APPENDIX
to
CHINOOK EDR SUPPORTING STATEMENT

Part A of the Supporting Statement describes three new data forms (collectively referred to as the Chinook Salmon EDR) for use by members of the Bering Sea pollock fishery:

- Chinook salmon PSC Allocation Compensated Transfer Report (CTR),
- Vessel Fuel Survey, and
- Vessel Master Survey.

The data collected in these reports and surveys and data collected in existing revised collections (OMB 0648-0213, 0401, and 0515) would be combined with other data to analyze the Amendment 91 program.

Part B of the Supporting Statement summarizes the Amendment 91 program, describes the data to be collected to analyze the Amendment 91 program, and answers the five questions on the statistical sampling methods, response rates, non-response bias, methods for testing the data forms, and staff involved in the Chinook salmon EDR program.

Part B is divided into the following sections.

INTRODUCTION

NMFS would implement the Chinook Salmon Economic Data Program to evaluate the effectiveness of Chinook salmon PSC management measures for the Bering Sea pollock fishery that were implemented under Amendment 91 to the Fishery Management Plan for Groundfish of the Bering Sea and Aleutian Islands Management Area (FMP). The data collected for this program would be submitted by members of the American Fisheries Act (AFA) inshore, catcher/processor, and mothership sectors, as well as representatives for the six western Alaska Community Development Quota (CDQ) organizations that presently receive allocations of Bering Sea pollock. The management measures, explained in detail in the final rule for Amendment 91 (75 FR 53026, August 30, 2010), are also intended to provide insight into the behavioral response of the participants in the pollock fishery.

Council Purpose And Need Statement -- Chinook Salmon Economic Data Program

The purpose of the Chinook Salmon EDR Program is to provide data for the analysis of the Chinook salmon PSC management in the Bering Sea pollock fishery. The Chinook Salmon PSC Program was implemented in Amendment 91 to the Bering Sea and Aleutian Islands Management Area Fishery Management Plan (FMP). The principal objective of Amendment 91 was to minimize Chinook salmon bycatch (Chinook Salmon PSC) to the extent practicable, while achieving optimum yield.

The Amendment 91 Program was composed of three main parts :

- An overall hard cap of 60,000 Chinook Salmon PSC that may not be exceeded by the Bering Sea pollock fleet.

- Access to the higher Chinook Salmon PSC hard cap and conditional privileges to transfer allocated amounts of that hard cap for participants who agree to a bycatch reduction incentive plan agreement (IPA).

- A performance standard, proportionally applied to each American Fisheries Act (AFA) sector, for keeping Chinook Salmon PSC below 47,591 Chinook salmon in two years out of seven years.

The North Pacific Fisheries Management Council (Council) subsequently recommended the development of a Chinook Salmon EDR Program to analyze the effectiveness of Amendment 91 to reduce Chinook Salmon PSC and to assess any changes in the yield of pollock. The Council's purpose and need statement also recommended that these data be used to address four components of Amendment 91, which are as follows:

- Effects and impacts of the Amendment 91 IPAs, the higher and lower PSC hard caps, and the performance standard;

- Effectiveness of the IPA incentives in times of high and low levels of salmon bycatch;

- Effectiveness of the performance standard to reduce salmon bycatch; and

- How Amendment 91 affects where, when, and how pollock fishing and salmon bycatch occur.

NMFS anticipates that analysis of this data collection will provide sufficient information to provide insights into the primary objective of Amendment 91 -- which is to reduce Chinook Salmon PSC. Questions include: the costs of Chinook Salmon PSC reduction, the number of Chinook Salmon PSC, the actions taken by vessel operators to avoid Chinook Salmon PSC, and transfer information (the number and frequency of Chinook Salmon PSC transfers and why these transfers occur or do not occur)

AFA Sectors, Cooperatives, and CDQ Groups

NMFS manages the Bering Sea pollock fishery under the American Fisheries Act (AFA) (16 U.S.C. 1851). The AFA "rationalized" the Bering Sea pollock fishery in part by allowing for the formation and management of fishery cooperatives in the three pollock sectors (catcher/processor, mothership, and catcher vessel) and the CDQ groups. The AFA authorizes the formation of fishery cooperatives in all sectors of the Bering Sea pollock fishery, grants anti-trust exemptions to cooperatives in the mothership sector, and imposes operational limits on fishery cooperatives in the Bering Sea pollock fishery. The AFA fishery cooperatives consist of groups of vessel owners who agree to apportion the available pollock quota among themselves. In so doing, the cooperatives moderate the unnecessary and wasteful fishing effort that occurred prior to AFA, and has increased financial returns for most members of the fleet.

Under the AFA, NMFS allocates ten percent of the Bering Sea pollock total allowable catch (TAC) to the CDQ Program. After allowance for incidental catch of pollock in other fisheries, NMFS allocates the remaining TAC as follows: 50 percent to vessels harvesting pollock for processing by inshore processors, 40 percent to vessels harvesting pollock for processing by catcher/processors, and 10 percent to vessels harvesting pollock for processing by motherships. NMFS manages the catcher vessels that do not join an inshore cooperative under the "inshore open-access fishery."

AFA cooperatives further subdivide each sector's or inshore cooperative's pollock allocation among participants in the sector or cooperative through private agreements. The cooperatives manage these allocations to ensure that individual vessels and companies do not harvest more than their agreed-upon share. The cooperatives also facilitate transfers of pollock among the cooperative members, enforce contract provisions, and participate in the inter-cooperative agreement to reduce salmon bycatch. A more detailed description of AFA cooperatives and cooperative and inter-cooperative agreements may be found in the proposed rule for Amendment 91 (75 FR 14016; March 23, 2010) and in OMB Control No. 0648-0401.

Each year, catcher vessels eligible to deliver pollock to the seven AFA inshore processors may form up to seven inshore cooperatives that are each associated with a particular inshore processor. The AFA catcher/processor sector consists of AFA-eligible vessels in the Pollock

Conservation Cooperative and High Seas Catcher's Cooperative. The High Seas Catcher's Cooperative consists of owners of the catcher vessels eligible to deliver pollock to the catcher/processors. NMFS issues an annual allocation of pollock to the entire catcher/processor sector, based on each vessel's pollock catch history. The AFA mothership sector is made up of three motherships and the AFA-eligible catcher vessels that deliver pollock to these motherships. These catcher vessels have formed a cooperative called the Mothership Fleet Cooperative, which sub-allocates and manages the mothership sector pollock allocation among the catcher vessels authorized to harvest this pollock.

