:

Start / Leave Port:  Start / Leave Date:

End Port:  End Date:

**Request Trip Release**

Release Request By:  Release Status:

Release Request Date Time:

Reason for Release:

Figure 3-20. -- Request trip release screen in TMS.

Release selected for

Vessel	TRIP#	GEAR	Planned embark date	Planned embark port	Planned disembark date	Planned disembark port
	107556	Trawl Gear	08/17/2019	Adak	08/17/2019	ADAK - ADAK COD COOPERATIVE

1 - 1

Reason for Release:

Release Request Date Time: 08/14/2019 07:26

Figure 3-21. -- EM trip waiver request screen in EMPR.

### 3.5.2.3 *Assigning observers (OM providers)*

*Log on>Trips>Monitored>Assign observer*

Trips selected for observer monitoring must carry an observer for the fishing trip duration. OM providers assign the observers using the tools in TMS. OM providers also can change pending trip start and end dates (Fig. 3-22).



The screenshot shows the 'Logged Trip' interface in TMS. At the top, there are fields for Trip Number (106752), Vessel, and Trip Obs Status (Pending - Observed Trip - Obsrvr Assigned). Below these are dropdowns for fishing gear (Longline Trip) and CDQ Trip (N), and a question about delivering catch to a tender vessel (N). A 'Change Logged Trip' section contains fields for Start/Leave Port (Yakutat), End Port (JUNEAU - TAKU SMOKERIES), Start/Leave Date (06/23/2019), End Date (06/28/2019), Start Leave Time (05:34 PM), and End Time (12:33 PM). A 'Change Trip' button is at the bottom right of this section. Below is an 'Assigned\_Observers' table with one row of data.

Change Dates	OBSERVER_NO	NAME	CRUISE	SUBCONTRACTOR_CODE	Embark	Disembark
<a href="#">Change Dates</a>	12832		23593	-	06/23/2019	06/28/2019

1 - 1

Figure 3-22. -- Screen to assign observer to trip selected for observer monitoring in TMS.

### 3.5.3 *Changing trips (vessel operators and OM providers)*

*Log on>Trips>Change*

Vessel operators can modify pending trips prior to their start date by selecting the change button on the Trip Plan Log screen (Fig. 3-23). If the trip was randomly selected for observer monitoring, then the vessel operator must contact the OM provider for trip changes. Vessel operators need to contact the call center for EM selected trips. Allowed changes include dates, times, ports, and multiple IFQ/CDQ and IFQ trip. Changes to other trip characteristics require the trip to be canceled and re-logged to ensure the proper selection rate is applied.

### 3.5.4 *Canceling trips (vessel operators and OM providers)*

*Log on>Trips>Cancel*

Vessel operators can only cancel trips using the ODDS if the trip was not EM and not selected for observer coverage. Vessel operators need to contact the call center for trips selected for EM monitoring and the OM provider to cancel trips selected for observer monitoring. Vessel operators can cancel all other trips by selecting cancel on the Trip Plan Log screen and pressing the *Cancel Trip* button on the

Cancel Trip Plan screen (Fig. 3-24). If a trip selected for monitoring is canceled, a future trip will inherit the monitoring (see Chapter 4).

TRIP NUMBER	Start / Leave Date	Leave Date Plus 48hrs	Start / Leave Port	Cdq Flag	Trip Status	Observer Status
107306	08/07/2019 01:00 AM	08/09/2019 01:00 AM	Adak	N	Pending	Not Observed Trip
107305	07/31/2019 01:00 AM	08/02/2019 01:00 AM	Akutan	N	Pending	Not Observed Trip

Figure 3-23. -- Change trip screen in TMS.

Figure 3-24. -- Trip cancel screen in TMS.

### 3.5.5 Closing trips (vessel operators and OM providers)

*Log on>Trips>Close*

Once a trip is fished and the vessel returns to port, the trip needs to be closed in TMS. The procedure differs depending on if the trip was selected for observer monitoring.

Vessel operators can close all trips not selected for observer monitoring. To close a trip, it must be pending, fishing must have occurred, and the date of closure must be after the start date. On the trip plan log screen vessel operators select the close trip button to navigate to the close screen (Fig. 3-25). If landing data is present, vessel operators select the trip's landing and close the trip, otherwise they select or enter the end port and date to close the trip.

Only the OM provider can close an observer monitored trip. The OM provider can close the trip once the dates of the observer’s data the NMFS has received spans the observer embark and disembark dates within the ODDS.

Unobserved Trip Plan Back to Trip Plan Log

Trip Number: 106374    Observer Status: EM Selected Trip - assigned    Trip Status: Pending

What fishing gear will be used most on this trip? Longline Trip    CDQ: N

Do you intend on delivering catch to a tender vessel at any time during this trip?

Start / Leave Date: 06/12/2019    Start / Leave Time: 17:00    Start / Leave Port: Homer

Elanding for AVALANCHE

Select one or more deliveries for this trip

Selected	REPORT ID	FISH_START_DATE	LANDING_DATE	GEAR	MANAGEMENT_PGM	PROCESSOR	PORT
<input type="checkbox"/>	4855248	06/10/2019	06/12/2019	HAL	IFQ	PACIFIC STAR SEAFOODS	HOM

1 - 1

Not In List (Enter My Own)
Close Trip

Figure 3-25. -- Close trip screen in TMS.

### 3.6 Trip Review (EM Providers, Contractors, NMFS)

Log on>Captains>Coverage>Trips>Review

EM monitored trips will have data reviewed and feedback entered into the ODDS system (Fig. 3-26). Problems can be logged by EM providers and contractors reviewing EM gear retrieval video. Some types of problems, such as insufficient light on the vessel for the camera to adequately capture needed information, will generate a high priority problem warning when the vessel next logs a trip (see Fig. 3-16 for an example).

Some problems may require an amendment to the VMP (Fig. 3-27), modifications of EM hardware and/or repairs. Trip logging restrictions may apply to vessels until required amendments are approved (see Chapter 4). Problems are resolved in the ODDS system by EM providers once needed changes and/or repairs have been made (Fig. 3-28).

**Record Em System Problem**

[< Back](#)

Gear: Longline Gear

Problem Type:

Problem Date:  

Reported By:

Problem Comment:

Problem Time:

[Add Photos](#)

Figure 3-26. -- Recording system problem screen in EMPR.

**VMP\_Requires\_Amending** [Request VMP Amend](#) [< Back](#)

*Change vessel - gear VMP status to require an amendment.  
The vessel is only allowed to have only one open trip until  
a new VMP is submitted and approved.*

Provider: AMR

Vessel Requiring Amendment

Gear:  Longline Gear  
 Pot Gear  
 Trawl Gear

Why is amendment required?

Figure 3-27. -- VMP amendment required screen in EMPR.

Problems logged for **ODDS BOAT (ADFG# 99999)** Gear **Longline**

**Resolve EM System Problem** Add / Save < Back Cancel

---

Problem Type:

Reported Date Time: 08/01/2019 01:00 Reported By: Fred

Problem Priority High - Low: High Priority Vmp Amendment Required: No Amendment

Problem Comment:

---

Repair Status:

Repaired Date:

Repaired By:

Repaired Time:

Repair comment:

Figure 3-28. -- EMPR EM provider system problem repair screen.

## 4. HOW DOES THE ODDS WORK?

This is the detail chapter written essentially for the technically inclined and curious. This document describes the ODDS as of August 2020.

### 4.1 Overview

The Observer Declare and Deployment System (ODDS) provides a common platform for the entry and management of fishing events by the fishing industry, observer monitoring (OM) and Electronic Monitoring (EM) providers, and NMFS. Examples of the ODDS utilities include the ability to log anticipated fishing trips, assign observers or electronic monitoring to a random subset of those trips, record the status of observer deployments, and record the performance of the electronic monitoring systems. The ODDS consists of an Oracle relational database, structured query language (PL/SQL) packages, and Oracle Application Express (APEX) applications.

Relational data storage and lookup tables constitute the ODDS database. The ODDS database tables were originally constructed with Oracle 11g in 2012 and were updated to Oracle 12c in 2018. As of this writing, the ODDS database contains approximately 70 tables to store the data created from the modules and the history of changes to the data. There are 25 Oracle PL/SQL packages that contain the tools (e.g., functions and procedures) to support the ODDS data creation, manipulation and storage. Most data creation and manipulation are done by users through three APEX applications.

Applications are web-enabled user interfaces that use PL/SQL code packages to enable communication between the ODDS users and the database. The ODDS consists of three applications; the Trip Management System (TMS), the Vessel Assessment Logging System (VALS) and the Electronic Monitoring Provider (EMPR). The TMS application is the interface for user registration, trip logging and managing and storing observer logistics. VALS was created to store data for NMFS to gauge the ability of a vessel to carry an observer when that vessel has requested to be released from their requirement to be observed<sup>6</sup>. (VALS is no longer in use since 2015.) EMPR was created to facilitate EM and its associated logistics such as documenting the vessels that have systems installed or removed, functional tests, and tracking identified problems with the equipment as well as in video review.

#### 4.1.1 The main modules

Modules are groups of processes that together support the ODDS functional requirements. The ODDS consists of six main modules that are described in more detail later in this document. The applications associated with the modules are in Table 4-1. Briefly the modules include:

- *Manage Coverage* is the module where vessels are associated with their owners. It is used to manage user access to the ODDS and provides the ability for vessel operators and owners to be placed into special monitoring groups. For example, this module facilitates the incorporation of the two monitoring types – OM and EM, and vessels may request NMFS to allow them to move from OM to EM for the upcoming year. In addition, certain vessels could petition NMFS to participate in Pacific cod trips while fishing in the Bering Sea and Aleutian Islands with trawl

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<sup>6</sup> VALS was designated for vessels in the vessel-selection category of the partial coverage fleet. These vessels were required to carry an observer for all of their fishing trips during a pre-determined time period. The method of deploying observers was started in 2013 and was discontinued in 2015.

gear. This petition is necessary since these trips would be logged in the TMS and are required to be fully monitored<sup>7</sup>.

- *Manage Captains* allows owners of vessels to manage their captains' information, account status, passwords and assign them to vessels.
- *Manage Sample Units* facilitates the entering and editing of upcoming fishing trip information. Trips selected for monitoring may require the vessel operator contact the OM or EM provider or call center in order to make changes to the upcoming selected trip.
- *Manage Selection* manages the selection rate used in each selection pool for a specified time period. Trips with random numbers below the selection rate are selected for monitoring, while those with larger values are not.
- *Manage Monitoring* handles the logistics for monitoring selected trips. Vessel operators of trips selected for observer monitoring work with an OM provider to carry an observer during their trip. Vessel operators of trips selected for electronic monitoring work with an EM provider to ensure monitoring hardware is working without problems and work with the call center to modify trips.
- *Report* allows storing, viewing, processing and downloading of partial coverage information filtered by role. Its primary function is for reporting data to users based on their permissions and needs.

#### 4.1.2 Keys to figures

The ODDS processes are presented in flowcharts below. Standard flowchart symbols are used and a key is provided in Figure 4-1. In addition, colors are adopted to represent the ODDS user roles and add information to flowchart symbols (Table 4-2).

#### 4.1.3 Role based access to modules

Access to the ODDS is controlled using role based access. Access to each module is dependent on the permissions granted to each ODDS role within the applications (Fig. 4-2). The ODDS role types include: The National Marine Fisheries Service (NMFS), Vessel Captains, Vessel Owners, OM and EM Providers, and a Telephone/call center.

#### 4.1.4 ODDS user flow

ODDS is versatile with the ability for many users and all user roles to access the system at the same time.

An ideal ODDS flow from requesting electronic monitoring (EM) to an observer monitored (OM) trip close is presented in Figure 4-3. Although variations are possible, this scenario shows the ODDS functionality, data management, and the tools available to different users. The workflow is as follows:

1. Using the *Manage Coverage* module, an owner will log into the TMS application and if eligible have the option to opt in/out of EM (grayed out in diagram to indicate EM opt in/out season closed at time of trip log).
2. Using the *Manage Captains* module, the vessel owner will create accounts for their captains and assign their captains to their vessels within the TMS application.

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<sup>7</sup> This voluntary practice was codified into new regulations enacted in April 2016 that prohibit such trips from being entered into the TMS.

3. One of the owner's captains will log on to the TMS application and log a fishing trip using the *Manage Sample Units* module. In the course of logging the trip the captain will enter information on the expected fishing trip.
4. The ODDS database function generates a random number. If the random number is less than the NMFS assigned probability, the trip is selected for monitoring.
5. An OM provider logs on to the TMS application and assigns an observer to the selected trip using the *Manage Monitoring* module.
6. Fishing trip occurs.
7. Once the trip is completed, the OM provider logs back onto the TMS application and closes the trip in the *Manage Monitoring* module.
8. All the information for the above actions are stored in the database and available through the *Report* module (not shown in figure).

#### 4.1.5 *Additional utilities*

Tools built but not currently used in the ODDS include assigning partial coverage observers to processing plants and managing OM providers. These tools were included with the initial ODDS. Although they have not been used, based on changes in the restructured program, they may soon be needed. The utilities are briefly described below:

- Manage plant observers allows assigning an observer to a processing plant for the purpose of monitoring partial coverage deliveries.
- Managing providers allows multiple providers to participate in providing partial coverage observers.

Table 4-1. -- Applications associated with each module.

	TMS	EMPR	VALS
Manage Coverage	x	x	
Manage Captains	x		
Manage Sample Units	x		x
Manage Selection	x		x
Manage Monitoring	x	x	
Report	x	x	

Table 4-2. -- Key to flowchart and user coloration.

Color	Flowchart symbol outline color	Role and flowchart text color
Red	Arrows indicate “No” responses to decisions	NMFS
Blue	User entered information	Captains
Green	Arrows indicate “Yes” responses to decisions	Owner and call center
Purple	NA	Provider
Black	Automated processes	NA
Grey	Unavailable but present processes	NA

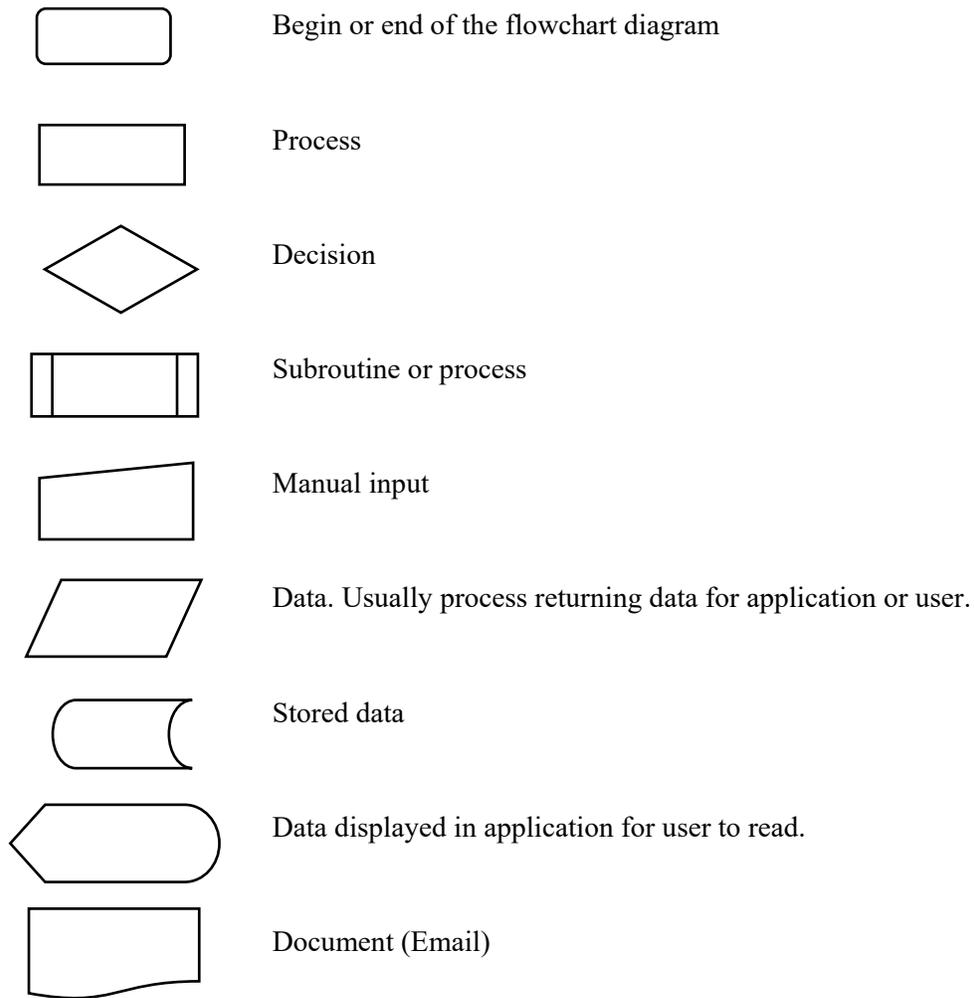


Figure 4-1. -- Flowchart symbols.