NMFS does not manage the sub-allocations of pollock among members of the Pollock Conservation Cooperative, High Seas Catcher's Cooperative, or Mothership Fleet Cooperative. The cooperatives control the harvest by their member vessels so that the pollock allocation to the sector is not exceeded. However, NMFS monitors pollock harvest by all members of the catcher/processor sector and mothership sector. NMFS retains the authority to close directed fishing by sector if vessels in that sector continue to fish once the sector's seasonal allocation of pollock has been harvested.

Chinook Salmon Bycatch In The Bering Sea Pollock Fishery

Pollock is harvested by AFA fishing vessels using pelagic (mid-water) trawl gear, which consists of large nets towed through the water by the vessel. At times, Chinook salmon and pollock occur in the same locations in the Bering Sea. Consequently, Chinook salmon are accidently caught in the nets as pollock are harvested.

The Bering Sea pollock fishery catches up to 95 percent of the Chinook salmon taken incidentally as bycatch in the Bering Sea groundfish fisheries. From 1992 through 2001, the average Chinook salmon bycatch in the Bering Sea pollock fishery was 32,482. Bycatch increased substantially from 2002 through 2007, with an average of 74,067 Chinook salmon per year caught during this period. A historic high of approximately 122,000 Chinook salmon were taken in the Bering Sea pollock fishery in 2007. However, Chinook salmon bycatch has declined in recent years to 20,493 in 2008 and 12,410 in 2009. The causes of the decline in Chinook salmon bycatch in 2008 and 2009 are unknown. In years of historically high Chinook salmon bycatch in the Bering Sea pollock fishery, 2005 to 2007, the rate of Chinook salmon bycatch averaged 64 Chinook salmon per 1,000 metric tons of pollock harvested.

Chinook salmon bycatch varies seasonally and by sector. In most years, the majority of Chinook salmon bycatch occurs during the pollock A season of the Bering Sea pollock fishery. The variation in bycatch rates among sectors and seasons (A season or B season) is due, in part, to the different fishing practices and fishing patterns each sector uses to fully harvest their pollock allocations.

Chinook salmon bycatch at sea in the pollock fishery affects various State of Alaska commercial and recreational salmon fisheries and subsistence salmon fisheries. Chinook salmon bycatch affects escapement and recruitment of Chinook salmon in the Yukon River and potentially other Chinook salmon river systems . Escapement is that portion of Chinook salmon that escapes the commercial and recreational fisheries and reaches the freshwater spawning grounds in rivers.

Recruitment is the amount of fish added to the exploitable fish stock each year due to growth and/or migration into the fishing area. These effects are described in detail in the Environmental Regulatory Impact Review for the Amendment 91 final rule (NMFS 2009).

In summary, in some years Chinook salmon mortality from bycatch in the pollock fishery is likely to impact the number of Chinook salmon available to the commercial salmon fisheries in the Yukon River, as well as the subsistence, personal use, and recreational Chinook salmon fisheries of the Yukon River. In some years, the bycatch may also affect the escapement of Chinook salmon in the Yukon River and its tributaries, to the extent that low spawning numbers may impact recruitment of juvenile Chinook in certain tributaries of the Yukon River. Data on the origin of Chinook Salmon stocks intercepted in the pollock fishery are insufficient to know with certainty if this bycatch is a significant contributor to low Chinook Salmon escapement numbers in Yukon River tributaries or to assess the magnitude of possible impacts to Yukon River salmon fisheries. Data issues associated with the uncertainty are described in detail in the Amendment 91 EIS/RIR/FRFA.

As documented in the RIR/IRFA for this action, AFA pollock vessel masters and members of AFA sectors and cooperatives face difficulties detecting the presence of Chinook salmon while fishing for pollock. They need to determine how best to minimize their bycatch and mortality of Chinook salmon while comparing the tradeoffs for their sector and AFA cooperative for Chinook Salmon bycatch avoidance. These difficulties are as follows:

- Individual Chinook salmon are difficult to detect in the water column with current sonar technology, prior to or during a haul and retrieval of pollock trawl gear.

- Chinook salmon migrate throughout many areas frequented by pollock trawlers, and these migration patterns are unpredictable within and between years.

- Once Chinook salmon encounters occur, considerable uncertainty exists about whether those interceptions will impact escapements in the Yukon River and its tributaries, or if the impacts will occur during periods of high or low Chinook salmon escapements; and

- On the pollock fishing grounds, Chinook salmon PSC rates vary by Chinook Salmon population strength and by overlap spatially and temporally of pollock fishing and Chinook salmon.

- Most actions taken to avoid Chinook salmon PSC are likely to be costly to participants in this fishery and difficult for individual vessel operators to assess if voluntary efforts to avoid Chinook Salmon PSC will result in a future benefit.

Bycatch of any species, including discard or other mortality caused by fishing, is a concern of the Council and NMFS. National Standard 9 of the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act), specifically requires the Council to select conservation and management measures that NMFS implements to minimize bycatch and bycatch mortality to the extent practicable. The Magnuson-Stevens Act defines bycatch as fish that are harvested in a commercial fishery but neither, sold nor kept for personal use. Chinook

salmon is categorized as prohibited species under the Magnuson-Stevens Act, the BSAI FMP, and NMFS regulations at 50 CFR part 679. The objective for managing Chinook salmon as PSC in the Bering Sea pollock fishery is to minimize Chinook salmon mortality to the extent practicable, while achieving optimum yield in target fisheries, because Chinook salmon are a valuable and fully utilized species caught in commercial, subsistence, and recreational fisheries.

In some locations, Chinook salmon face conservation concerns. Fishermen must avoid salmon bycatch and are prohibited from selling or utilizing salmon for personal use. Any salmon caught must either be donated to the Prohibited Species Donation Program under § 679.26, or returned to Federal waters as soon as is practicable, with a minimum of injury, after an observer has determined the number of salmon and collected any scientific data or biological samples. Chinook salmon bycatch in the Bering Sea pollock fishery is assumed to have 100 percent mortality.

Amendment 91 To The BSAI FMP

NMFS implemented Amendment 91 to the BSAI FMP to manage Chinook salmon PSC in the Bering Sea pollock fishery. Amendment 91 combines limits on incidentally caught Chinook with an Incentive Plan Agreement (IPA) and performance standard. This combination is designed to minimize bycatch to the extent practicable in all years and prevent bycatch from reaching the limit in most years. The most important objective of Amendment 91 is to reduce Chinook bycatch amounts and rates across all AFA sectors, cooperatives, and vessels in future years in accordance with National Standards 1 and 9. In addition, Amendment 91 provides for the development of one or more secondary industry-operated incentive programs.

Allocations. Under Amendment 91, NMFS may allocate transferable Chinook salmon PSC to the catcher/processor sector, mothership sector, inshore cooperatives (shoreside processor or stationary floating processor), and CDQ groups participating in the Bering Sea pollock fishery. Transferable Chinook salmon PSC allocations may be further sub-allocated to members of a sector or cooperative and may be exchanged between sectors, cooperatives, and their members. In addition, NMFS may allocate non-transferable Chinook salmon PSC allocations under certain circumstances to AFA catcher vessels and catcher/processors if they do not qualify for transferable allocations.

The representative for a qualifying sector or inshore cooperative may receive a transferable or non-transferrable allocation of Chinook salmon PSC from NMFS. The representative is allowed to administer any transfer of Chinook salmon PSC between any other group that received transferable Chinook salmon PSC. The transfers could occur between any qualifying sector, inshore cooperative, or CDQ group.

The requirements for receiving transferable or non-transferable Chinook salmon PSC, as well as the amount of Chinook salmon PSC vary between each sector, inshore cooperative, or CDQ group. For example, the catcher/processor sector may receive transferable Chinook salmon PSC based on each vessel's proportional amount of the 47,591 or 60,000 Chinook salmon PSC caps established in Amendment 91 , if they form a single "sector-level entity." If all members of the catcher/processor sector also form an IPA that is approved by NMFS and meets other

qualifications in Amendment 91, the catcher/processor sector may receive an allocation of Chinook salmon PSC that is based on each vessel's proportional amount of 60,000 Chinook salmon. The proposed rule for Amendment 91 provides a detailed explanation of these requirements.

The inshore cooperatives and the CDQ groups already are recognized by NMFS as entities eligible to receive allocations on behalf of others. The inshore cooperatives are permitted annually by NMFS under § 679.4(l)(6) and must submit copies of their cooperative contracts to NMFS to be issued a permit. The representative for receiving Chinook salmon PSC for the inshore cooperatives would be the same person as named on the cooperative's annual application for pollock allocations. An inshore cooperative or a CDQ group must notify NMFS in writing if its representative for purposes of Chinook salmon PSC allocations is a different person. The CDQ groups are authorized under section 305(i)(1) of the Magnuson-Stevens Act to receive fishery allocations from NMFS. No additional authorizations are needed for the inshore cooperatives or CDQ groups to be eligible to receive transferable allocations of Chinook salmon PSC. The representative for a CDQ group would be its chief executive officer

PSC allocations are based on either a 60,000 Chinook salmon PSC limit if some or all of the pollock industry participates in an industry-developed IPA, or a "lower cap" of 47,591 Chinook salmon PSC limit if industry does not form any IPAs. This lower Chinook salmon PSC limit is also referred to as the annual threshold amount.

Performance Standard. Amendment 91 requires that each sector meet a "performance standard" by staying below the lower cap/annual threshold amount in all but two of any seven consecutive years. The performance standard for each sector is based on the historical catches of each vessel in each sector and applied as a proportion of the 47,591 Chinook salmon PSC limit. The Chinook bycatch cap and performance standard in Amendment 91 is intended to encourage pollock vessels to avoid Chinook salmon bycatch, even in years when Chinook salmon bycatch is low.

Low salmon bycatch may occur in periods when escapement of Chinook salmon into the Yukon River are also low, and thus it may actually be of greater value to conservation of Chinook salmon to further reduce bycatch in years when salmon bycatch is relatively low. At the same time, larger bycatch levels may be due to either greater run strength or greater co-location of salmon and pollock, so having an upper limit to bycatch is also a valuable means to promote Chinook salmon conservation.

Census of Salmon. To assess Chinook bycatch rates and to use as a basis for monitoring and enforcing the Chinook salmon PSC allocations, Amendment 91 included in eLandings a new PSC accounting census of all Chinook salmon for catcher/processors and for catcher vessels delivering to shoreside processors, stationary floating processors, and motherships. For catcher vessels, delivering shoreside and to motherships Chinook Salmon bycatch will be accounted for by a census at the point of delivery. For a mothership or catcher/processor the census of Chinook Salmon bycatch would occur by each haul.

Electronic Logbook (ELB). Also, Chinook salmon PSC information would be submitted by trawl gear catcher/processors to NMFS through a newly created ELB (see OMB 0648-0213) required by Amendment 91 that works with eLandings (see OMB 0648-0515). NMFS requires that the Chinook salmon PSC counts be submitted using an ELB so that the data are readily available to NMFS in a timely manner.

After implementing Amendment 91 and its performance standard, allocation of transferable Chinook salmon PSC allocations, and the formation of incentives developed in each IPA, the Council anticipates the likelihood of the following responses from participants in the pollock fishery:

- Substantial changes in sector or cooperative plans and agreements for distribution and use of Chinook salmon PSC.

- Creation of a market for trading Chinook salmon PSC between sectors and cooperatives and among their members and the joint trading of sub-allocations of Chinook salmon PSC and pollock by vessels.

- Changes in the location and timing of fishing effort for pollock and the bycatch of Chinook salmon PSC.

- Increase in cost of harvesting pollock; and

- Reduction of the annual bycatch of Chinook salmon.

CURRENT INFORMATION TO EVALUATE AMENDMENT 91

Incentive Plan Agreement (IPA)

A key component of Amendment 91 is the Incentive Plan Agreement (IPA) (see OMB Control Number 0648-0401). An IPA authorized by Amendment 91 is a private contract among vessel owners or CDQ groups that establishes incentives for participants to minimize bycatch at all levels of Chinook salmon abundance. The parties to an IPA must be owners of AFA-eligible catcher vessels, catcher/processors, motherships, or the representatives of CDQ groups. The representative, referred to as the IPA representative, of an AFA cooperative or a sector-level entity formed under Amendment 91 would sign an IPA on behalf of all vessel owners that are members of that cooperative or sector-level entity. NMFS requires participants to demonstrate to the Council through performance and annual reports that the vessel owners who are IPA signatories are accomplishing the Council's intent that Chinook salmon PSC be minimized in each year. Each IPA plan will describe the structure of the incentives or penalties for reducing Chinook salmon PSC at the level of a sector, cooperative, or individual vessel.