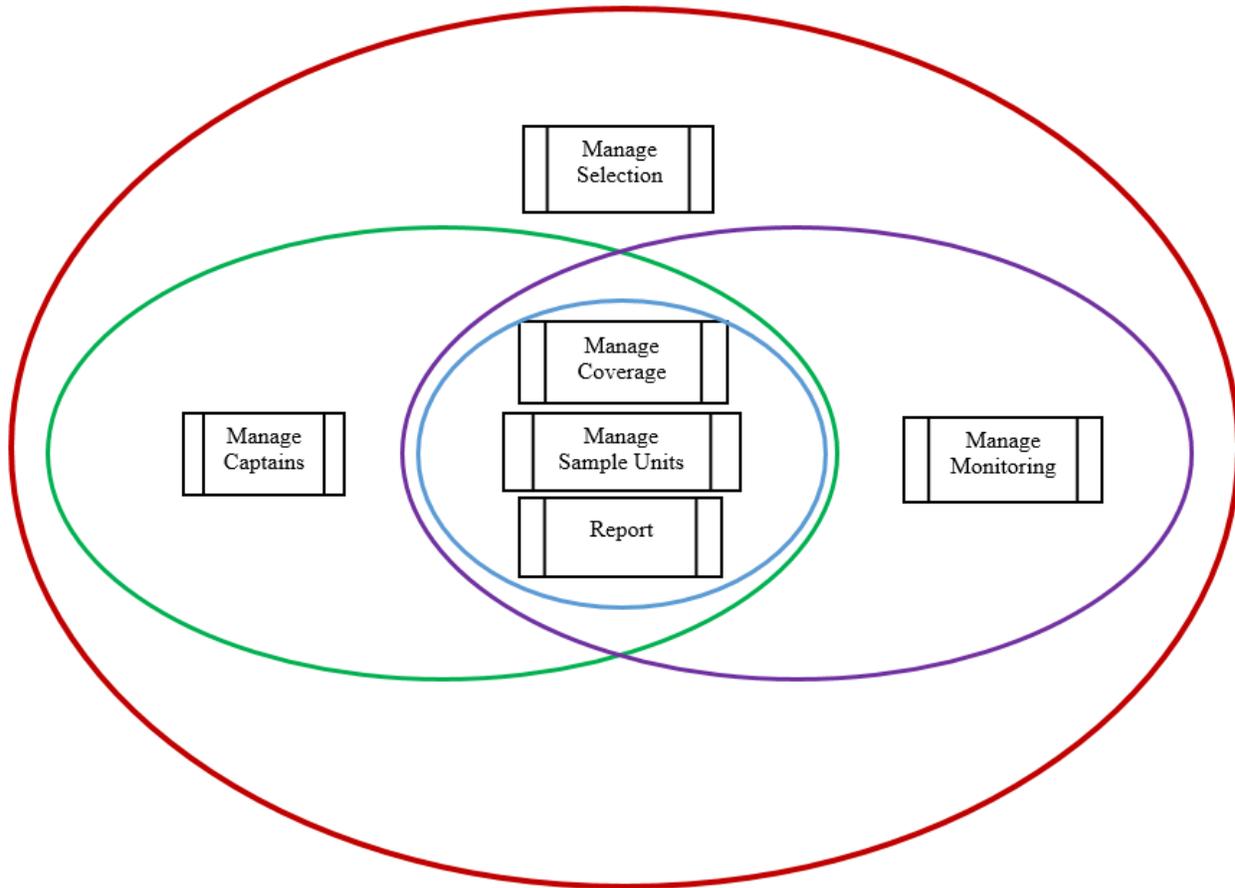


Figure 4-2. -- Module permissions by role. Colors follow Table 4-2.

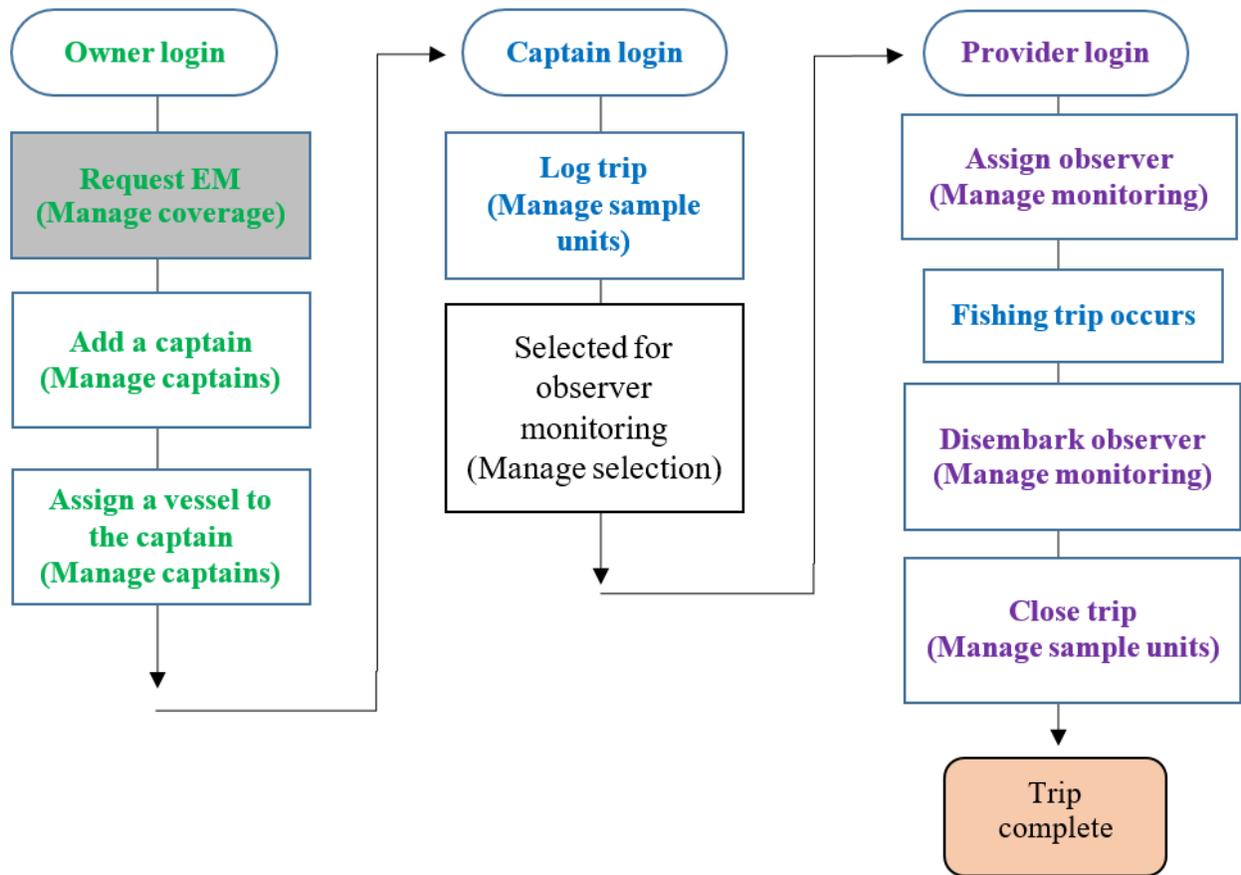


Figure 4-3. -- How users interact with the ODDS modules. Color coding follows Table 4-2.

## 4.2 Manage Coverage Module

The manage coverage module authenticates and authorizes users, and manages requests for coverage changes by vessel owners.

### 4.2.1 Authentication and authorization

Access to the ODDS requires user authentication and authorization. The ODDS user interfaces are governed through the Custom Authentication Management (CAM) application to protect personally identifiable information and data integrity. CAM was created within the Fisheries Monitoring and Analysis division (FMA) of NMFS and stores users, user roles, and non-NMFS user passwords to manage access to applications. CAM is used for many systems and is outside of the ODDS.

Figure 4-4 diagrams the authentication and authorization process used for the ODDS applications. Users attempting to log onto an ODDS application enter their username and password. The procedure varies between NMFS and non-NMFS users.

#### 4.2.1.1 *NMFS users*

NMFS usernames and passwords are authenticated using Lightweight Directory Access Protocol (LDAP) information (NMFS employees). Usernames and passwords are authenticated using the NOAA Identity and Credential Management (ICAM) system.

#### 4.2.1.2 *Non-NMFS user*

In 2012, NMFS generated a username and temporary password for all vessel owners expected to participate in partial coverage and sent a letter to the owners, and monitors landings records continuously for new trip-selection vessels. The NMFS sends a selection letter to the owner of a newly identified trip-immediately. The letter contains an initial username and password, and also details two possible methods to log intended fishing trips. Non-NMFS users are required to enter a new password after their first log on. The password encrypted binary results are stored within CAM tables for authentication. If a user has forgotten a password and has a valid email on file with Restricted Access Management (RAM) Permitting Division, passwords can be reset using the link on the TMS login screen.

### 4.2.2 Vessel coverages and eligibilities

Eligible PC vessels may choose to register for electronic monitoring (EM) and the Bering Sea Aleutian Islands Pacific cod trawl gear 100% (BSAI 100%) selection pool. Eligibility requirements for BSAI 100% coverage were based on NMFS policies that were set in regulation in April 2016. Figure 4-5 diagrams the BSAI 100% registration process. Registration starts with successful log on to the TMS application. Only vessels eligible to participate in the BSAI 100% selection pool will see a selection option. Only vessels that specifically opt in each year are placed into the BSAI 100% selection pool for the upcoming year. Once a vessel opts in for the upcoming year, they cannot opt out - however, there is an undo process available to NMFS users (not shown in figure).

Eligibility requirements for EM are set each year in the Annual Deployment Plans (ADP). These requirements are programmed into the ODDS prior to open selection periods for eligible vessels. From September 1 to November 1, EM eligible vessels may request to change between OM to EM for the upcoming year. The EM coverage selection tool is within TMS (Fig. 4-6).

The ODDS limits allowed vessel activity during the EM coverage approval process. The process and restrictions are discussed in more detail in Table 4-3 and the following flow chart figures (Figs. 4-6 through 4-10). Once a vessel opts to participate into EM for the upcoming year, the request is processed by NMFS (Fig. 4-7). This vessel approval process is necessary since there may be reasons such as data needs and funding constraints that prevent NMFS from approving all vessels. These restrictions and decision rationale are specified in Annual Deployment Plans. Vessels can appeal if their request to

participate in EM is denied. Once a request for EM is approved, a Vessel Monitoring Plan (VMP) must be submitted for the vessel prior to participation in EM for the upcoming year (Fig. 4-8). Vessels with VMPs denied by NMFS can appeal (Fig. 4-9). Once a vessel and VMP are approved by NMFS, the vessel is considered 'in EM' and can log EM trips. If a vessel is participating in EM for the current year, they will automatically remain in EM for the upcoming year unless they specifically opt out. After review of EM data, NMFS may require an Amendment to the VMP (Fig. 4-10), and that puts the vessel in a different restricted activity status. . This process is discussed in more detail in Table 4-3 and the following flow chart figures (Fig. 4-6 through Fig. 4-10).

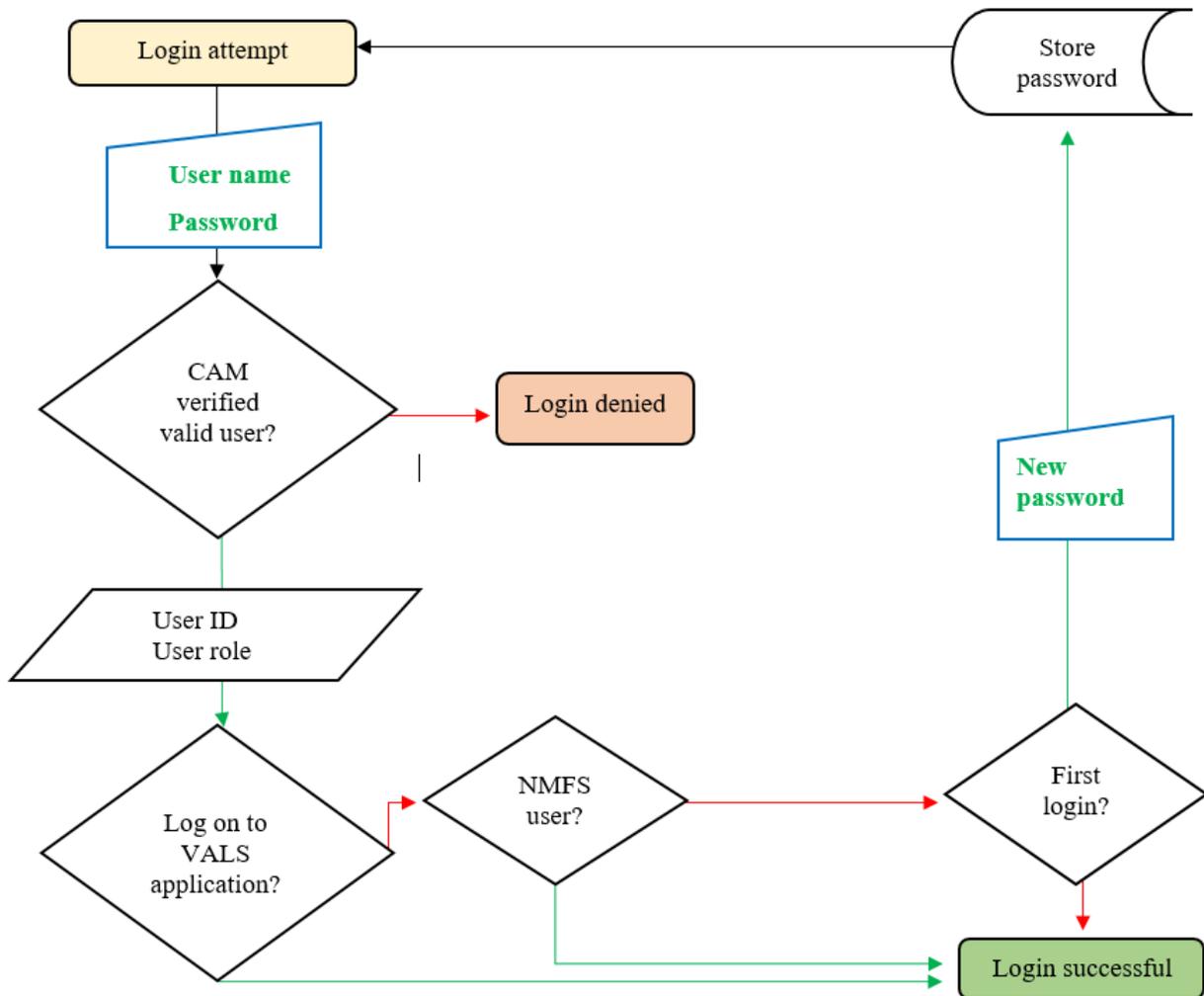


Figure 4-4. -- Authentication and authorization process for the ODDS applications TMS, EMPR, and VALS. Note: VALS differs from TMS and EMPR.

Table 4-3. -- EM request process vessel coverage and monitoring status, logged trips allowed and next step. Maximum number of trips allowed by the ODDS is 3.

Step #	Request status	Monitoring	Logged trips allowed	Next step (Table 4-3 row number)	Figure
<b>EM Request</b>					
1	Submitted	None	0	EM request decision needed.	Figure 4-7
2	Approved	None	0	VMP needed (7).	Figure 4-8
3	Denied	Observer monitoring (OM)	3	Appeal possible for 45 days (4).	Figure 4-7
<b>EM Appeal</b>					
4	Submitted	OM limited	1	Review by NMFS (5,6).	Figure 4-7
5	Approved	None	0	VMP needed (7).	Figure 4-8
6	Denied	OM	3	None. In observer monitoring.	
7	Submitted	None	0	VMP needs reviewed by NMFS (8,9).	Figure 4-8
<b>VMP</b>					
8	Approved	Electronic monitoring (EM)	3	None. Log EM trips.	
9	Denied	None	0	Appeal or submit new VMP (7,10).	Figure 4-8
<b>VMP Appeal</b>					
10	Submitted	EM limited	1	None unless reviewed by NMFS (11,12).	Figure 4-9
11	Approved	EM	3	None. Log EM trips.	
12	Denied	None	0	Submit new VMP (7).	Figure 4-8
<b>VMP Amendment</b>					
13	Required	EM limited	1	Submit amended VMP (7).	Figure 4-8
14	Approved	EM	3	None. Log EM trips.	