Participation in an IPA is voluntary; however, any vessel or CDQ group that chooses not to participate in an IPA would be subject to a restrictive opt-out cap that provides a maximum backstop cap of 28,496 Chinook salmon PSC. Each year, NMFS would calculate the backstop

cap based on the number of vessels that opt-out of an IPA. The backstop cap would not be allocated to opt-out participants but would be managed by NMFS as a cap. NMFS would not evaluate any vessel or CDQ group that fishes under the backstop cap.

IPA Annual Report

Each IPA representative is required to submit a written IPA Annual Report to the Council for each year following the year in which the IPA is first effective. Each IPA Annual Report is intended to provide a qualitative evaluation and some quantitative information on the effectiveness of the IPAs.

Each IPA Annual Report must describe the following:

- The incentive measures in effect in the previous year.
- How the incentive measures affected individual vessels.
- Whether incentive measures were effective in achieving salmon savings beyond levels that would have been achieved in absence of the incentive measures.
- Any amendments to the terms of the IPA that were approved by NMFS since the last annual report, and the reasons that any amendments to the IPA plan were made; and
- The reasons that any amendments to the IPA plan were made.

The RIR for this action anticipates that the IPA plan and IPA Annual Reports implemented in Amendment 91 may provide the following industry observations and data on the effectiveness of the Amendment 91 management measures including:

- Summaries of temporal and spatial shifts in effort undertaken by the fleets;
- Comparisons of Chinook salmon bycatch rates achieved by vessels participating in an IPA versus any vessels not participating in an IPA;
- An overview of the use of new gear technologies;
- Assessment of the effect of Rolling Hot Spot (RHS) closures; or
- Description of research undertaken to reduce Chinook salmon PSC.

The IPA plan and IPA Annual Report, along with other existing data (e.g., catch accounting, observer), are important information sources for determining whether the Amendment 91 management measures are meeting the Council's purpose and need statement to understand the effects of Amendment 91 IPAs, including the performance standard. The information provided in the IPA Annual Report is essential to address one of the objectives of the Council's purpose

and need statement - for the Chinook Salmon EDR to evaluate the conclusions drawn by industry in that report.

Limitations to IPA Plan and IPA Annual Report Data for Evaluating Amendment 91

NMFS does not require the data and discussion contained in each IPA plan or IPA annual report in a specific format. For example, the format of information in an IPA plan or report may vary by between years or by each group submitting a report. As a result, it is likely that data may not be sufficiently uniform and consistent to quantify the differences between two or more IPAs. Though some of the sector and cooperative data provided in the report may be quantitative, many questions are subjective and respondents may have an incentive to portray the components of Amendment 91 as effective. Individual identifiers (such as a NMFS vessel ID number) are not required for each transfer recorded in an IPA Annual Report, making it potentially difficult to merge transfer data with other NMFS information that includes a mutually exclusive identifier.

The market value of PSC allocations reflects its expected value to the pollock fishery. However, neither IPA Annual Reports nor AFA Cooperative Reports presently require that each transaction between a person buying and selling Chinook salmon PSC be recorded with a corresponding price or at the level of an individual owner of a vessel.

Also, Amendment 91 did not implement any requirements for reporting information in the IPA Annual Report to track how costs may vary by vessel, cooperative, or sector, under the new program. It would be helpful to have data on how the cost of AFA vessels operating in the Bering Sea pollock fishery would change under the various Chinook Salmon bycatch incentive plans. For example, information on the amount of fuel and the cost of fuel used to perform various Chinook salmon bycatch avoidance actions could assist in evaluating the effectiveness of Amendment 91.

In summary, The IPA Annual Report is potentially a helpful element to meet the Councils purpose and need statement, but does not provide information to independently verify its accuracy; other data must be relied upon to assess the fourth objective of the Council's purpose and need statement to "evaluate the conclusions drawn by industry in the IPA annual report."

AFA Cooperative Report

While AFA cooperative reports do not represent formal NMFS data on groundfish harvests and PSC, they are one of the only sources of disaggregated catch data that are available to the public. In addition, the AFA cooperative reports are the only sources that can be used by analysts to report comprehensive data on individual AFA vessel harvests without violating NMFS and State of Alaska Department of Fish and Game rules data confidentiality rules.

At the beginning of each year, all AFA cooperatives must submit an AFA Cooperative Report to the Council by April 1 of the following year, detailing the activities of the cooperative for the previous year (50 CFR 679.61(f)). Each AFA Cooperative Report must include

- The cooperative's allocated catch of pollock and sideboard species;

- Actions taken by the cooperative for vessels that exceed their allowed catch and bycatch in pollock and all sideboard fisheries;

- Any sub-allocations of pollock and sideboard species made by the cooperative to individual vessels;

- Total weight of pollock landed outside the State of Alaska on a vessel-by-vessel basis; and

- The number of salmon taken by species and season, including Chinook salmon.

AFA Cooperative Reports may contain some information for evaluating Amendment 91, specifically, the Council purpose and need statement identifies the need to evaluate how Amendment 91 affects "where, when and how pollock fishing and salmon bycatch occur." The AFA Cooperative Reports could provide helpful data for that element of the assessment. For example, AFA Cooperative Reports could provide some explanation for why fishing effort at the beginning of a pollock season or at some other point in a season may have been lower, higher, or similar to a previous season (and if Amendment 91 caused any of the changes).

Limitations of AFA Cooperative Reports for Evaluating Amendment 91

Because AFA Cooperative Reports are not required to itemize reasons or provide systematic and independently verifiable data for why pollock fishing may progress at a slower or more rapid rate in a season, it is likely that this data will be anecdotal and of limited use. In the event that IPAs are not formed in all sectors, the annual AFA Cooperative Reports could document the distribution of Chinook salmon PSC allocations among vessels in the cooperative. Currently, some transfers of pollock allocations are reported in AFA Cooperative Reports, but these pollock transfers are not reported in a uniform manner between each cooperative, making it difficult to use these data for some types of comparative analysis.

The limitations for pollock allocations and transfers in the AFA Cooperative Reports also apply to Chinook salmon allocations and transfers of PSC. Tracking Chinook salmon PSC transfers by owner or vessel is not required in an AFA Cooperative Reports. The AFA Cooperative Reports do not require submission of pollock or Chinook salmon PSC price data. Prices of pollock and Chinook salmon PSC allocations could be helpful in evaluating Amendment 91.

The market value of PSC allocations reflects its expected value to the pollock fishery. However, the AFA Cooperative Reports presently require that each transaction between a person buying and selling Chinook salmon PSC be recorded with a corresponding price or at the level of an individual owner of a vessel. Also, Amendment 91 did not implement any requirements for reporting information in the AFA Cooperative Reports to track how costs may vary by vessel, cooperative, or sector, under the new program.

AFA Cooperative Reports are not likely to provide sufficiently detailed data to make reliable comparisons of individual vessel Chinook salmon PSC rates relative to distance traveled from

port. Considering each of these previously detailed limitations, AFA Cooperative Reports are not likely to provide sufficiently detailed data to make reliable comparisons of Chinook salmon PSC rates for individual vessels or masters of vessels by time and location, or distance from port.

Thus, the AFA Cooperative Report would have specific limits as a stand-alone source of information for addressing all four components of the Council's purpose and need statement. Specifically the "evaluation of conclusion drawn by the industry in the IPA Annual Report" and the effectiveness of the IPA incentives in times of high and low levels of salmon bycatch" could not be evaluated with this data.

Catch Accounting and Observer Data

The two primary sources of information used to account for catches in the Bering Sea pollock fishery are onboard observer information and industry-reported data on catch and processed product amounts. Both sources are electronically recorded and submitted to NMFS. Catch accounting and observer data linked with other data would be used to assist analysts in addressing the four components of the Council's purpose and need statement. It would help analysts understand the effects and impacts of the IPAs, evaluate the performance standard, evaluate when and how Chinook Salmon bycatch and pollock catches occur, and could assist in evaluating the conclusions drawn by industry in IPA annual reports.

In 2005, NMFS implemented an interagency electronic reporting system for the catch accounting system to reduce reporting redundancy with other agencies and consolidate fishery landings data. All vessels in the Bering Sea pollock fishery are required to report all groundfish landings, discard, and production through a web-based interface known as eLandings (OMB 0648-0515). There is also a stand-alone application available for the vessels fishing and processing catch at sea (the at-sea fleet). The at-sea fleet submits eLandings files via email.

The eLandings software provides managers with real-time access to individual vessel information, including individual pollock vessel catch and bycatch and unused amounts of allocated pollock and Chinook salmon PSC. Each industry report submitted via eLandings undergoes error checking by NMFS. Data are then stored in a database and are made available to management agencies. There are two basic eLandings report types used for catch estimation: production reports and landing reports.

Observer data are also used in the catch accounting system, and are collected using a stratified sample design where strata are defined by vessel size and gear fished. Within each stratum, a multi-stage sampling design is used to sample the species composition of the catch, length distribution of select species, and other catch components.

Observer data collected on vessels in the Bering Sea pollock fishery are transmitted electronically to a centralized database. The Alaska Fisheries Science Center (AFSC) quality control staff review the data, interview each observer returning from the fishery, and conduct several quality control processes for each dataset incorporated into the database. This database contains all data collected by observers at processing plants and onboard vessels, including marine mammal interaction data, groundfish and non-target catch, and salmon PSC (including

Chinook salmon PSC). The data tables are organized in the database to reflect where and how the data are collected. NMFS merges observer data with industry reports nightly; the merged data are available to fishery managers the following day.

For catcher/processors and catcher vessels delivering pollock to motherships, observer data combined with a census of each vessel's eLandings landing reports may be used to make comparisons of Chinook salmon PSC rates of vessels fishing in different areas during the same period of time or similar areas at different periods of time. These comparisons allow for an analysis of how PSC catch rates vary by vessel type and location. For catcher vessels that make several tows over a large area and that deliver to shoreside processors or SFPs at the end of a fishing trip, the actual location of Chinook salmon bycatch will be more difficult to estimate. For these deliveries, a full accounting of Chinook salmon PSC occurs at the plant, and in most cases covers multiple tows made within a trip.

Observer data combined with landing reports will allow analysts to assess trends in rates and variation of Chinook salmon PSC by vessel, pollock vessel operation type, week or season, and across cooperatives, sectors, or the entire AFA fleet. The combined observer and landing data will also allow analysts to make accurate and reliable comparisons of percentages of the TAC harvested at times of relatively high or low Chinook salmon encounter rates. Combining information on the variation in Chinook salmon PSC amounts and rates with other information on the structure, timing, and application of the incentives that apply to different groups at different times could provide insight into the effectiveness of Chinook salmon PSC measures.

Limitations to the Use of Catch Accounting and Observer Data for Evaluating Amendment 91

Catch accounting and observer data allow an assessment of trends in Chinook Salmon PSC by individual vessel, cooperative, and sector. However, observing changes in bycatch levels and rates has limitations for assessing whether the Amendment 91 incentives or the IPAs in particular actually caused a given change in bycatch rates. One difficulty is the variability in the abundance of Chinook salmon that appears in different years in different locations. For example, no currently available data exists to determine if high or low Chinook salmon encounter rates are independent from the spatial and temporal effort from the pollock fleet. In other words, the only information we have on the abundance of Chinook salmon on the pollock grounds is through observations of bycatch during directed fishing on pollock. Because a change in bycatch rates may be the result of either a decrease in salmon on the fishing grounds or a change in fishing behavior, the lack of fishery-independent Chinook salmon abundance estimates is a constraint to drawing conclusions about the cause and effect of industry and regulatory incentives for avoiding Chinook salmon bycatch.

For catcher vessels delivering shoreside or to an SFP, NMFS accounts for all catch of groundfish and Chinook salmon PSC at the time of landing. Because catcher vessels may trawl in several locations before delivering to an inshore processor, it is not possible to verify the amount of Chinook salmon catch by individual haul. Attempts to apportion Chinook salmon PSC to a specific haul using vessel monitoring system (VMS) or other data are subject to error. These data constraints may complicate efforts to attribute a change in Chinook salmon PSC to specific types of incentives. For example, the effectiveness of an IPA penalty for a catcher vessel that

exceeded a predetermined Chinook salmon PSC rate in a specific statistical area may be difficult to assess if catcher vessels are deploying trawl gear on consecutive hauls on either side of the boundary set out by the IPA penalty.