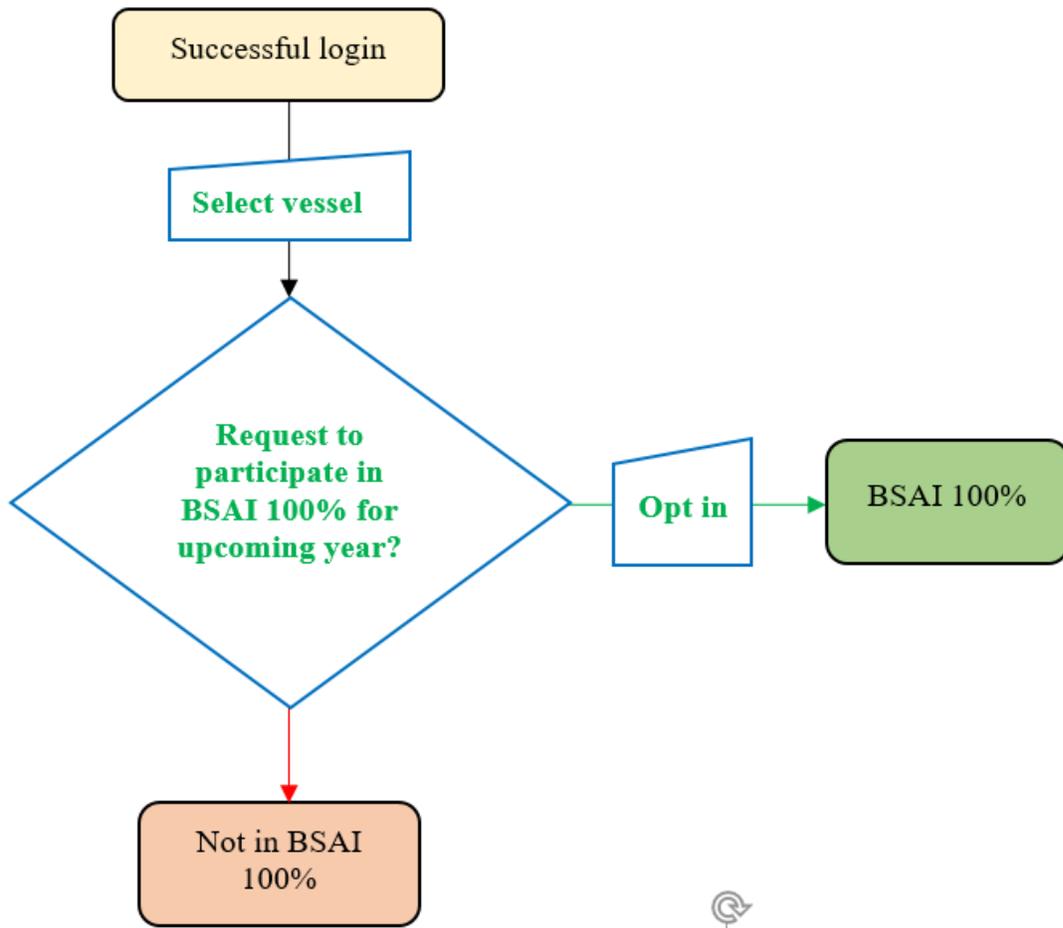


Figure 4-5. -- BSAI 100% registration process, available September 1 to October 15 for participation in upcoming year. Users for this process are owners. Module user interface is in the TMS application.

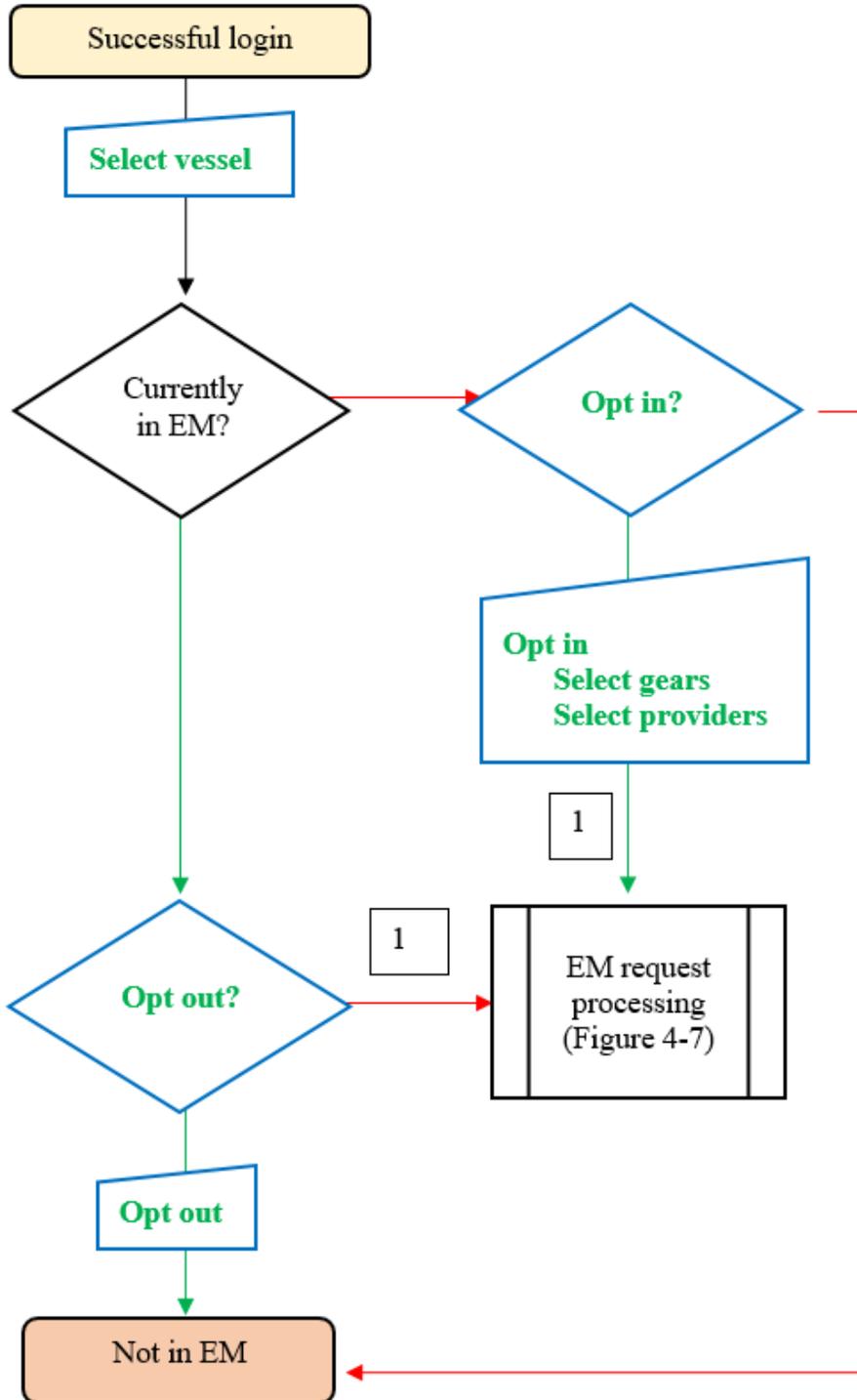


Figure 4-6. -- Electronic Monitoring registration process, available September 1 to November 1 for participation in upcoming year in the TMS application. Users for this process are owners. Box and number is Table 4.3 Step.

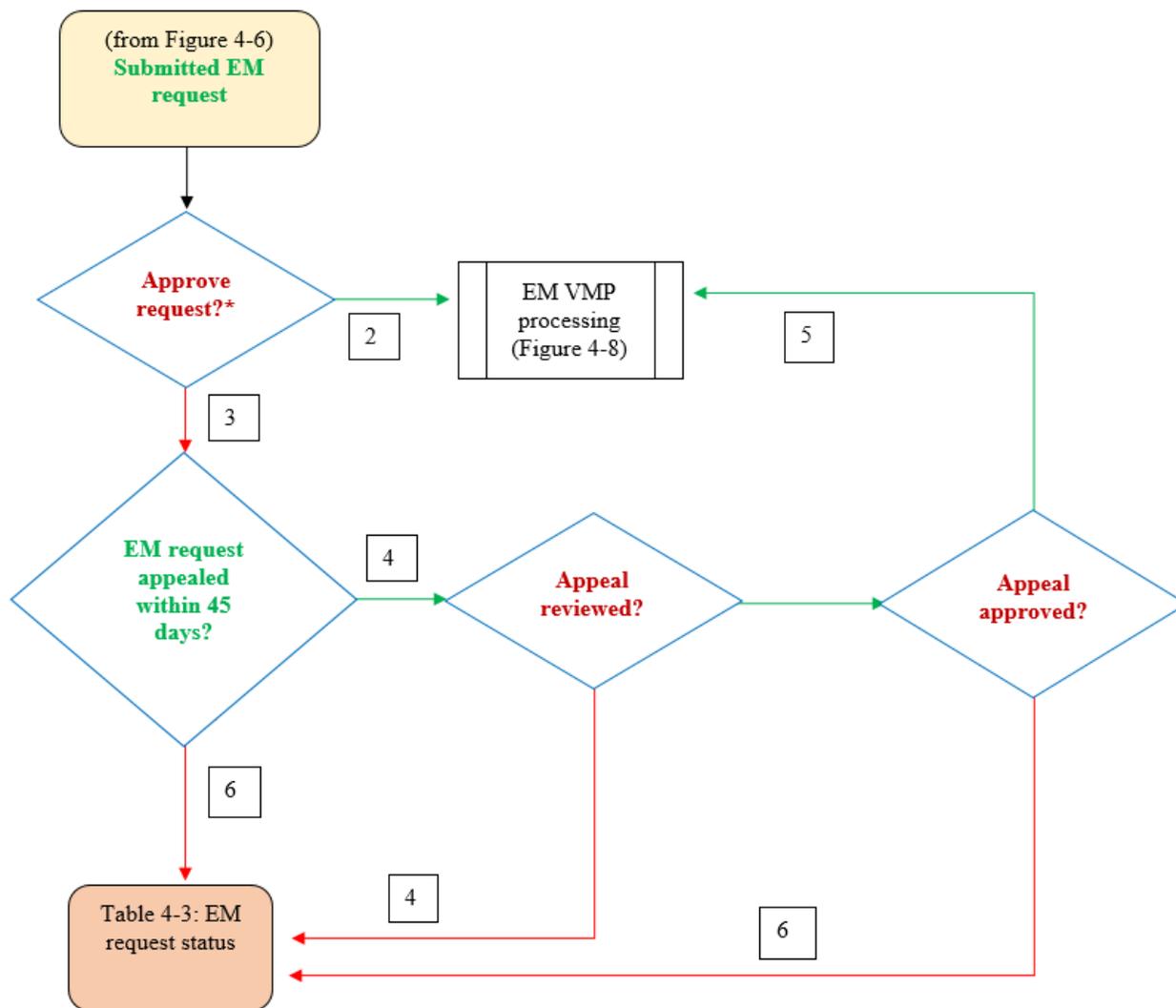


Figure 4-7. -- EM request process. Text user color code from Table 4-1. Box and number is Table 4-3 Step. Module user interface is in the EMPR application. \*EM request is automatically approved for the upcoming year for all vessels currently in EM that did not opt out in Figure 2.3.

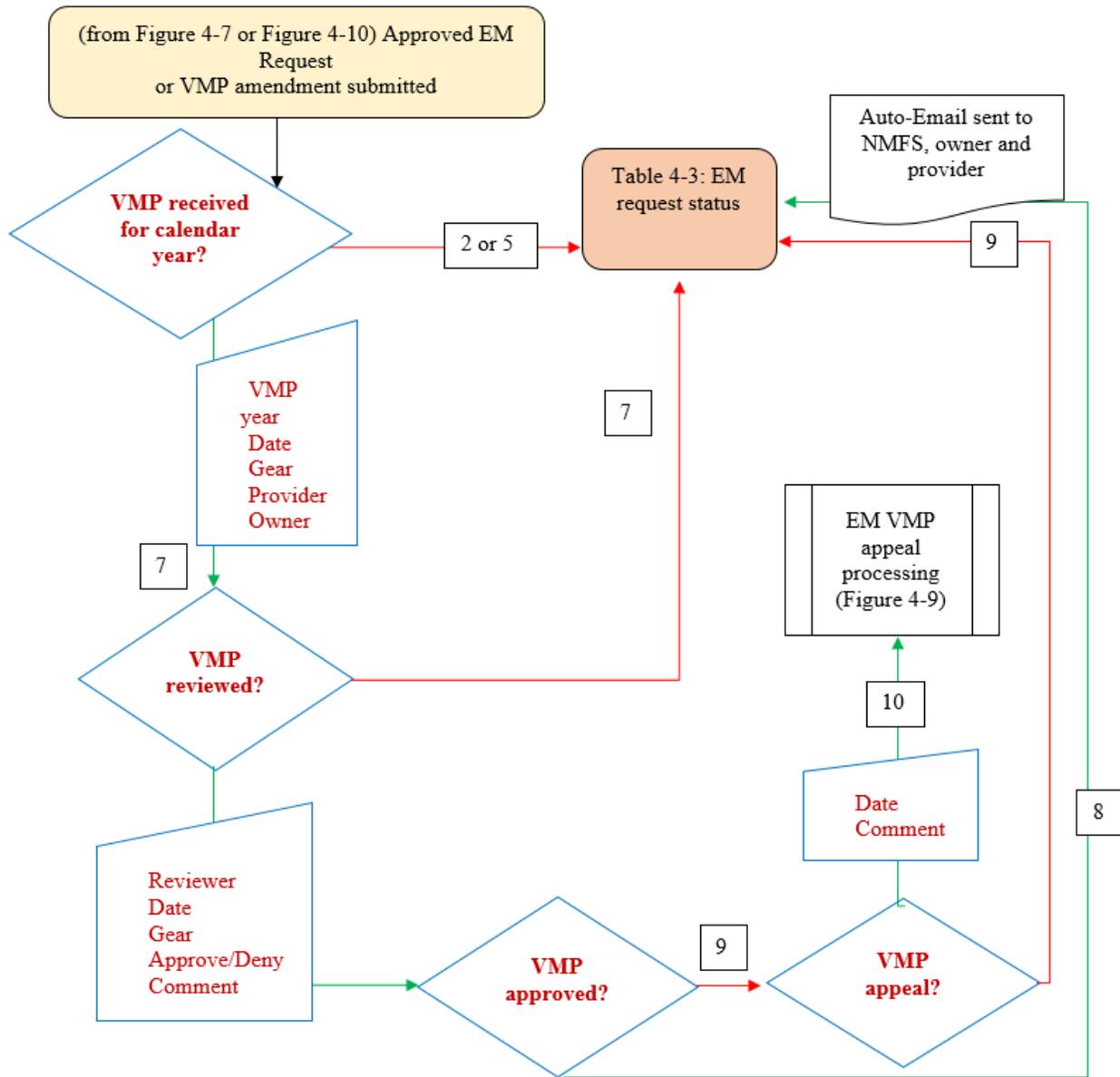


Figure 4-8. -- EM VMP process. Text user color code from Table 4-1. VMP sent by owner via fax, email, mail. Box and number is Table 4-3 Step. Module user interface is in the EMPR application.

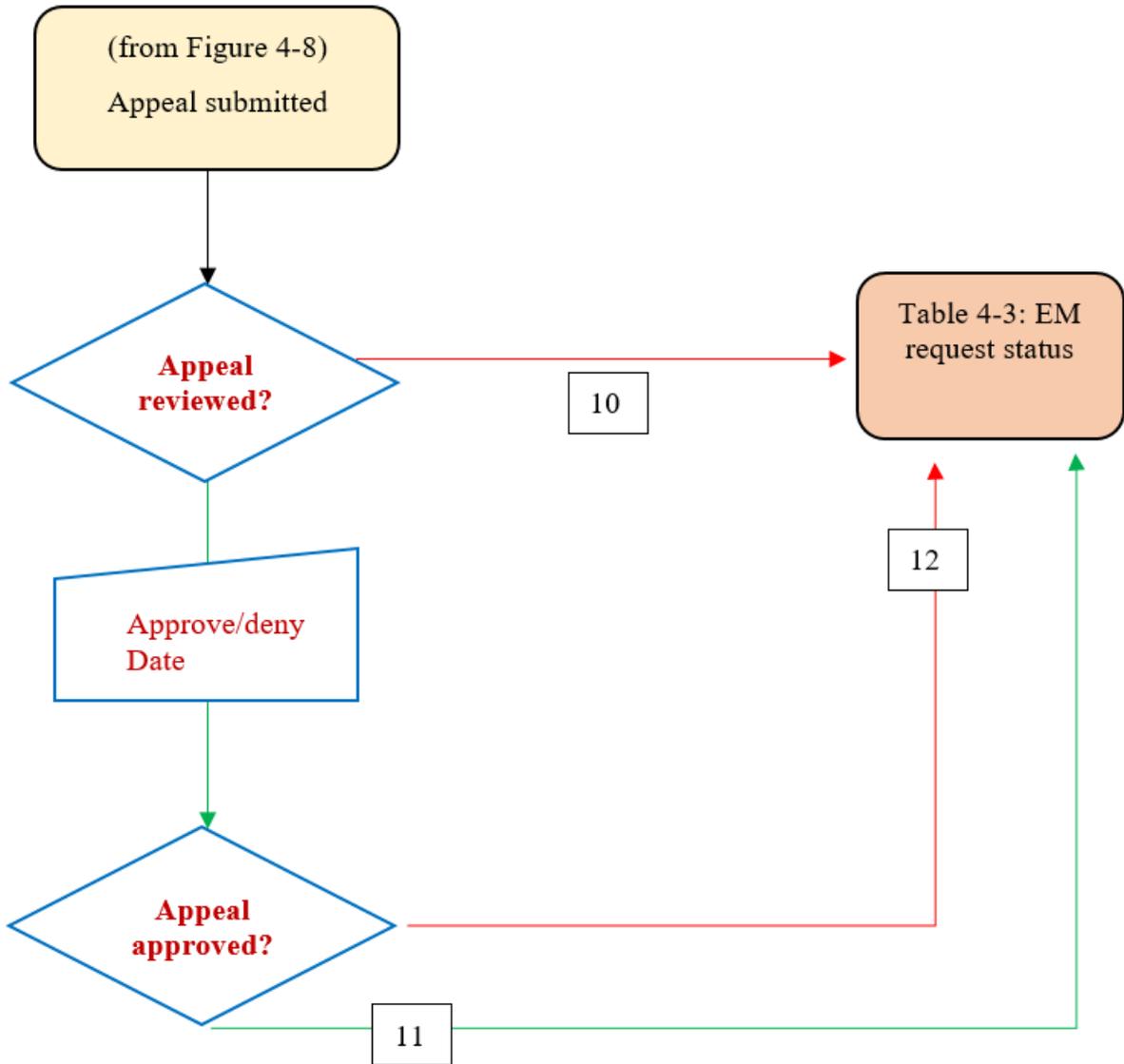


Figure 4-9. -- VMP appeal process. Text user color code from Table 4-1. Box and number is Table 4-3 Step. Module user interface is in the EMPR application.