In contrast to the constraints for apportioning Chinook salmon PSC at the haul level for catcher vessels, catcher/processors will have continuous census accounting of Chinook Salmon PSC at sea. Each haul must be observed, and all Chinook salmon must be removed and accounted for at the flow scale. The observer records the haul start and end times and locations of each haul; the path may be tracked with VMS. The combination of location data with haul-by-haul catch accounting allows for Chinook salmon PSC to be accurately observed. Even for catcher/processors, however, catch accounting and observer data combined will not explain which bycatch incentives changed a specific amount of bycatch by time and location for each sector or cooperative or how the back stop cap of 47,591 changed a specific amount of bycatch by time and location. For example, a master of a catcher/processor (or catcher vessel) relocates to new fishing grounds to avoid Chinook salmon bycatch. Catch accounting data, even if it records a reduced catch of Chinook salmon PSC, would not, by itself, provide a reason for the transit. Various factors such as weather, time, and area encounters with Chinook Salmon bycatch, or market prices for pollock could easily have influenced the movements and fishing effort by a vessel, as well as that vessel's rate of Chinook salmon PSC.

NEW INFORMATION TO EVALUATE AMENDMENT 91

In December 2009, the Council recommended three new data collection requirements and revisions of two existing collections. Representatives of AFA catcher/processor and mothership sectors, inshore cooperatives, the inshore open access fishery, and CDQ groups would submit the Chinook Salmon EDR. The Council intended these requirements to provide additional data and to improve the quality of data to assess the effectiveness of Amendment 91.

To collect the data required by the Council, NMFS would require submission of each of the following new forms, which are collectively called the Chinook Salmon EDR. These forms would be in a fillable electronic format available on the NMFS Alaska Region website. The Reports/Surveys are:

- Chinook Salmon PSC Allocation Compensated Transfer Report (CTR).
- Vessel Fuel Survey; and
- Vessel Master Survey.

In addition to the Chinook Salmon EDR, NMFS would collect new information concerning vessel movements on the fishing grounds and more general data on pollock allocations and transfers through revisions to the IPA Annual Report. These new data are described below in the section titled: "New Information: Revisions to Existing Collections for Chinook Salmon EDR."

NMFS will use the new data to conduct descriptive analysis and quantitative or tabular comparisons of the annual, seasonal, and where possible, trip-level and haul-level changes in the pollock fleet under Amendment 91 by sector, cooperative, and vessel. Descriptions of these analyses are provided below. NMFS may also conduct statistical analysis of the effect of the

Amendment 91 IPAs and Chinook salmon PSC limits on trawl location choices, variation in the amount of Chinook salmon bycatch in the AFA trawl fishery, and the changes in the value of Chinook salmon PSC transactions if data are sufficiently accurate and complete.

In describing the data required for this program, the Council's motion recognized that the proposed data collection program would be limited in scope, and the quantity and quality of data submitted may only partially address the purpose and need statement for this action:

"The Council recognized the challenges associated with evaluating the effectiveness of the Chinook salmon bycatch incentive program with data collected on trip-based information and stated preferences for transiting and fishing practices aimed at avoiding the bycatch of Chinook salmon. Statistical analyses generated from this type of data is novel and involves some trial and error in designing collection methods, specifying variables to collect, and verifying accuracy of data. The draft forms in this analysis reflect that NMFS and the Council analysts have worked with industry to focus this collection to address the key impacts of Amendment 91. This collection is intended to provide additional information to status quo data, but may not provide an unequivocal answer to all of the Council's policy questions."

Chinook Salmon PSC Allocation Compensated Transfer Report (CTR).

A detailed explanation of the variables and submission requirements for the CTR is included in Part A of this supporting statement. The purpose of the CTR is to account for Chinook salmon PSC transfers and the amount of money exchanged for transfers between AFA vessel owners and other entities transferring Chinook salmon PSC. NMFS would examine data reported for each transaction and tabulate the data to compare the amount of Chinook salmon PSC transferred in each transaction, number of transactions by vessel type (sector and AFA cooperative), and time intervals of the transfers in a season or year. Also, this data will allow for tabulation of the average and variation in price paid for transactions by vessel operation type, sector, and AFA cooperative. It will be possible to enumerate the number of potential traders of Chinook salmon PSC by date and season and those that did or did not participate in Chinook salmon PSC transfers. The timing and patterns of the transfer data in comparison with the specific IPAs in effect by date, sector, and AFA cooperative will help to assess the market for Chinook salmon PSC in each year, and how the IPAs may have impacted that market. If there is a significant volume of unbiased price data collected, it may be possible to address two elements of the Council's purpose and need statement, specifically the effects of certain incentives included in the IPAs and the performance standard.

The CTR data may help to verify and explain some of the industry-reported information in the contracts and agreements for allocating Chinook salmon PSC within and between AFA sectors and cooperatives included in IPA Annual Reports and AFA Cooperative Reports. This will assist in addressing the Council's objective to understand the overall effects and impacts of the Amendment 91, by permitting transactions reported in other industry-reported sources to be compared with and reconciled with the transactions reported in the CTR.

To help explain which incentives impose the largest costs on the pollock fleet, NMFS may combine and compare data on initial allocation of Chinook salmon PSC and intra-sector or intra-cooperative apportionments of PSC with

- Data on the incentives from IPA plans;
- Data on pollock transfers from IPA Annual Reports;
- Distribution and amounts of pollock and Chinook salmon PSC exchanged between vessels; and
- Estimated travel costs to avoid Chinook salmon PSC.

The information on the costs generated by some incentives should also help analysts describe the impacts of the Chinook salmon PSC cap, IPAs, and performance standard.

Persistent transfers of pollock to vessels with higher Chinook salmon PSC rates may potentially suggest that vessels with poor PSC performance have an incentive to lower their participation in the fishery. Knowing the number of transfers by each individual vessel and amount of Chinook salmon PSC transferred in years of low Chinook salmon encounters will also potentially provide information concerning whether the incentives change fishing behavior at aggregate bycatch levels below the hard cap. Additionally, observing transfers to vessels that are approaching their individual share of the Chinook salmon PSC cap (if those share amounts are available to NMFS) will provide information on if and how PSC transferability helps the fishery to obtain a higher yield of pollock.

If a sufficient number of high-quality data observations is reported and the quality of the price data is high, these data should assist in determining the distribution of Chinook salmon PSC allocations and transfers in-season and over multiple years. This data would assist in addressing the Council's objective to understand the effects and impacts of the Amendment 91 IPAs, the caps, and the performance standard. When combined with additional fields on entity affiliations and the bundling of transactions that may be accounted for in IPA Annual Reports, the CTR could assist in determining if prices exchanged represent independent and arms-length transactions or if the prices are merely accounting measures within affiliated entities.