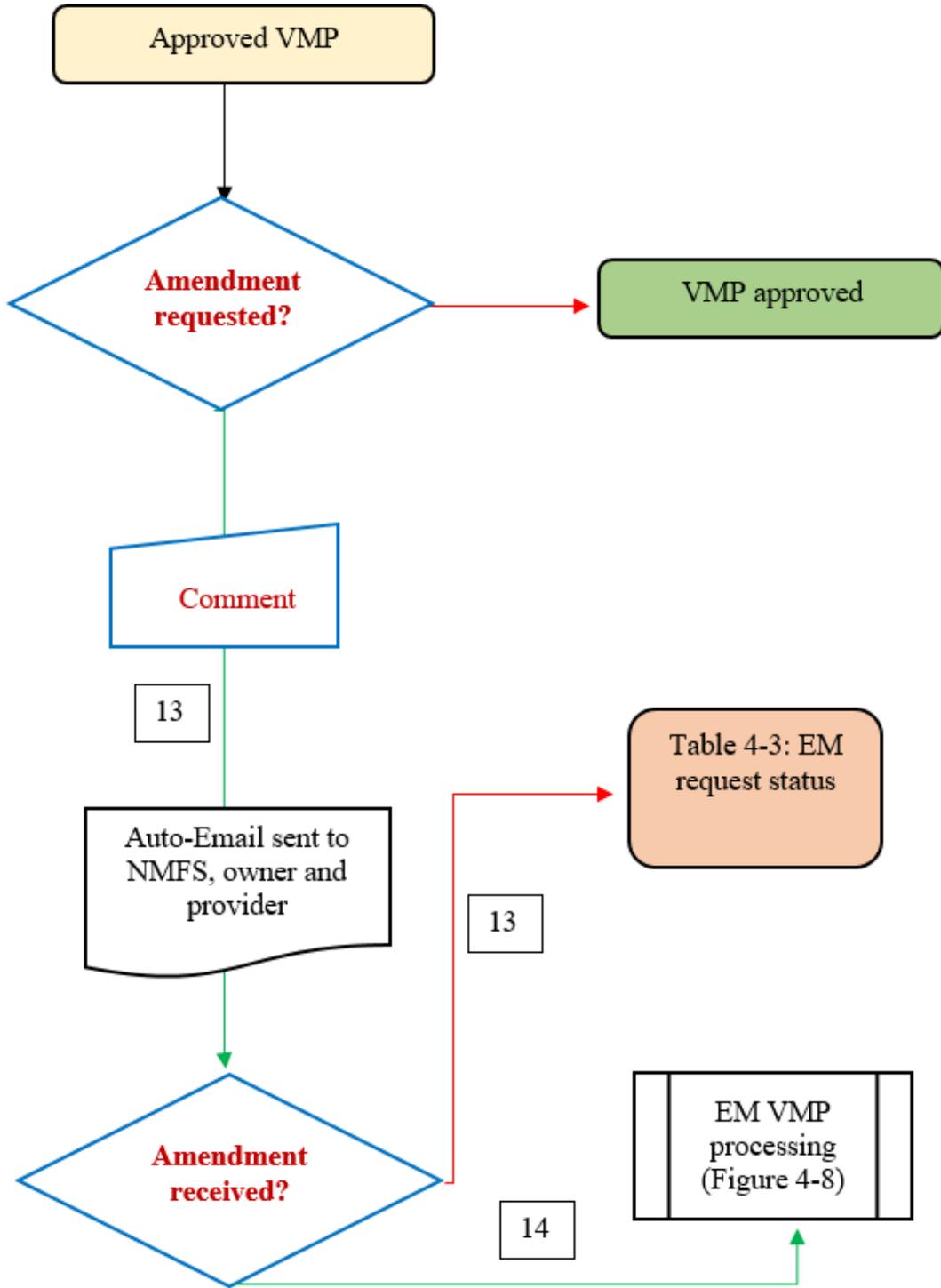


Figure 4-10. -- EM VMP amendment process. Text user color code from Table 4-1. Box and number is Table 4.3 Step. Module user interface is in the EMPR application.

### 4.3 Manage Captains

The manage captains module allows owners to manage their captains' information, account status, passwords and vessel assignments. While vessel owners have the ability to manage only their own captains associated with their vessels, the call center and NMFS manage the same information for any owner. The user interface for the manage captains module is within the Trip Management System application (TMS) and data is stored within the ODDS and CAM tables. The following sections describe the main utilities available to users within the manage captains module.

#### 4.3.1 Manage captains' accounts

Owners can manage their captains' information, account status, and passwords. Owners add captains within the TMS by entering captain's information and a temporary password (Fig. 4-11). Captain information required includes the captain's first and last name, middle initial and phone number. User IDs for captains are auto created by the ODDS. If a captain's email is provided, TMS provides owners the ability to auto-email the captain their temporary password during adding or editing a captain. Once created, captain accounts are activated and they can log onto TMS.

Owners can select to edit captain's information, reset the password and change the account status. All captain information is editable except their username. When the password is reset, the account status is set to active, regardless of the previous status (Fig. 4-12). Deactivating an account removes all vessel assignments for the captain and prevents the captain from logging on to TMS.

#### 4.3.2 Manage captains' assignments

Owners can assign captains to, or remove captains from, any vessel registered to the owner within the ODDS database. Prior to captains logging fishing trips, owners must associated their vessels with their captains. There are no restrictions on assigning a vessel to multiple captains, or assigning a captain multiple vessels. Captains can only log trips for vessels they are assigned to (see Manage Sample Units module).

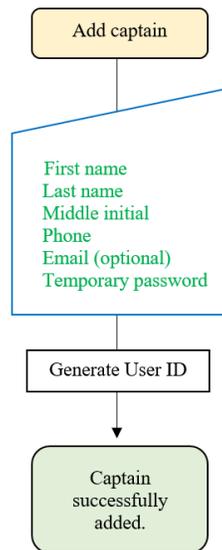


Figure 4-11. -- The add captains process.

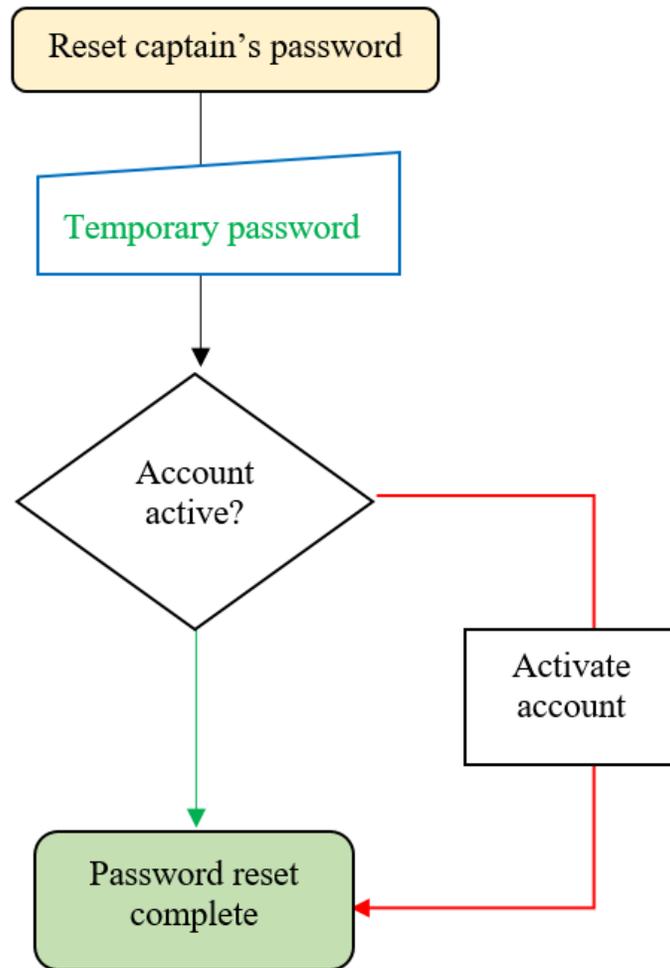


Figure 4-12. -- The process for resetting the password.

## 4.4 Manage Sample Units

The manage sample units module contains the information for the primary sample unit of *trips*, as well as the deprecated sample unit of *vessel* (see bullets below). This module allows the creation, changing, cancelation and closure of trips and stores the information in the ODDS (Fig. 4-13). Monitoring type and additional parameters, such as gear type, that are provided during trip logging affects the selection pool the trip belongs to and thus the selection rate for monitoring (see Manage Selection). Captains and owners are the primary users in this chapter and are grouped together and referred to as captains in this chapter. Captains manage their trips for each of their vessels, although if the trip is selected for monitoring, the vessel operator must work with the provider or call center to change, cancel and close the trip (see Manage Monitoring). User interface for the Manage Sample Units module is within the Trip Management System (TMS) application.

The ODDS classifies sample units into either trips (i.e., trip-selection) or vessels (i.e., vessel-selection).

- A trip sample unit is an individual fishing trip logged into the ODDS. Each trip logged is defined by its parameters and monitoring type and assigned to one and only one selection pool with its own selection rate. Each trip has a random chance of selection. Trips can have different states. A trip can change states based on if and when fishing or cancellation of the trip occurs (Table 4-4).
- A *vessel sample unit* was associated with the deprecated VALS system and has not been used since 2014. This sample unit type required an observer for every trip within a predetermined time period for randomly selected vessels. Vessel selection membership, selection probabilities and time periods were determined in Annual Deployment Plans (e.g., see NMFS 2013b). Random selection of vessels were conducted outside of the ODDS such that only the identify of selected vessels were known to the system. All trips logged by those vessels during the assigned time period were automatically selected for coverage. Exceptions to carrying an observer due to vessel logistical restrictions were documented in Vessel Assessment Logging System (VALS).

Since only the trip strata sample unit is currently used, the trip will be focus of the remainder of this chapter.

### 4.4.1 Log trips

To log a trip, captains first select their vessel, and then answer several questions to determine their selection pool. Some questions act as filters to avoid full coverage trips from being entered into the ODDS. These include trips anticipated under the American Fisheries Act (AFA) the Rockfish Program (RFP) (if logged to occur during April to November), or trawl gear Community Development Quota (CDQ) (Fig. 4-13). These questions are asked because AFA, RFP, and trawl CDQ trips are not logged into the ODDS. Captains with these types of fishing trips are instructed to contact OM providers.

To log a trip, captains enter the anticipated gear type they will fish, if they plan to deliver to a tender, if this trip will be fishing CDQ, and the anticipated start and end dates, times, and ports (Figure 4-14). If the gear is pot or longline then captains also indicate if the trip is an Individual Fishing Quota (IFQ) trip and if they intend to fish in multiple IFQ/CDQ areas.

Prior to fishing, trips are considered as pending, a logged trip not canceled or closed. Closed trips are trips associated with landing data in the ODDS and are considered completed. Although additional restrictions may apply for trip logging under certain circumstances (see Manage Coverage Table 4-4 and Manage selection, Inheritances). ODDS allows up to three pending trips to be logged; OM selected pending trips with an observer assigned do not count against this three trip log limit.

There are a series of validations performed by the ODDS for each trip. Some validations check for qualities related to the vessel. EM vessels with high priority problems are flagged and will receive an on screen warning that the problem needs resolved prior to trip start.

There are two places where EM equipment is quality controlled that have implications to the ODDS. The first is during a function test, the second is during video review. If either of these processes identifies a high priority problem then trip logging is reduced to one. EM vessels without a valid Vessel Monitoring Plan (VMP) cannot log trips (see Manage Coverage).

Sometimes permissions change based on trip characteristics. Trips are validated to ensure they are not over forty-five days in length, the trip will start within 30 days of date logged, the trips are logged in chronological order (the trip being logged is not before another trip), the trip dates do not overlap and the selection rates for the year have been set. In addition, OM providers may delay a trip's departure if the captain logs an observer monitored trip with a start date within 72 hours (see Manage Monitoring).

If all validations are met, the trip is logged and the vessel is issued a trip number and the result of the random selection for monitoring. If the trip is selected for monitoring, the provider is notified via email. The captain must modify their trip information if validations are not met.

#### *4.4.2 Trip Actions*

Logged trips can be changed, cancelled or closed.

##### *4.4.2.1 Change trips*

Captains can modify their trips with some restrictions (Fig. 4-15). Although the same validations in the log trip process apply to trip changes, permissions depend on the selection status. The owner or operator of the vessel are allowed to change trips not selected for monitoring. Changes to trips selected for observer monitoring can only be changed by the OM provider. Changes to trips selected for electronic monitoring only can be changed by the call center.

If a captain changes their choice for to an AFA or a RFP trip, then the trip is canceled and logged outside of the ODDS. If trip edits include changes to gear, tender delivery, or CDQ, the captain must cancel the pending trip and re-log a new trip with the correct information. The re-logged trip will be assigned the current selection rate for trip parameters and may be selected for monitoring (see 4.6 Manage Monitoring).

##### *4.4.2.2 Cancel trips*

Trips that are pending can be cancelled either manually or from ODDS automated processes (Fig. 4-16). Captains can cancel pending trips not selected for observer monitoring. The captain must contact the OM provider to cancel a trip selected for observer monitoring. The ODDS automated cancel processes support data consistency and quality by helping ensure current year selection rates are applied to logged trips. Pending trips not selected for monitoring and not started prior to 1 December of previous year, are canceled by the ODDS on 1 January and labelled as Cancel by System.

Regardless of whether by the system or by the captain, cancelling a trip may cause other trips to be cancelled. If an OM trip is canceled after its planned embark date, then all trips between that planned embark date and the cancellation date are also canceled in what is called Cancel cascade.

##### *4.4.2.3 Close trips*

To close a trip, the trip must be first in pending status, fishing must have occurred and the date of closure must be after the declared trip start date. Trips may be closed manually within TMS or from the ODDS automated processes (Fig. 4-17). Captains may close trips not selected for observer monitoring by selecting associated *landings* (deliveries of fish catch to processors). Captains also have the option to

close a trip just by verifying the delivery date and port; this tool is useful if landing data is not yet available.

The landings listed in TMS are obtained through a connection to an interagency data system known as eLandings, which manages Alaska commercial fish landing data. TMS list all the possible landings within the trip's start and end dates for the vessel. Trips selected for observer monitoring are automatically closed when the OM provider assigns an observer to the trip (see Manage Monitoring).

The ODDS utilities automatically closed BSAI 100% trips (logged into TMS until April 2016) when an observer is listed as assigned to the vessel for the trip dates.

Table 4-4. -- Description of trip status.

Trip status	Description
Pending	Trip is not completed or canceled.
Cancelled	Trip was canceled.
Cancel by System	Trip was automatically canceled January 1. Status assigned to all pending trips not selected for monitoring and not started prior to December 1 of previous year.
Cancel Cascaded	Trip was automatically canceled. Status assigned to all trips whose start date fell between another trip's cancel date and planned trip start date.
Closed	Trip was fished, landed and closed in the ODDS.

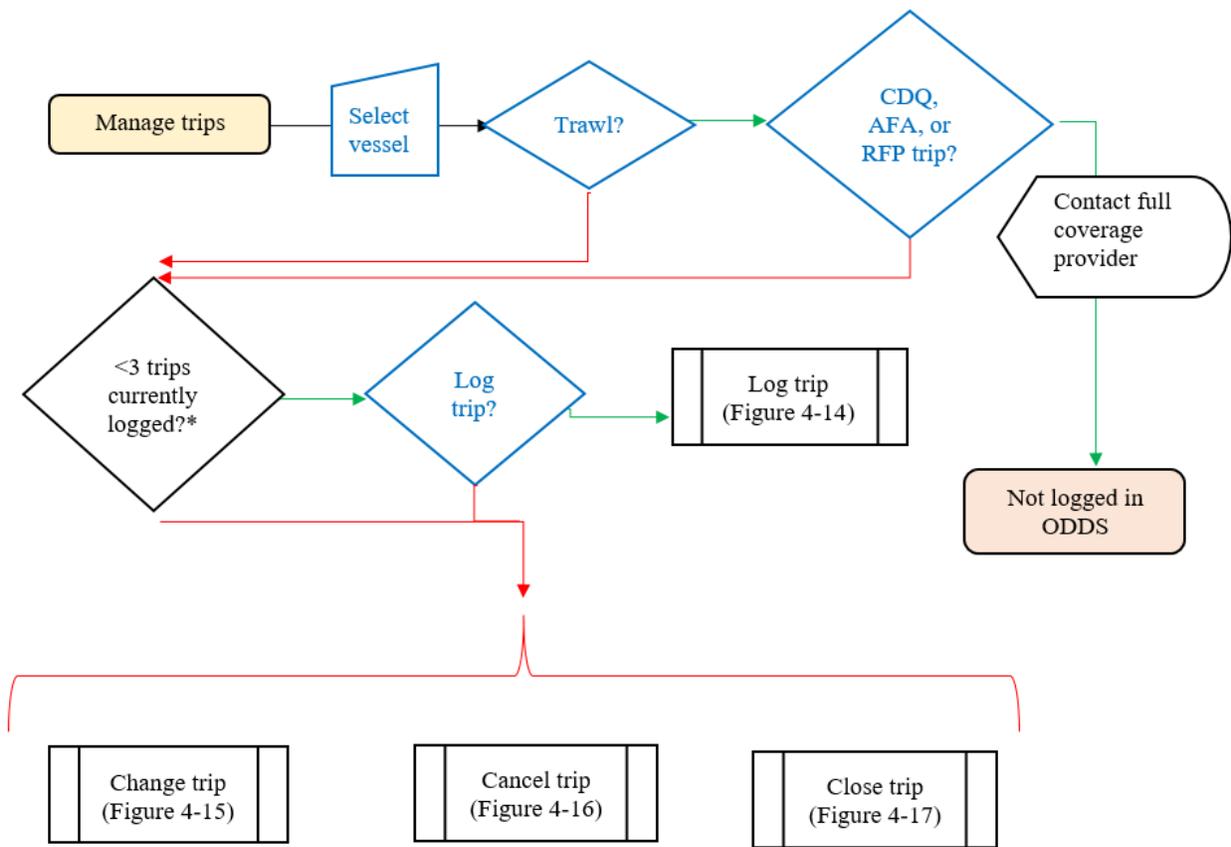


Figure 4-13. -- Manage Sample Unit overview of trip processes. \*Additional trip logging restrictions may apply (see Table 4-3 and Manage Selection, section 4.5 for details).

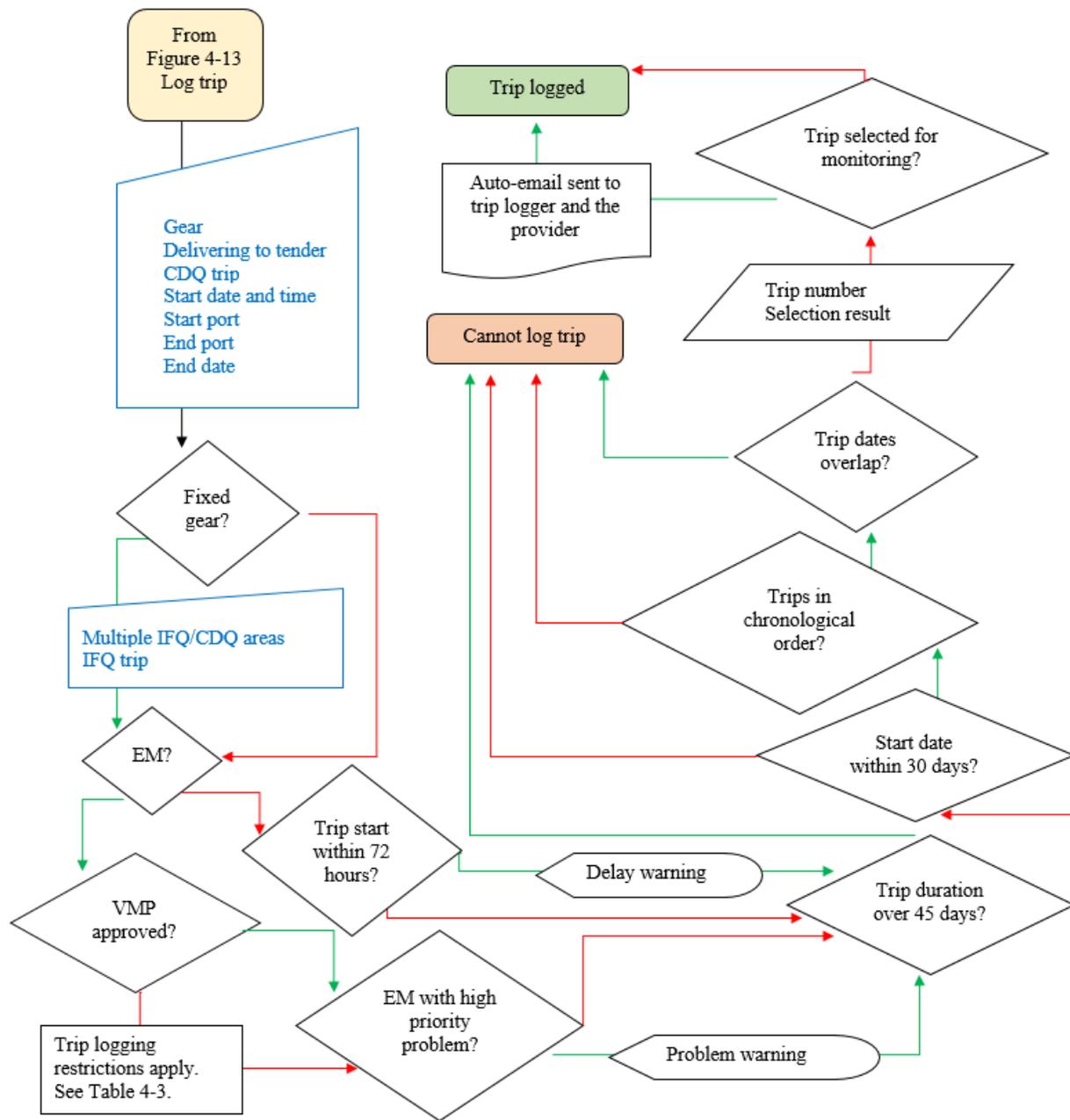


Figure 4-14. -- The log trip process. The box ‘Delay warning’ refers to screen prompt that a delay of the trip is proposed and asks the user if they agree to conditions of delay. The box ‘Problem warning’ refers to screen prompt that a problem has been detected for their vessel and informs the user of conditions of continuing.

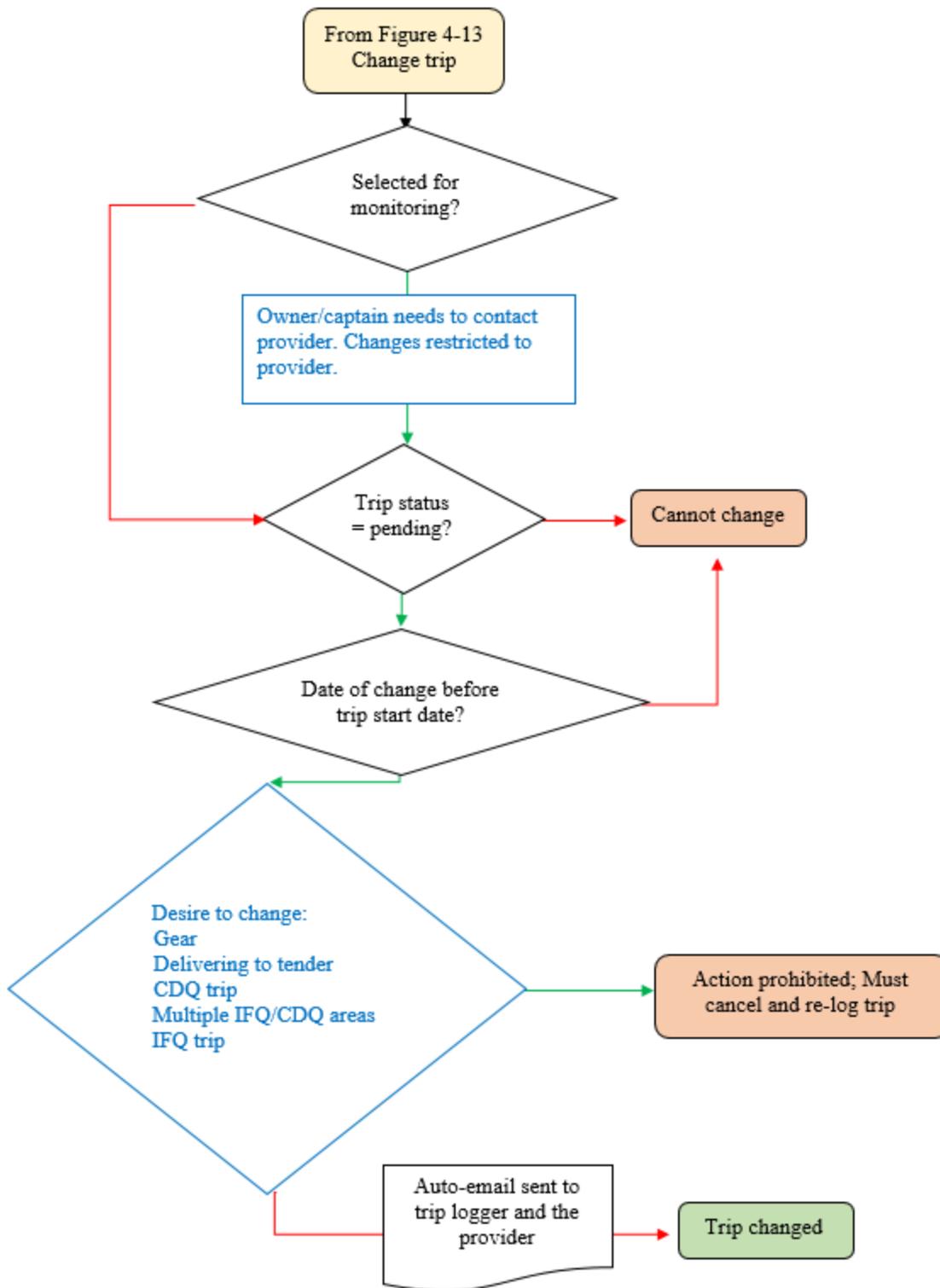


Figure 4-15. -- The change trip process.

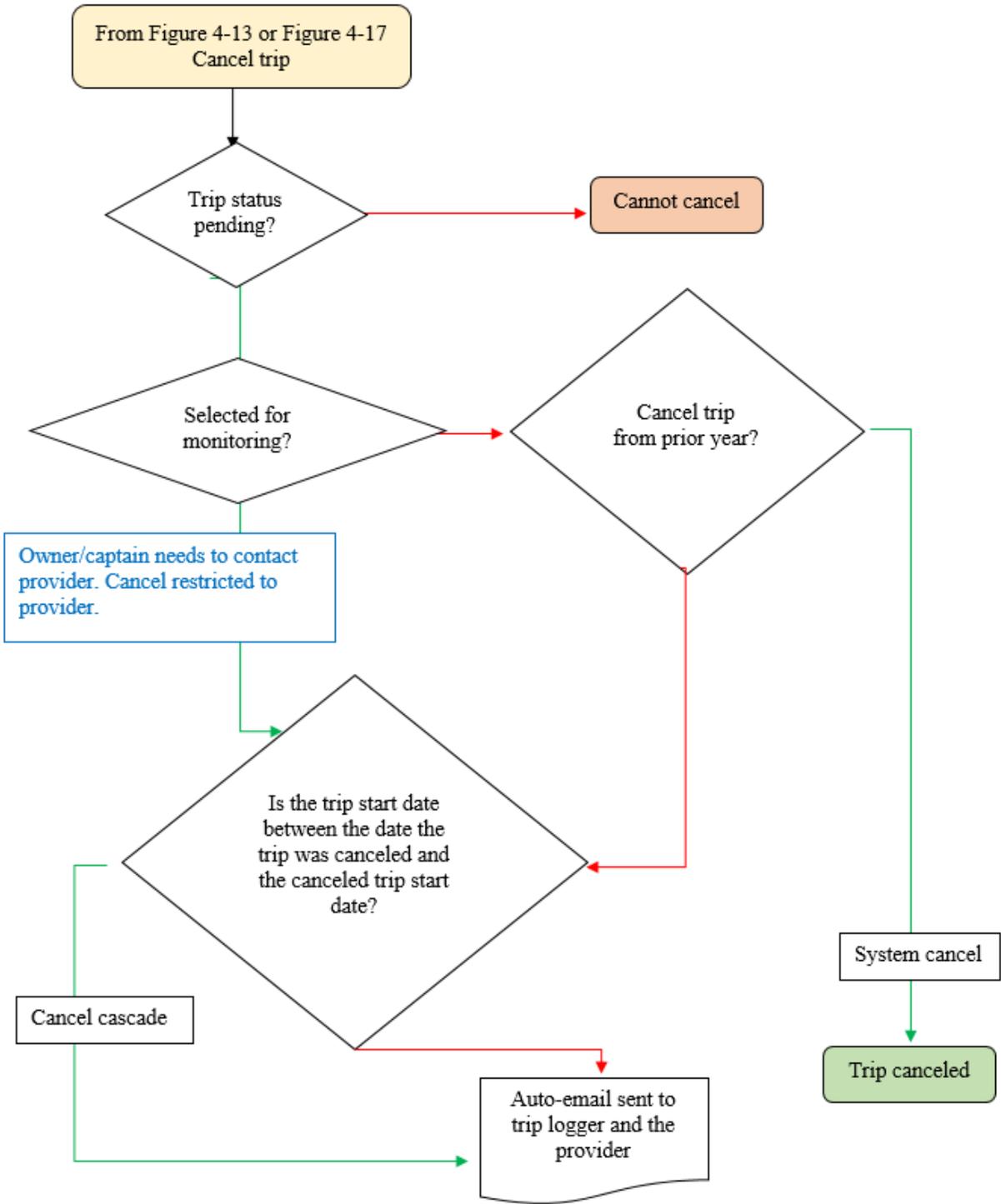


Figure 4-16. -- The cancel trip process.

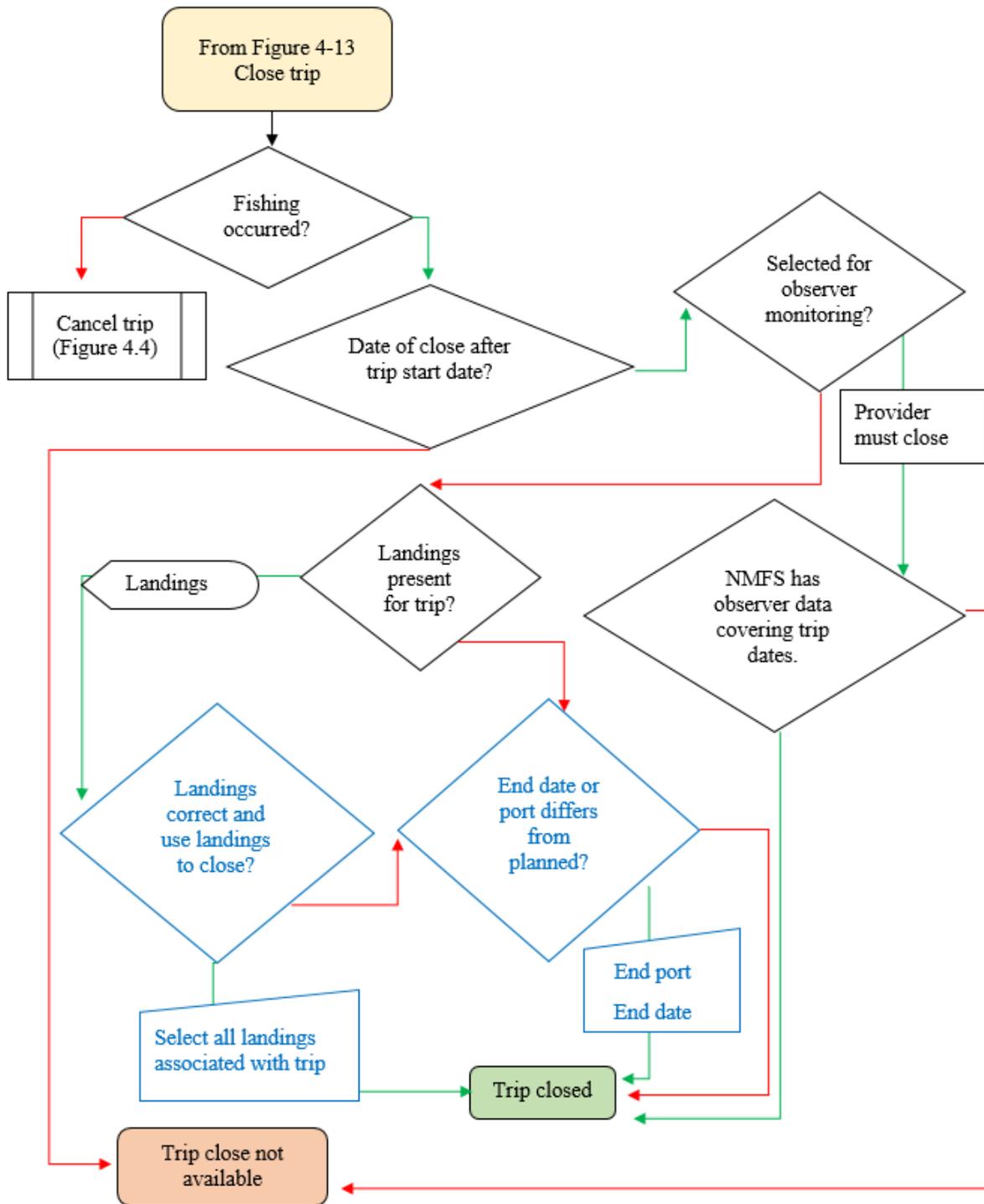


Figure 4-17. -- The close trip process.