Limited information in the CTR on the prices of bundled Chinook salmon PSC transactions may restrict the application of this data. For example, it is possible that masters of vessels or the representatives submitting the CTR will not use unpaired or independent monetary transactions to exchange Chinook salmon PSC. If the CTR respondents find it to be more efficient to bundle all or nearly all Chinook salmon transactions with pollock or other items of value, very few transactions or prices of Chinook salmon PSC transactions would be submitted. Also, if each independent Chinook salmon PSC transfer consists of both a monetary transfer component and a non-monetary transfer component, these observations may not be useful. The possibility exists that these reporting constraints would result in a sufficiently low number of reported transactions to significantly reduce the value of these data.

The Council motion acknowledges that the data collected from the Chinook salmon EDR may not produce definitive conclusions about the effectiveness of Amendment 91. NMFS may undertake more rigorous, quantitative analyses to examine the effectiveness of Amendment 91 if the collected CTR data include a sufficient number of compensated transfers. The utility of this data could be reduced for addressing the four elements of the Council's purpose and need statement if poor-quality transaction data are collected in this report.

Vessel Fuel Survey

A detailed explanation of the variables and submission requirements for the Vessel Fuel Survey is included in Part A of this supporting statement. After each calendar year, each owner of an AFA-permitted vessel catching CDQ or non-CDQ pollock in the Bering Sea must submit to NMFS the Vessel Fuel Survey to report annual fuel use and cost. The owner must include identifying information on the certification page of the report, including a NMFS person ID. The Vessel Fuel Survey, submitted by June 1 of the following year, would include average annual hourly fuel burned while fishing and transiting, and annual fuel purchases in cost per gallon. Each of these values would be combined with other NMFS data (such as VMS and observer data reports) to estimate the costs of moving vessels to avoid salmon bycatch (including the fuel use during trawling, transit between trawls, and lost fishing time).

The RIR/IRFA for this action notes that the Council specifically requested data to allow for estimates of fuel used by a vessel when moving to areas with higher or lower areas of bycatch. NMFS has no other data on fuel consumption or average fuel price on a vessel-by-vessel basis for this fishery; therefore, this fuel data collection is likely to increase the quantity and quality of information available for understanding the effects of Chinook salmon PSC measures, including IPAs. Given the variety of circumstances in the fishery, these data should prove useful for understanding variability of fuel usage, which can aid in assessing fuel costs more generally in the fishery.

Data from the Vessel Fuel Survey would be used with other available data, including observer reports, VMS data, catch accounting data, IPA Reports, and AFA Cooperative Reports. Fuel use and fuel cost data may be combined with other data on distance traveled to avoid Chinook salmon bycatch. The costs borne by parties for moving to lower bycatch areas can be estimated with these data.

Analyses with fuel data may range from basis comparisons of estimated transit costs between the types of AFA operations to quantitative or statistical estimates of the fuel costs for Chinook salmon PSC avoidance from specific IPAs and Amendment 91.

It is possible that variation in vessel fuel costs among vessels could affect the response of different vessels to incentives or disincentives for avoiding Chinook salmon. For example, if it is less expensive for vessels with lower travel costs to travel farther to reach clean fishing grounds, they may be more likely to engage in this action, all other things being equal. NMFS may examine vessel response to Chinook salmon encounter rates to determine whether these operational differences are affected by variations in fuel- based travel costs between vessels,

which in turn may have implications for the effectiveness of certain types of IPAs. These findings could be important for addressing the Council's purpose and need statement.

Vessel Master Survey

A detailed explanation of the variables and submission requirements for the Vessel Master Survey is included in Part A of this Supporting Statement. The Vessel Master Survey is a qualitative assessment survey that would pose a series of questions to elicit vessel master input on factors that impacted the vessel's performance during the year. The Vessel Master Survey would be conducted at the end of each fishing year. The owner of each AFA-permitted vessel would be responsible for submitting the Vessel Master Survey to NMFS on behalf of any person who is the master of an AFA-permitted vessel. The owner of the AFA-permitted vessel will be required to verify that each person listed on the Certification page for this form is a master of the AFA-permitted vessel.

The intent of the Vessel Master Survey is to identify the purpose for decision-making during the pollock season (fishing location choices and salmon bycatch reduction measures). The survey is designed to obtain master responses to on-the-fishing-grounds conditions to gain information concerning the effect of IPAs and Chinook salmon measures on decision-making. The nine questions in the Vessel Master Survey collect master assessments of the past year's fishing performance regarding the causes for bycatch avoidance, factors impacting Chinook salmon PSC rates, and the influence of the IPAs and AFA cooperatives on fishing and Chinook salmon bycatch avoidance behaviors. NMFS will use this information to guide interpretation of data on the change in fishing revenue obtained from existing NMFS data and data in the Vessel Fuel Survey on fuel cost and fuel consumption rates. These data will assist in evaluating the conclusions drawn by industry in the IPA annual reports that are required to describe the impact of IPAs on the behavior of each sector, cooperative or CDQ group. This evaluation is an objective identified in the Council's purpose and need statement for this action.

To initially process the data on the qualitative questions in the Vessel Master Survey, PSMFC would correct obvious spelling and grammar. The responses would be organized into similar answers and then would be aggregated. The range of responses for each question would be assessed. If possible, some descriptive statistics would be developed on each answer to a given question. The answers would be compared by sector, cooperative, vessel type, or other strata. The common and conflicting viewpoints will be highlighted and tabulated if possible. Where responses converge by a particular stratum of vessels or members of an AFA cooperative, these would then be compared with other quantitative information to see if the qualitative responses provide similar or different understanding of the quantitative data elsewhere in the Chinook Salmon EDR.

Though the Vessel Master Survey information would involve subjective responses, it would be useful to couple this survey with quantitative estimates of the effectiveness of the IPAs and other measures. Where possible, NMFS will examine the effect of the behavioral influences reported in this survey in greater detail and corroborate the responses with other data sources, such as observer data, VMS data, and catch accounting data. This utilization of self-reported

experiences and observable fishing behavior will ensure that analysts consider fishermen's experiences in formulating assessments of the Amendment 91 program, and that this data assists in addressing the Council's purpose and need statement.

REVISIONS TO EXISTING COLLECTIONS FOR CHINOOK SALMON EDR

NMFS would revise existing requirements for the following reports and collections. These information sources provide some industry data for evaluating the effectiveness of the hard cap, performance standard, IPA, and incentives in Amendment 91 for the AFA catcher/processor and mothership sectors, inshore cooperatives, inshore open-access fishery, and CDQ groups.