## 4.5 Manage Selection

The manage selection module regulates selection pools and rates, and enforces *inheritance*, the transfer of monitoring requirements from a canceled trip to a different trip. Trips are placed in a selection pool based on coverage, vessel and trip parameters. Each pool may be selected for monitoring at a different selection rate. Inheritances transfer monitoring requirements from a canceled trip to a different trip. NMFS users are the managers for this module. When logging trips captains receive the selection outcome, and providers are notified of trips selected for monitoring.

### 4.5.1 Manage selection pools and rates

Trips are assigned to a selection pool based on trip parameters (e.g. gear, tender delivery) and coverage type (full or partial). The number of selection pools available has increased through the years. Table 4-5 shows the selection pools available by year since the start of the ODDS and partial coverage in 2013 (descriptions for each selection pool are provided in Table 4-6).

The selection rate is the likelihood that a sample unit will be selected for monitoring from within each pool. When a trip is logged, a random number between 0 and 1 is generated. If the random number is below the pool's selection rate divided by 100, the trip is selected for monitoring. For example, if the selection rate is 12% and the random number generated is 0.05, then  $0.05 < (12/100 = 0.12)$  and the trip is selected for monitoring. Selection rates are set each year and can be found in the Annual Deployment Plans (ADP). For trips spanning multiple years (e.g. trip start year is 2018 and trip end year is 2019), the trip start year is used for the selection rate.

In some cases, the selection rate may need to be updated within the calendar year. One example is to comply with health and safety mandates in response to COVID-19.<sup>8</sup> To facilitate this, the selection rate add/update tool was created in Trip Management System (TMS) and is only available to key NMFS analytical staff. The analyst selects the pool to update, the effective date, and the new selection rate as a percent (Figure 4-18).

American Fisheries Act (AFA) and Rockfish Program (RFP) selection pools have been unchanged since the start of partial coverage in 2013. AFA and RFP trips are not logged into the ODDS and are 100% monitored. Bering Sea/Aleutian Islands (BSAI 100%) trawl trips when targeting Pacific cod were logged into the ODDS and received a 100% selection rate until 2016. Regulations changed in 2016 so vessels fishing in the BSAI 100% pool no longer had to log trips. However the ODDS retained screening questions pertaining to AFA, RFP, and BSAI 100% activities to prevent full coverage trips from being entered (and paid for) through contracts between NMFS and its partial coverage providers.

#### 4.5.1.1 History of selection pools

In 2013 and 2014 selection pools varied by vessel size. Vessels 57.5 feet and over were placed in the *trip-selection* pool in which NMFS randomly selected trip sample units for monitoring. Vessels under 57.5 feet were placed in the vessel selection pool in which NMFS randomly selected 2 month periods for vessel sample units. Vessels selected for a two month period were required to carry an observer on every trip during the 2 months. Selection rates differed between trip and vessel pools but not within the pools.

The Vessel Assessment Logging System (VALS) application managed requests for release from observer monitoring for vessels in the *vessel* pool. Vessels were eligible for release from carrying an observer due to lack of space, unsafe observer work environment, or fishing using electronic monitoring (EM). NMFS responded to each request in one of 3 ways:

- Permanently release – vessel does not have to carry an observer.

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<sup>8</sup> Dunleavy, M., A. Crum and A. Zink. 2020. Alaska Protective Plan for Independent Commercial Fishing Vessels Appendix 01 to Health Mandate 017, Part of Phase 1, Issued: April 23, 2020.

- Conditional release – vessel is released from carrying an observer for a period of time.
- Deny release – vessel must carry an observer if selected for monitoring.

In 2015, trip became the sample unit for all vessels regardless of size. However, selection rates still varied between vessels 57.5 feet and over, and those under. These selection pools were referred to as *Big T* and *small t*, for vessels 57.5 feet and over and those under 57.5 feet, respectively. 2015 was also the start of capturing electronic monitoring coverage and the EM selection pool within the ODDS.

In 2016 the Big T and small t selection pools were combined into the gear selection pool. The gear pool is split into three selection pools based on gear: trawl, longline, and pot. In 2017, the 3 gear pools were further split into expected tender and non-tender delivery for the trip (gear and tender pools). Thus, different selection rates can be applied to the 6 non-EM selection pools created from gear and tender delivery combinations. Also in 2017, a selection pool was created for the EM innovation and research vessels; these vessels do not log trips and are not selected for monitoring (EM research pool).

In 2018, the EM selection pool was split into the two EM gears of longline and pot (EM gear pool). As in non-EM, EM was also split into expected tender delivery; however, currently NMFS does not differ the selection rate for EM tender deliveries.

The same year, the EM compliance monitoring selection pool was created for vessels intending to fish multiple IFQ areas and retain catch weight in excess of the amount allowed in any of the single IFQ areas fished. This regulatory compliance ensures catch in each area does not exceed the quota for area following regulation. When logging a trip, an EM captain fishing multiple IFQ areas has the option to select the 100% *EM compliance monitoring* pool. If the captain selects *EM compliance monitoring*, a random number will still be generated. If the random number generated is below the EM selection rate, then the trip is monitored in that selection pool, otherwise it is monitored in *EM compliance monitoring* pool.

Although selection rates were standardized between vessel sizes in 2016, one difference that remains is the number of sequential trips logged into the TMS that may be monitored through random selection. Following NMFS Policy, vessels under 57.5 feet cannot be selected for more than 2 observer monitored trips in a row unless one of the trips is inherited.

#### 4.5.2 *Inheritances*

Inheritances transfer monitoring requirements from a canceled trip to a different trip. NMFS policy is that if a trip selected for observer monitoring is canceled, the selection for that trip is inherited to the next newly logged trip with the same stratum, gear type and tender delivery parameters (Fig. 4-19). A canceled EM trip results in proactive inheritance to the next pending trip yet to embark. The trip that inherited the monitoring requirement from a prior cancellation of a selected trip is called an inherited trip. If an inherited trip is cancelled, the captain is only able to log one trip at a time until the inherited trip is fished and closed. In rare cases the inheritance is lost.

Table 4-5. -- Partial coverage selection pools used by year. \*Indicates finer resolution of selection rate by gear. \*\*Indicates finer resolution of selection.

Selection Pool	Year							2020
	2013	2014	2015	2016	2017	2018	2019	
AFA, BSAI 100%, RFP								
EM compliance monitoring								
EM gear*								
EM research								
Gear and tender**								
Gear*								
EM								
Big T (Vessels ≥57.5 ft. LOA)								
Small t (Vessels ≤ 57.5 ft. LOA)								
Trip (Vessels ≥57.5 ft. LOA)								
Vessel (Vessels ≤ 57.5 ft. LOA)								

Table 4-6. -- Selection pools start and end years and description. Missing end years indicates the pool is currently used.

Pool	Start year	End year	Description
EM compliance monitoring	2018		EM Compliance Monitoring - Fishing IFQ multiple Areas and captain self-selects for EM monitoring.
EM gear	2018		Selection rates for electronic monitoring. These rates can vary by gear. Also, extensible to tender.
EM research	2017		NMFS EM research vessels that do not log trips. These vessels are not selected for monitoring.
Gear and tender	2017		All non-EM with separate rates for each gear type and tender delivery combination.
Gear	2016	2016	All non-EM with separate rates for each gear type. Replaced with Gear and tender in 2017.
EM	2015	2017	Electronic monitoring. Selection rate is the same regardless of gear type. Replaced with EM Gear in 2018.
Big T	2015	2015	Vessels 57.5 feet or over. Replaced with Gear in 2016.
Small t	2015	2015	Vessels under 57.5 feet. Replaced with Gear in 2016.
BSAI 100%	2013	2016	BSAI 100% Pacific cod fishery. Captain logs trips in the ODDS but contacts an OM provider to carry an observer 100%
RFP	2013		Rock Fish Program trips. This pool is required to contacting an OM provider. Filter question within the ODDS to prevent logging this type of trip.
AFA	2013		American Fisheries Act. This pool is required to contacting an OM provider. Filter question within the ODDS to prevent logging this type of trip.
Trip	2013	2014	Vessels 57.5 feet or over with each trip randomly determined if monitored. Replaced with Big T and Small t in 2015.
Vessel	2013	2014	Vessels under 57.5 feet, randomly determined of required to carry an observer for every trip within a two month period.

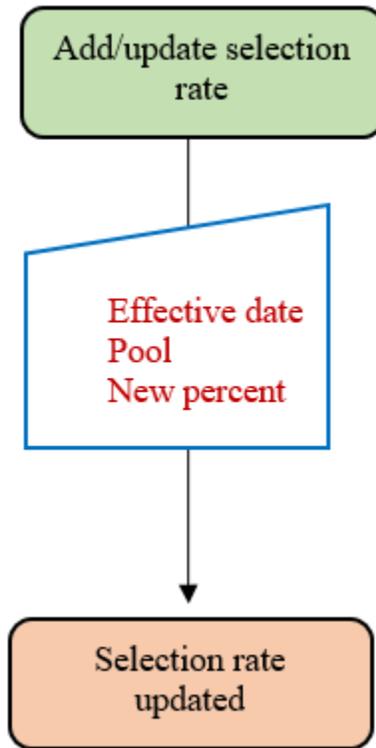


Figure 4-18. -- Manage pool selection rate process.

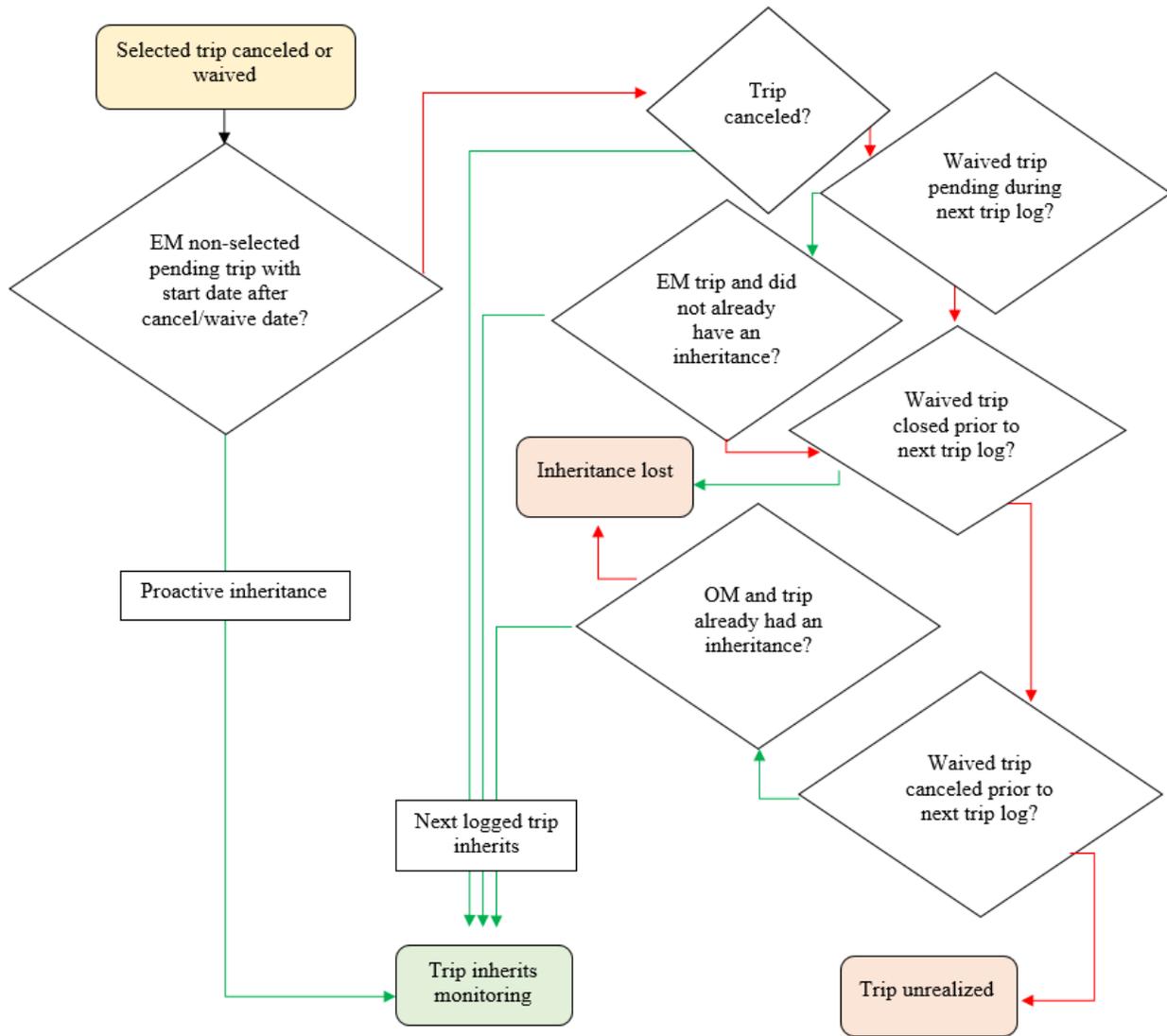


Figure 4-19. -- Inheritance transfer.

## 4.6 Manage Monitoring

This module was created for OM providers to manage the logistics of assigning an observer to selected trips tracking EM logistics. OM and EM providers are the primary users of this module (Table 4-7). The tools of this module are within the Trip Management System (TMS) application for OM and the Electronic Monitoring Provider (EMPR) application for EM.

Trips selected for OM carry an observer for the entire trip. The observer collects data and transmits the data to NMFS prior to mailing or bringing back the raw data. EM monitored trips data are recorded on a hard drive, including haul data and video of gear retrieval. EM data are reviewed by a grantee working with NMFS.

### 4.6.1 Assign/update observer

Observer monitored trips have the observer assignment and updating tool. Vessel operators and OM providers are notified of the selection to be monitored. OM providers can then enter into communication with vessel operators to work out the logistics of observer deployment for the trip (Figure 4-20). Although there are no conditions on changing the observer's embark and disembark and trip end date, time, and port for pending trips, the initial observer must be assigned prior to the trip start date. (Figure 4-21). Trip start date, time and port can be changed up to 48 hours after the anticipated trip start. In the rare case the initial observer is unable to complete a trip, the ODDS allows a provider to assign a different observer to the trip within 48 hours of the trip start date.

### 4.6.2 Trip delay

The trip delay tool is only for trips selected for OM. The option to delay a trip is available to OM providers when the vessel's anticipated start date is within 72 hours of the date the trip was logged into TMS. While it is not required that the OM provider delay a trip, this option is made available to OM providers in order for them to have 72 hours to facilitate the logistics of transporting observers to and from remote ports (Figure 4-20). If the OM provider selects to delay the trip, the planned trip start and end dates are delayed to 72 hours and the option to delay will not be shown again for the trip. The delay information will be sent through an auto email to the *trip logger*, user who entered the trip into the ODDS.

### 4.6.3 Trip waivers

The trip waiver tool is available for all trips selected for monitoring. When the provider is unable to supply an observer at the time of vessel's embark date, or when a problem with the EM system cannot be resolved prior to the trip, providers may request a trip waiver when vessel embark date is within 72 hours of current Alaska date and time. For OM trips the OM provider may directly request to NMFS that the trip be waived within the TMS. EM providers can request a waiver within the EMPR. NMFS decides to approve or deny trip waivers (Figure 4-22). If NMFS approves the trip waiver, the trip requirement to be monitored is waived and that decision is recorded by the ODDS. If NMFS denies the waiver, the trip must be monitored and that decision is recorded by the ODDS<sup>9</sup>.

### 4.6.4 Trip changes

All trips selected for OM must go through the OM provider to change trips. Trips selected for EM must go through the call center for changes. Only changes to observers, dates, times and ports are allowed. Forty-eight hours after trip start date only changes to end dates, times and ports are allowed (Figure 4-21). EM monitored vessels do not carry or have the option to edit an observer.

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<sup>9</sup> The ADP is used as a guidance document for these decisions.

#### *4.6.5 Trip cancel*

All trips selected for OM must go through the OM provider to cancel trips. Trips selected for EM must go through the call center to cancel. If observer data is present for the trip, to prevent accidental cancellation, the OM provider must contact NMFS to cancel the trip. The OM provider can cancel all other trips selected for monitoring that are not closed.

#### *4.6.6 Trip closures*

OM providers can close OM trips once the dates of the observer's data NMFS has received covers the observer embark and disembark dates. Captains can close EM trips after trip start date.

#### *4.6.7 Vessel Monitoring Plan (VMP)*

EM vessel owners select from EM providers for EM systems. Vessel Monitoring Plan (VMP) processing and documents are stored to comply with NMFS regulatory requirements for EM trips. VMPs must be submitted and approved by the NMFS for trip logging to begin each calendar year. The installation date, removal date (if applicable) and current status of EM systems for each vessel are stored in the ODDS database. This information is to be entered by the EM providers for each vessel. EMPR prevents documenting more than one system install per gear type and EM provider on the same vessel, and a system cannot be removed if there is not one installed. The EM systems are periodically tested and results are stored in the ODDS database.

#### *4.6.8 EM video Review*

During an EM selected trip, video of fishing operations are recorded on to a hard drive installed on the vessel. After the trip, the vessel operator sends the hard drive to the NMFS-specified EM reviewer. During video review, problems with the installed system may be noted and stored in the ODDS database. These problems are documented in EMPR with high priority problems visually flagged to alert users of its presence.

Table 4-7. -- Tools available for observer and electronic monitoring and the minimal user level with access in the NMFS, Provider, Owner, Captain hierarchy. \*The process for closing an EM monitored trip is in section 4.4 Manage Sample Units.  
 \*\*Contractor has sole role of video reviewer.

Tool	Monitoring	
	Electronic	Observer
Change observer	N/A	Provider
Change trip	Captain via call center	Provider
Trip delay	N/A	Provider
Request waiver	Provider	Provider
Approve/deny waiver	NMFS	NMFS
Trip cancels	Captain via call center	Provider
Trip closures	Captain*	Provider
Install/remove EM system	Provider	N/A
EM System tests	Provider	N/A
EM system problems	Provider	N/A
EM video review and problems	Contractor**	N/A

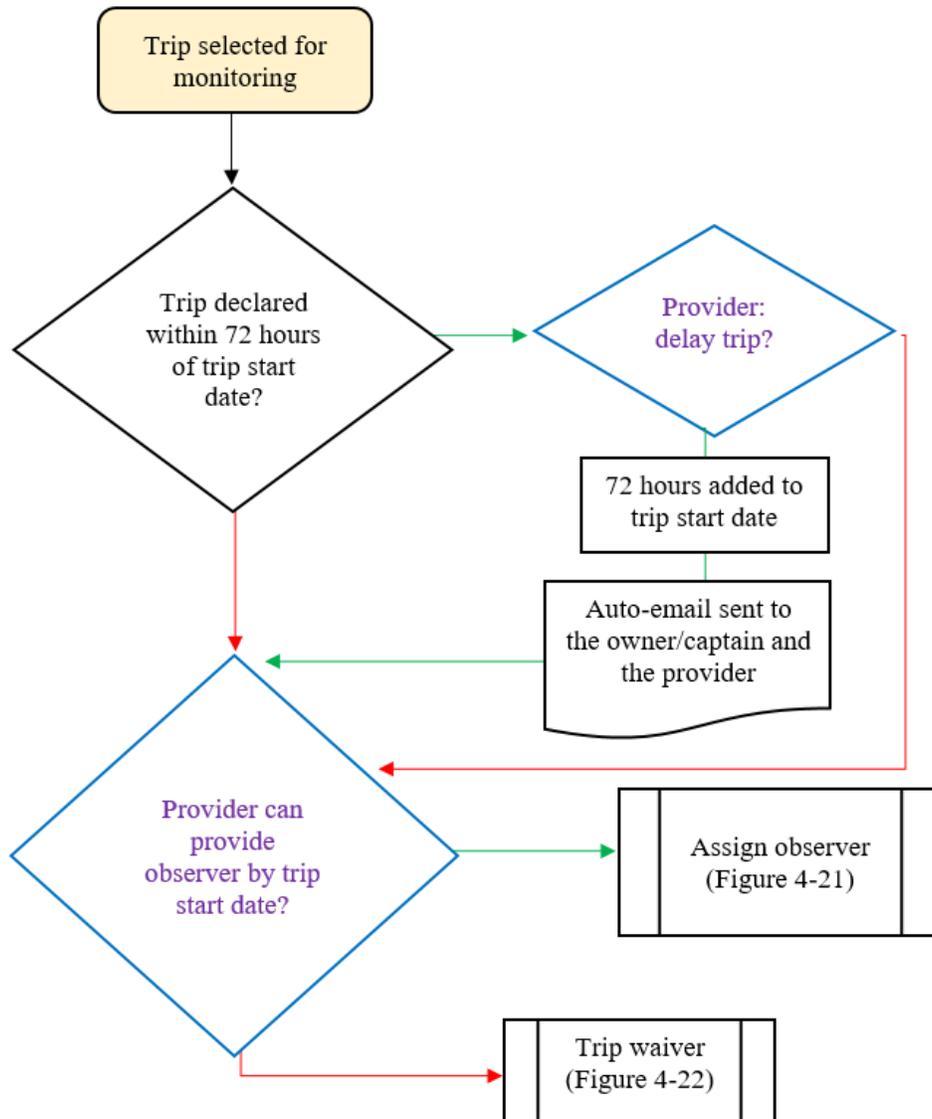


Figure 4-20. -- Assign observer overview for trip selected for monitoring, including trip delay option. The provider is the principal user in this case.

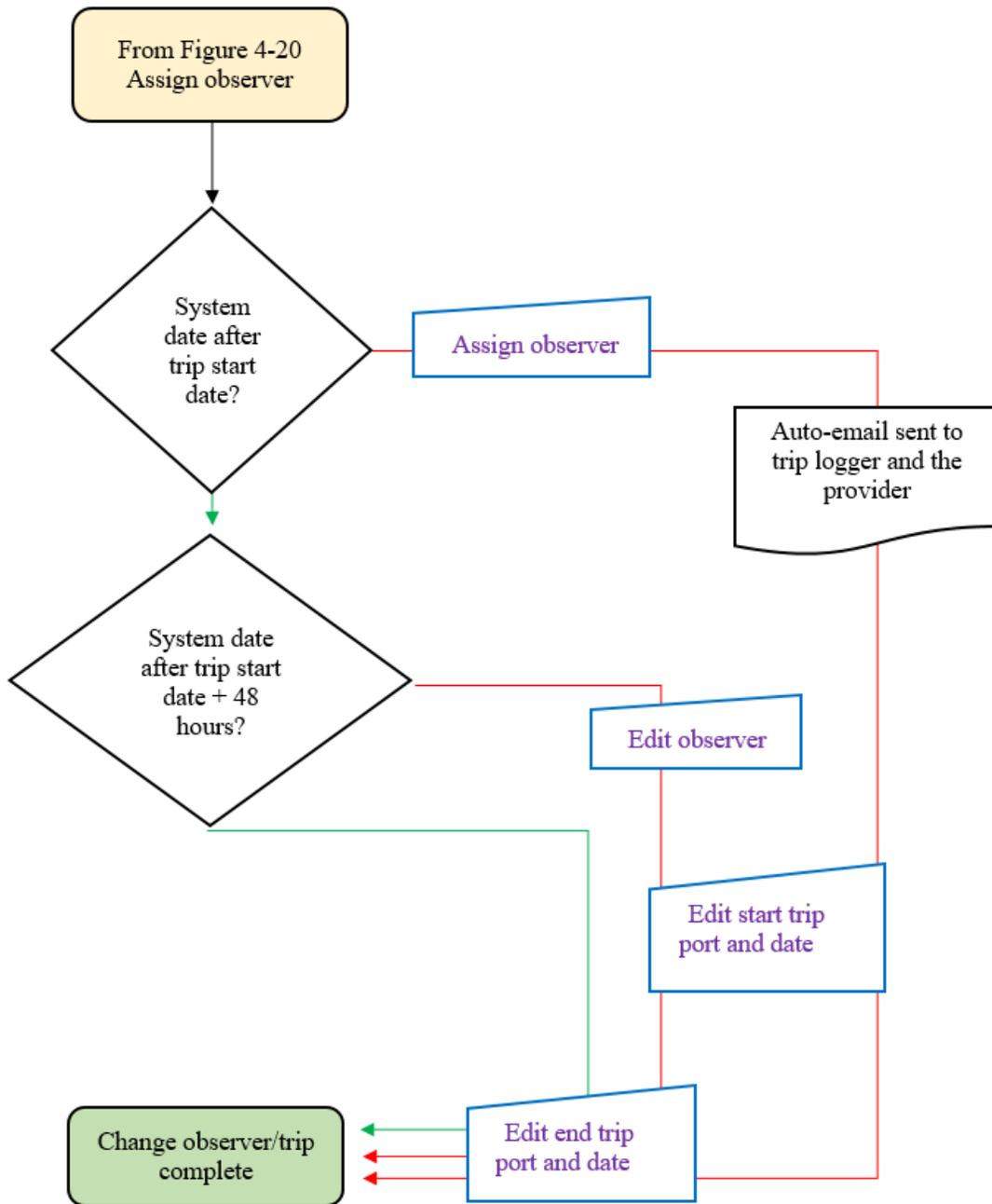


Figure 4-21. -- How trip start date and time affect the ability for providers to assign observers and make changes to logged trips selected for monitoring

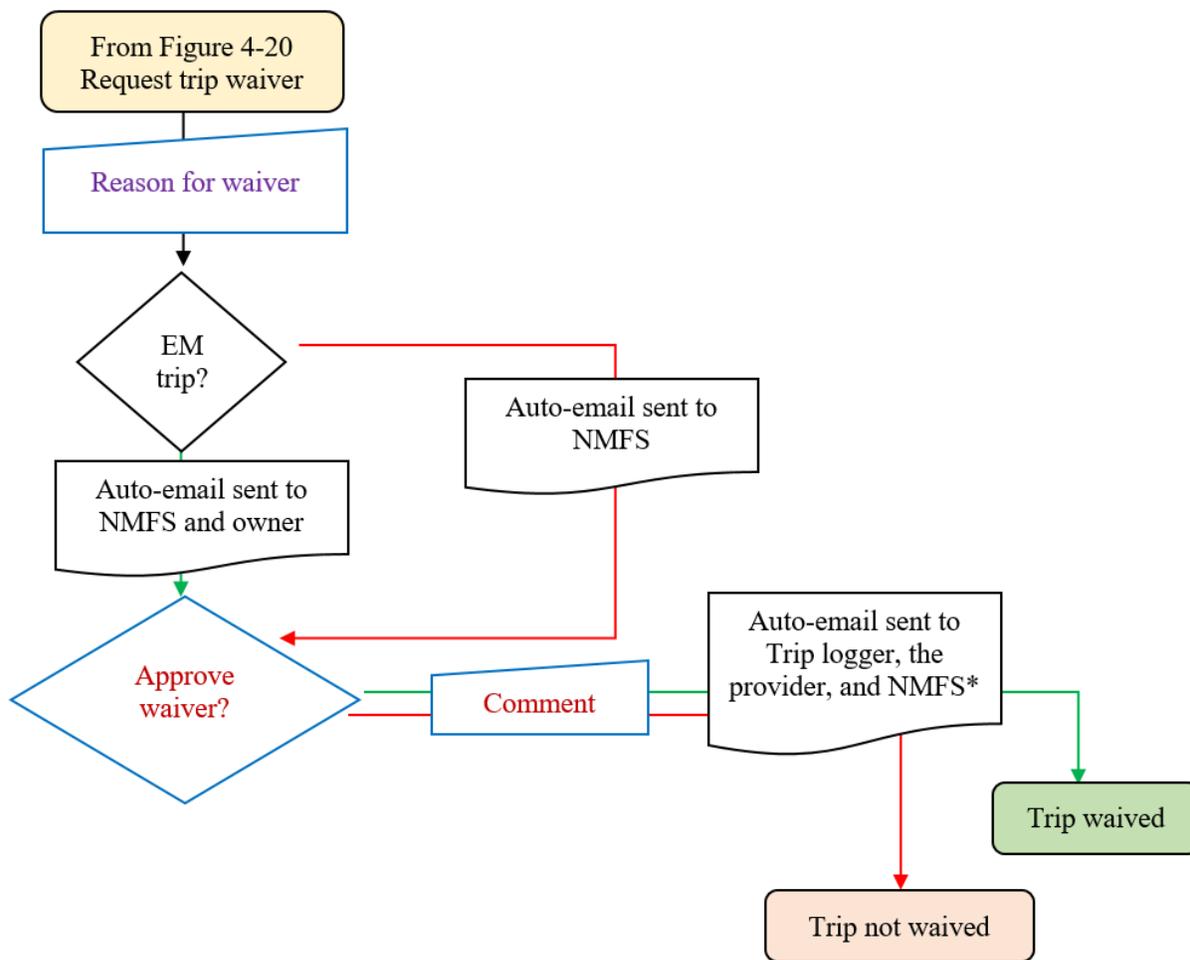


Figure 4-22. -- Process for trip waiver requests. Trip waivers are not available within 72 hours of the trip start. \*The NMFS are emailed only for EM trip waivers.

## 4.7 Report

To support NMFS administration and management, as well as provide information to all users, the ODDS has reports, auto-emails and interfaces to add, edit and summarize data. These tools are found in the three main ODDS applications of the Trip Management System (TMS), the Vessel Assessment Logging System (VALS), and the Electronic Monitoring Provider (EMPR). Access to these reports and tools varies by ODDS user type.

### 4.7.1 *Auto-email*

To ensure NMFS, the vessel operators, and providers are notified of important events, several actions within the ODDS trigger notifications through auto-emails (Table 4-8). Auto-emails are sent for trips selected for monitoring, trip changes, cancels, waiver requests and waiver results. An auto-email is also sent out for OM trips when an observer is assigned. Electronic monitoring auto-emails are also sent out for problems logged, high-priority problem resolved, high-priority problem effected trips, VMP approvals and amendments.

Auto-emails for trip waiver request, trip change, selection of a trip for monitoring and assigning an observer to a trip all have the trip receipt attached and are unique for each logged trip.

Trip receipts are provided by NMFS and contain information on the fishing vessel's name and Alaska Department of Fish and Game (ADF&G) number, the trip number, status, start and end dates and times, who logged the trip or who was the trip logged for, and the date and time trip was logged. Trip receipts can be downloaded for all log trips with the report tools built into TMS.

### 4.7.2 *Reports and tools for information management*

Within the ODDS applications are reports and tools to manage information. Information is available through reports (on screen information), and downloads of reports and documents. Information can be added by upload (storing documents into the ODDS database) and by user interfaces (manual entry of information that is stored the ODDS database). Table 4-9 and Table 4-10 contain the reports and tools available for managing information.

Table 4-8. -- The ODDS auto-emails.

Coverage monitoring	Action	The ODDS Application that triggers Email	Email sent to	Attachment	Figure
EM	High priority problem resolved	EMPR	NMFS, owner and provider		
EM	Problem logged	EMPR	NMFS, owner and provider		
EM	VMP amendment required	EMPR	NMFS, owner and provider		Figure 4-10
EM	VMP approved	EMPR	NMFS, owner and provider		Figure 4-8
EM	Vessel with high priority problem and trip ends.	ODDS database scheduled daily job	NMFS and owner		
EM	Vessel with high priority problem and trip to start within 72 hours.	ODDS database scheduled daily job	NMFS and owner		
EM and OM	Trip canceled	TMS	Trip logger and the provider		Figure 4-16
OM	Trip delay	TMS	Trip logger and the provider	Trip receipt with delay waiver	Figure 4-20
EM and OM	Trip changed	TMS	Trip logger and the provider	Trip receipt	Figure 4-15
EM and OM	Trip selected for monitoring	TMS	Trip logger and the provider	Trip receipt	Figure 4-21
OM	Observer assigned to trip	TMS	Trip logger and the provider	Trip receipt	Figure 4-21
OM	Trip waiver requested	TMS	NMFS		Figure 4-22
EM	Trip waiver requested	TMS	NMFS and owner	Trip receipt	Figure 4-22
EM and OM	Trip waiver approved or denied	EMPR and TMS	Trip logger, the provider, and NMFS		Figure 4-22

Table 4-9. -- Reports that pertain to all monitoring or EM only.