- IPA Annual Report (OMB 0648-0401)

- AFA Cooperative Report (OMB 0648-0401)

- Catcher Vessel Trawl Gear Groundfish Daily Fishing Logbook (DFL) (OMB 0648-0213) [see Movement Information]

- Catcher/processor Trawl Gear Electronic Logbook (ELB) (OMB 0648-0213) [see Movement Information]

- eLandings Landing Report (OMB 0648-0515)

<u>Revisions to the IPA Annual Report</u>

Revisions to the IPA Annual Report required by the Chinook salmon EDR Program are described in detail in the OMB collection 0648-0401. The IPA Annual Report would be revised to request the sub-allocation and transfers of Chinook salmon PSC and pollock to each participating vessel, IPA, AFA cooperative, or entity authorized to receive Chinook salmon allocations at the start of each fishing season, and the number of Chinook salmon and amount of pollock (mt) caught at the end of each fishing season.

Each in-season transfer of Chinook salmon and pollock would be requested by amount and date, regardless of whether the transfers were "compensated" transfers. Intermediate transfers among and between each AFA cooperative, IPA, or AFA sector would also be required in the IPA reports.

This revision would provide a single location for Chinook salmon and pollock data on initial allocation, transfer, catch, and residual allocations by season and year for each catcher vessel, catcher/processor, or mothership participating in an IPA.

These revisions to the annual IPA Annual Report would provide additional quantitative and qualitative information on Chinook salmon and pollock transfers for analysts to examine the effectiveness of Amendment 91. For example, the initial allocation and transfers of pollock and Chinook salmon may be tabulated by sector, AFA cooperative, or members of an IPA. This will assist in comparing how transfers may differ between various entities.

If the data are provided in a uniform and comparable manner, IPA data analysis could include descriptive statistics on the pollock and Chinook salmon PSC, allocations, and transfers between participants in each of the above groups. This information could be displayed with annual data and if useful, data may be pooled over multiple years. This would assist the analysts in comparing how transfers differ across years.

If data on transfers of Chinook salmon in IPA Annual Reports could be matched with information on individual compensated transfers of Chinook salmon from the CTR, some analysis of the number of transfers, average amounts transferred, and frequency of transactions may be displayed by vessel category, AFA cooperative, and AFA sector. To improve our ability to match information from two different sources, NMFS would revise the IPA Annual Report and the AFA Cooperative Report to provide the NMFS ID number of each entity involved in a transfer of pollock or Chinook salmon. The distribution of these transfers and information on the IPA measures may provide insight into which IPA measures are most effective.

By combining data from the IPA Report with other available data, NMFS would address the Council's purpose and need statement to improve our understanding of:

- The effects and impacts of the Amendment 91 IPAs, the caps, and the performance standard;

- The effectiveness of the IPA incentives and the effectiveness of the performance standard to reduce salmon bycatch; and

- How Amendment 91 affects where, when, and how pollock fishing and salmon bycatch occur.

NMFS does not require that data and discussion provided in each IPA Annual Report or AFA cooperative report to be submitted in a specific format. Therefore, because more than one IPA Annual Report would be received annually, performance information may not be uniformly reported. This could create consistency issues when comparing information between IPAs and could limit any statistical analysis with IPA data to simple descriptive statistics. Thus, there are analytical limits to the potential usefulness of this data for statistical analysis.

Revisions to the AFA Cooperative Report

The request for pollock and salmon PSC information would be removed from the AFA Cooperative Report. The annual AFA cooperative report does not need to include any information about pollock or salmon PSC allocation or catch on a vessel-by-vessel basis if that information is provided in the IPA annual report.

Revisions to Collect Change-in-Location Data

A detailed description of the revisions for including data on the purpose of movements on the fishing grounds is described for the catcher vessel trawl daily fishing logbook (DFL) and the catcher/processor trawl electronic logbook (ELB) (see OMB 0648-0213) and eLandings (see OMB 0648-0515). NMFS would require additional data to describe the reasons that a master of an AFA vessel changed locations in the pollock fishing grounds and specifically those location changes that may be related to Amendment 91. To accomplish this, NMFS would require each AFA master to indicate that a specific haul was followed by a subsequent move to relocate the vessel to a different fishing area primarily to avoid Chinook salmon bycatch whenever:

- The master of an AFA catcher vessel using trawl gear chooses to move the vessel to reduce Chinook salmon PSC, the master would indicate each change in location for any haul by checking a vessel movement box in the DFL.

- The master of an AFA catcher/processor using trawl gear chooses to move the vessel to reduce Chinook salmon PSC, the master would indicate each change in location for any haul by checking a vessel movement box in the ELB.

- The master of an AFA mothership receives notification that an AFA catcher vessel delivering pollock moved the vessel to reduce Chinook salmon PSC, the master would indicate each change in location for any haul by checking a vessel movement box in the eLandings mothership landing report.

NMFS would use the movement information to compare salmon PSC avoidance between individual vessels, and by various vessel characteristics. Chinook salmon PSC rates could be merged with this information by vessel to assess how rates change prior to and following a change in fishing location. Movement data combined with other management data (such as the date a season is opened and closed) could be helpful in assessing a vessel's willingness to leave fishing grounds to avoid Chinook salmon PSC. That would help address the Council's purpose and need objective to "evaluate how Amendment 91 affects where, when, and how pollock fishing and salmon bycatch occur." These industry-reported data may be helpful in evaluating assumptions in more sophisticated statistical models that combine catch by location, VMS, and other data to explain the reasons for a specific set of moves and fishing choices. That information could, in turn, assist with the Council's purpose and need objective to "study and evaluate conclusions drawn by industry in the IPA annual reports."

Movement data helps us understand how the incentives from the IPA may drive the behavior of individuals and groups. The master's decision to relocate vessels from areas with high Chinook

salmon PSC to areas with lower PSC rates may reflect differences in the incentives to the master created by an IPA. Alternatively, upon examination, these data and other information provided by cooperatives may reflect the amount of central coordination of fishing by area and time a cooperative applies to each member of the cooperative. By combining movement data with IPA report data on the effectiveness of incentive measures, analysts may compare the relationship between movement events and response to IPA measures.

While these data are subjective, the data are intended to provide NMFS with a better understanding of each vessel master's perception of factors that impact fishing decisions, and are likely to inform the Council objective for analyzing the effectiveness of IPAs and Amendment 91.