Coverage monitoring	Application	User access	Format	Description
EM	EMPR	NMFS and Provider	Report	All problems color coded by high priority and time to trip start.
EM	EMPR	NMFS	Download and upload	Allows uploads, storage and downloads of VMPs submitted for EM.
EM	EMPR	NMFS and Provider	Report	Status of all VMPs for provider, year and vessels.
EM	EMPR	NMFS	Report	All EM trips selected for monitoring, trip number, date logged, vessel, trip status, embark port and date, gear and the number of high priority problems.
EM	EMPR	NMFS and Provider	Report and user interface	Vessel name and ADFG#, provider, gear, date and time of tests and results for each vessel and gear.
EM	EMPR	NMFS and Provider	Report and user interface	Vessel name and ADFG#, provider, gear, add or repair problems. Also can upload and view photos of the problem.
EM	EMPR	NMFS and Provider	Report and user interface	Record of EM hardware installs and removes for each vessel, gear, and provider.
EM	TMS	NMFS	Report and user interface	EM vessel request report list vessels with approval or denial for EM coverage and user interface for selected NMFS staff to approve or deny requests.
EM and OM	TMS	NMFS	Report	History of selection pools selection rates.

Table 4-10. -- OM reports available in the ODDS.

Coverage monitoring	Application	User access	Format	Description
OM	TMS	NMFS and Provider	Report	All trips for selected vessel.
OM	TMS	NMFS, Provider and telephone center	Report	List all selection pools associated with a vessel and their effective dates. Also list captains associated with the vessel.
OM	TMS	NMFS, Provider and telephone center	Report	List all observer monitored trip's cruise, trip number, vessel permit and name, and observer ID, name, embark date, disembark date and observer contract status.
OM	TMS	NMFS and Provider	Report	List status of all trips release request for observer monitored trips.
OM	TMS	NMFS, Provider and telephone center	Report	Observer monitored trips canceled, requested for release, or released due to 2 monitored trips in a row maximum for vessels under 57.5 feet.
OM	TMS	NMFS, Provider and telephone center	Report	List all trips that were canceled or the provider was unable to supply an observer.
OM	TMS	NMFS, Provider and telephone center	Report	List trips with status of closed or pending, start date, observer cruise if present, leave port and observer status.
OM	TMS	NMFS and Provider	Download, report and user interface	Pending trip count by port and date range. UI allows drill down to trips that delivered to port and trip receipt downloads.
OM	TMS	NMFS and Provider	Download, report and user interface	All trips for selected vessel by date range. UI allows download of trip receipts.
OM	TMS	NMFS, Provider, telephone center, Download Owner, Captain	Download	Trip receipt
OM	VALS	NMFS	Report and user interface	List of vessels requesting assessment and allows adding new assessments.
OM	VALS	NMFS	Report and user interface	List documents associated with vessel request, allows upload and download.
OM	VALS	NMFS	User interface	Input NMFS decision on request for exemption.
OM	VALS	NMFS	Report and user interface	List of NMFS visits to vessel and allows entry and edit of visits.
OM	VALS	NMFS	Download	Initial vessel survey confirmation letter with assessment determination.

## 5. ODDS RECOMMENDATIONS

With any in depth review of a customized system that has evolved organically over many years, discovery of problems and ideas for improvements are inevitable. These recommendations are presented below. When possible they are listed under the module impacted. New information recommendations are in section 5.7 Report recommendations. Recommendations that effect the overall ODDS or that are not tied to an existing module are listed in 5.1 Overview recommendations.

### 5.1 Overview Recommendations

#### 5.1.1 Trip Plan Log User Experience (UX)

Change how we navigate trip plan log. The complexity of trip types has expanded, necessitating the change from a one stop shop with numerous radio buttons to something easier. Confusion arises when there are options for trips that don't actually constrain trips of a certain type.

#### 5.1.2 Use the same terms between the ODDS and Annual Deployment Plans.

The application and documentation were once in synch. But when the ADPs began defining deployment stratum by Gear + Tending this became different. The consequence was that inherited trips crossed deployment stratum. An example of confusing terminology is given below.

Item	ADP Term	ODDS Term	Recommended Term
Observer Monitoring vs. Electronic Monitoring	Selection Pool	Selection Pool	Selection Pool
Divisions of OM or EM with different selection rates	Selection pool or Sampling Strata	Selection Pool	Stratum(a)

#### 5.1.3 Standardize language of columns or at least metadata

There is some inconsistency in column naming and supporting metadata. Strata versus sampling pool and release versus waiver are examples of these. For this document, standard definitions were selected to provide consistency throughout the document. The ODDS team should select terminology and adjust table and package metadata as needed.

#### 5.1.4 ODDS Redundancy and Availability

The ODDS application relies on infrastructure provided within the AFSC's Office of Fisheries Information Systems. Although regulations require 24/7 trip logging and use by industry, the underlying infrastructure does not guarantee that level of availability. Possible solutions would be relocating the ODDS application into a high-availability, commercially provided cloud service or increase funding to provide 24/7 support on the existing infrastructure.

#### 5.1.5 Monitor the ODDS application availability

Improve monitoring of the ODDS application at the site specific level. Currently the monitoring system focuses on the underlying infrastructure and not at the application layer. Additional monitoring needs to be include monitoring the ODDS site for availability.

### 5.1.6 *Keep separate applications*

The ODDS has been tasked with more duties over time leading to new database objects and applications. It may appear advantageous to merge these applications since they are all part of the ODDS, however, this is not recommended. Most users only have a need to access one of the applications. Merging applications leads to potential security flaws, increased navigation complexity, and increased maintenance time. Thus it is recommended to maintain separate applications for TMS, EMPR and VALS applications.

### 5.1.7 *Move the ODDS to its own schema.*

Storing and managing the ODDS object in their own schema helps protect the other schemas against security breaches and makes it clear what data exists within the tables.

### 5.1.8 *Maintain data integrity by preventing data manipulations outside of applications*

Data changes to tables or records in the ODDS have occasionally been conducted outside of the applications in order to make corrections. This causes inconsistencies and erroneous data pulls. To ensure data integrity, NMFS staff should not be able to change records outside of the application. When data changes cannot be done with current applications, we recommend that new utilities be built. Currently, although the TMS and VALS contain history tables documenting that data was changed, they contain only null values for the ‘changed by user’ fields. Until the act of changing data outside of applications can be thwarted we recommend that history table code be modified to capture the individual who makes database changes. Known issues and their solutions of fixing in the tables rather than through the applications include:

- Trips accidentally canceled when intended to be closed are re-opened.
- Trips closed accidentally using the wrong landing ID are edited to the correct landing ID.
- A bug that occasionally creates duplicate landing IDs when closing a trip has duplicated records deleted.
- Trips that need dates edited and start date is in the past due to vessel operators not editing in time have dates adjusted in tables. Care needs to be done to ensure date changes maintain the trip log order.

This issue does not occur for the EMPR application and supporting objects. This is because they are essentially insert only with the exception of one column in one table. .

- Add a history table for this field in EMPR.

### 5.1.9 *Programming code should not determine policy*

The ODDS team needs to ensure policy is formed from the top down. Policy should not be determined by referencing the code to see what it allows and restricts. The code should be checked that it supports policy but never the converse. To ensure code misinterpretation does not affect policy, the ODDS programming code should never be reference to answer policy questions.

### 5.1.10 *Upgrade the ODDS applications to the latest available version of APEX and CAM*

To take advantage of new APEX programming and UX tools, the ODDS applications should be rebuilt in the latest version of APEX available to Fisheries Monitoring and Analysis (FMA) developers. The ODDS applications should be moved from CAM version 2 to version 3 to improve the accessibility and utility of roles for the ODDS users

#### *5.1.11 Build the next generation applications for desktop and mobile use*

To facilitate access, TMS should be rebuilt for easy user interface on smart phones. Creating a versatile the ODDS app for different devices will add development time.

#### *5.1.12 Rebuild the OM provider module*

Currently the same company is the OM provider and the call center. This has led to programming shortcomings. The ability for different fishery monitoring providers to be assigned to different vessels and observers needs to be facilitated.

#### *5.1.13 Change trip number structure.*

Users have complained about the lack of information this number provides. Adding a year identifier to the code may aid users to organize their trips in chronological order.

#### *5.1.14 Revise the plant module*

Since this has not been used, it has not been maintained and may not be reliable.

#### *5.1.15 Determine functional needs prior to development start*

NMFS Program management functional requirements should be generated with input from stakeholders (industry users, providers, Council, Agency Staff, etc. with software engineers present) prior to the start of development.

#### *5.1.16 Deprecate*

OBSERVER\_TYPE\_SEQ is inconsistent and can be safely removed.

### **5.2 Manage Coverage Recommendations**

#### *5.2.1 EM coverage information processing*

Create APEX pages to allow entry of VMP information by EM providers into new database tables. This would reduce the entry requirements for NMFS staff and make certain fields searchable.

Create a system for emailing information on denied VMPs instead of just approvals.

EM Research Vessels do not have a way to request to be such. NMFS simply “adds” them. Traditionally, they have been added as a traditional EM vessel, so the actual `sample_plan_seq` does not match the requesting `sample_plan_seq`. Create a way for EM Research Vessels to have requests coded as such.

### **5.3 Manage Captains Recommendations**

#### *5.3.1 Increase data integrity*

In TMS, prevent assigning vessels to a captain with a deactivated account.

Prevent duplicate captain accounts under an owner.

## **5.4 Manage Sample Units Recommendations**

### *5.4.1 Increase data integrity*

The rockfish question appears when editing a non-selected trip and allows saving a trip with rockfish 'Y'. This is an artifact from out dated rockfish trip logging policy. The current rockfish question should be removed. Instead, vessel operators should answer a question prior to trip log that will instruct them to not enter a rockfish trip and contact an OM provider.

### *5.4.2 Display IFQ selection and instructions for changing*

Individual Fishing Quotas (IFQ) selection is missing from the non-selected change trip page. This information cannot be changed but rather trips will need to be re-logged (see section 4.2). IFQ information should appear as display only with a help option. The help option should create a popup notifying the user that IFQ selection cannot be changed and the trip will need to be canceled and re-logged.

### *5.4.3 Vessels close out or cancel the oldest non-selected logged trip*

Vessels have to close out or cancel the oldest non-selected logged trip before closing out more recent logged trips. The request is designed to avoid cases where vessels log 3 trips, fish once, and then close out the second or third trip using their landing report ID. This behavior leaves earlier trips open or pending and causes confusion when later trips are taken. The chronology of landing report IDs and ODDs trips gets mixed up and it becomes ambiguous whether a vessel's fishing activity follows their declared plan, be it gear type, fishing dates, etc.

## **5.5 Manage Selection Recommendations**

### *5.5.1 Correct code to give inheritance priority over 3 selected trips in a row waiver*

NMFS policy is vessels under 57.5 feet will not be selected for more than 3 trips in a row unless one of the trips in an inherited trip. However, the ODDS is currently not enforcing this policy. Code should be adjusted to support the policy.

### *5.5.3 Eliminate need for random assignment for multiple IFQ area trips.*

Currently this type of logged trip goes through random selection and if not selected, it is labelled as requiring 100% compliance trip. This means that some of these trips are monitored through partial coverage funds, which is inefficient. Re-evaluate this policy and consider changing these trips to be in "full-coverage".

## **5.6 Manage Monitoring Recommendations**

### *5.6.1 Change observer name to display only in TMS*

When assigning or editing an observer in TMS, the observer name appears in a text field. Although the text field is not editable, the observer name should be display only.

### *5.6.2 Only let OM providers see observers in their employ*

Although in 2019 there is only one OM provider for OM, there may be more in the future. To protect privacy, we recommend the next version of TMS display only the observers currently in their employ.

## **5.7 Report Recommendations**

### *5.7.1 Periodically review data on the ODDS application use*

In March of 2019, FMA began storing daily statistics on the use of each application page. This is used to gauge the time each page needs to load as presented to the user. The ODDS team should periodically review and share these stats to identify page performance and identify avenues for improvement.

### *5.7.2 Improve internal tracking of EM and VMP information between years*

For EM vessels, there is no record for when a vessel has requested EM in the past, but has not completed a VMP.

There is no easy way to extract this vessel for the year there is no VMP.

### *5.7.3 Incorporate Googledoc processes into the application,*

Currently, ODDS is monitored manually and compared to eLandings reports. This comparison is made to identify 'possible trips not logged'. These instances are currently entered into a Googledoc and shared with the NMFS Office of Law Enforcement. To ensure data integrity and continuity, these processes should be included within the ODDS Schema of the Oracle database.

### *5.7.4 Track modifications and fixes*

All modifications and fixes should be listed in an application, such as JIRA, so a history of the ODDS state will be available for debugging and database questions.

### *5.7.5 Every ODDS report should have a unique and descriptive name to allow easy reference.*

## **5.8 Monitor the ODDS Recommendations**

### *5.8.1 Create data dashboard.*

There is utility in having the selection rates achieved and anticipated presented in graph form along with tracking tools for expenditures vs. budgeted expenditures for real-time quality assurance and tracking.

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## Appendix

### Glossary of terms used in the paper

Term	Description
<b>AFA</b>	American Fisheries Act. Pollock fisheries. AFA vessels are required to carry an observer 100% of the time. AFA vessels do not log trips in the ODDS.
<b>Big T</b>	Trawl and vessels over 57.5 feet. Separated from small t by coverage rate and inheritances. Coverage rate for big T and small t where changed to the same starting fishing year 2015.
<b>BSAI 100%</b>	Trawl vessels in partial coverage who take an observer 100% of trips in the Bering sea/Aleutian islands targeting pacific cod; otherwise randomly carry observer using PC coverage selection. Retired in 2016.
<b>Call center</b>	Also, telephone center. Support team for owners, captains and providers to navigate the ODDS.
<b>Electronic monitoring (EM)</b>	Vessels carrying electronic monitoring equipment. Trips are randomly selected for video review. A subgroup of partial coverage trip-selection stratum.
<b>Embark</b>	Date and time of an observer boarding a vessel.
<b>EMPR</b>	Electronic Monitoring and Provider application
<b>FFP</b>	Federal Fisheries Permit
<b>Fishing trip</b>	<p>There are two different meanings for a trip depending on where the vessel will be delivering their catch.</p> <p>For a catcher vessel delivering to a shoreside processor or stationary floating processor, the fishing trip is the period of time that begins when a catcher vessel departs a port to harvest fish and ends when all harvested fish have been offloaded or transferred.</p> <p>For a catcher vessel delivering to a tender vessel, the fishing trip begins when a catcher vessel departs from a port to harvest fish. This type of trip must include at least one delivery to a tender vessel. If the tender trip did not have an observer onboard, the un-observed fishing trip ends when the vessel returns to a port in which a shoreside processor or stationary floating processor with a valid FPP is located.</p> <p>A future fishing trip selected for observer coverage may not begin until all previously harvested fish has been offloaded. If there was an observer onboard, the observed tender trip does not end until all fish have been offloaded and the vessel is in port in which a shoreside processor or stationary floating processor with a valid FPP is located.</p>
<b>Full coverage</b>	Coverage that require observer monitoring for all fishing in federal waters.
<b>Inheritance</b>	Transfer of monitoring requirement from an unrealized trip to another future trip.

<b>Term</b>	<b>Description</b>
<b>Landing</b>	Vessel delivery of catch to a processor.
<b>Logistics</b>	The managing of relating trips to vessels and observers to trips.
<b>Module</b>	Groups of processes to support an ODDS functional requirement.
<b>NMFS</b>	National Marine Fisheries Service
<b>Observer</b>	Biologist trained to collect fishery data for NMFS.
<b>Observer monitoring (OM)</b>	Monitoring of trips by an observer.
<b>Partial coverage</b>	Trips or vessels that do not require full monitoring and are instead sampled.
<b>Pending trip</b>	Any logged trip not closed or canceled.
<b>Provider</b>	Companies assigned to provide an observer or EM hardware for monitoring.
<b>RAM</b>	Restricted Access Management
<b>Release</b>	Owners of vessel under 57.5 feet request to be released from carrying an observer. Used VALS. Retired 2015.
<b>RFP</b>	Rockfish Program. RFP vessels targeting rockfish under RFP regulations are required to carry an observer 100% of the time and do not log trips in the ODDS.
<b>Sample unit</b>	Individual trips for trip-selection and vessels for vessel selection strata.
<b>Selection pool</b>	Categories assigned to trips based on coverage, vessel size, gear and trip parameters. Selection pools may have different selection rates.
<b>Selection rate</b>	NMFS assigned probability of assigning an observer or electronic monitoring. Rate may vary selection pool.
<b>Strata</b>	Partial coverage is composed of two sample unit strata: Trip and vessel. Trip sample unit stratum is composed of many selection rate strata.
<b>Tender</b>	A vessel transporting catch from the fishing vessel to the plant.
<b>TMS</b>	Trip Management System application
<b>Trawl</b>	A net towed in the water. They can be pelagic or benthic.
<b>Trip logging</b>	A person, such as the captain, entering a new fishing trip into the ODDS.
<b>Trip receipt</b>	The ODDS documentation emailed to vessel on trip parameters and requirements.
<b>Trip-selection</b>	Stratum in which random trips selected for observer or electronic monitoring. Trip is considered the sample unit.
<b>Trip start</b>	Planned date and time a trip set to depart.
<b>VALS</b>	Vessel Assessment Logging System application (deprecated in 2015)
<b>Vessel</b>	Fishing boat.
<b>Vessel operators</b>	Owners and captains.
<b>Waiver</b>	A release from the coverage requirements as specified in the ADP and administered by the ODDS.



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