

## **APPENDIX F**

### **Data and Reporting Requirements**

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## ACRONYMS AND ABBREVIATIONS

ABC	Acceptable Biological Catch
ADF&G	Alaska Department of Fish & Game
AFA	American Fisheries Act
APA	At-Sea Processors Association
BSAI	Bering Sea/Aleutian Islands
BSR	Buying Station Report
CDQ	Community Development Quota
COAR	Commercial Operator's Annual Report
Council	North Pacific Fishery Management Council
DCPL	Daily Cumulative Production Logbook
DFL	Daily Fishing Logbook
DPR	Daily Production Report
EEZ	Exclusive Economic Zone
ft	feet/foot
FFP	Federal Fisheries Permit
FPP	Federal Processor Permit
FMPs	Fishery Management Plans
FR	Federal Register
GOA	Gulf of Alaska
GPS	Global Positioning System
IFQ	Individual Fishing Quota
LLP	License Limitation Program
LOA	Length Overall
MSA	Magnuson-Stevens Fishery Conservation and Management Act
mt	Metric Tons
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NPFMC	North Pacific Fisheries Management Council
NPGOP	North Pacific Groundfish Observer Program
PRR	Product Recovery Rates
PSD	Prohibited Species Designation
PSMFC	Pacific States Marine Fisheries Commission
PSQ	Prohibited Species Quota
PTR	Product Transfer Report
QS	Sablefish Quota Share
SPELR	Shoreside Processor Electronic Logbook Report
TACs	Total Allowable Catches
U.S.	United States
VAR	U.S. Vessel Activity Report
VMS	Vessel Monitoring System
WPR	Weekly Production Reports

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# Section 1 Data and Reporting Requirements

The Magnuson-Stevens Fishery Conservation and Management Act (MSA) states that the collection of reliable data is essential to the effective conservation, management, and scientific understanding of the fishery resources of the United States (U.S.). This qualitative impact assessment examines the effects of alternative approaches to data collection in the Alaska groundfish fisheries. Managers of these fisheries recognize that the best available biological and socioeconomic information is necessary in order to promote successful management of groundfish resources, as well as fishery resources such as crab, halibut, and salmon that are incidentally caught in the groundfish fisheries. Data collected are used for making in-season and inter-season management decisions that affect the groundfish resources and the fishing industry that utilizes them.

This qualitative impact assessment focuses on the information collected from industry reporting requirements and vessel monitoring system (VMS) requirements for the groundfish fisheries. The North Pacific Groundfish Observer Program (NPGOP) is mentioned but not discussed at length, as this program is the subject of a separate qualitative impact analysis. Nor does this qualitative assessment discuss the information collected from fishery-independent research programs conducted by National Marine Fishery Service (NMFS) or National Oceanic and Atmospheric Administration [NOAA] Fisheries) and other agencies.

The first part of this analysis provides a historical overview of requirements for industry data reporting and VMS used to monitor the groundfish fisheries. The second part of the analysis describes the alternative approaches to data collection considered by the North Pacific Fisheries Management Council (NPFMC) and their impacts.

## 1.1 Trends in Data Collection Measures in Alaska Groundfish Fisheries

This section briefly describes the development of requirements for recordkeeping and reporting, at-sea weighing, and VMS in the Alaska groundfish fisheries. A more complete description of current requirements is included in the discussion of Alternative 1.

### Industry Recordkeeping and Reporting Requirements

The fishing industry's input into the fishery data collection system is mandated through NOAA Fisheries recordkeeping and reporting requirements. When the MSA was implemented in 1976, the groundfish fisheries were dominated by foreign catcher processors and motherships. To monitor fishing activity, NOAA Fisheries required vessel operators to record activities in logbooks. U.S. observers placed on the vessels reported catch estimates and logbook entries weekly. This system of reporting continued into the mid-1980s, when much of the groundfish catch was harvested by domestic catcher vessels and delivered to foreign processing vessels in joint venture operations. Deliveries by domestic catcher vessels to inshore processors were reported by means of the Alaska Department of Fish and Game's (ADF&G) fish tickets.<sup>1</sup> Catcher

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<sup>1</sup> Fish tickets record landed weight and value by species. A fish ticket is considered a legal document and requires the signature of the permit holder (captain or operator) and the receiver (buyer).

processors were also required to submit fish ticket reports of groundfish catches to the ADF&G, but these vessels could stay at sea for long periods, and thus did not report as frequently as catcher vessels.

With the rapid expansion of the domestic catcher processor fleet, it became apparent that a mechanism for timely reporting of catches by this fleet was needed to reduce the chance of exceeding the total allowable catch (TAC). In 1985, NOAA Fisheries required operators of catcher processors and motherships that retained fish at sea for 14 days or more to provide a weekly report of the amounts of groundfish caught or received by species and by fishing area. In addition, the operators of these vessels were required to check-in and check-out of regulatory areas. By 1987, NOAA Fisheries required weekly reports of groundfish caught in the U.S. Exclusive Economic Zone (EEZ) and processed at sea from all domestic catcher processors and motherships regardless of how long their catch was retained before landing. In 1988, the reporting requirements of these vessels were augmented with at-sea transfer information. In 1989, the NPFMC closed a regulatory loophole that allowed vessels outside the EEZ to receive and process fish caught in the EEZ without reporting them to NOAA Fisheries. All vessels of the U.S. receiving EEZ-caught fish were required to hold a federal permit and thus had to comply with the weekly reporting requirements. Beginning in 2002, all motherships and any catcher processors taking deliveries from catcher vessels were required to submit ADF&G fish tickets.

### **At-Sea Weighing Requirements**

Estimates of catch by catcher processors are based on observer data and the weekly reports submitted by vessel captains. Until recently, observers estimated catch using certified bins to make volumetric estimates of catch weight or product recovery rates were used to convert product weights back to whole fish. The captains' estimates of catch relied on an ad hoc "eyeball" method that may vary significantly across captains.

As scale technology advanced (including the refinement of motion-compensated weighing equipment), NOAA Fisheries began to require the use of at-sea scales to estimate catch weight in certain fisheries.<sup>2</sup> For example, the new catch accounting requirements established for the western Alaska Community Development Quota (CDQ) program in 1998 included the use of NOAA Fisheries-approved scales to weigh catch at sea. These requirements arose out of a need for an accurate accounting of harvests of halibut, groundfish TAC species, and prohibited species in CDQ fisheries. Catcher processors (trawl and longline) and motherships have two primary requirements. These vessel types are required to have a NOAA Fisheries-certified observer sampling station and a motion-compensated platform scale. In addition, trawl and mothership vessels are required to have certified motion-compensated flow scales.

The American Fisheries Act (AFA) also mandated the use of onboard scales to more accurately weigh fish in the BSAI at-sea pollock fisheries. This technology was necessary to verify that the sideboard caps and directed pollock harvests are not being exceeded by the AFA fleet.

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<sup>2</sup> Shoreside and inshore floating processors have generally always used scales for determining delivery volumes.



## VMS Requirements

In recent years, NOAA Fisheries has employed a VMS to enhance the effectiveness of monitoring and enforcement activities in the Alaska groundfish fisheries. VMS automatically determines a vessel's location several times per hour using Global Positioning System (GPS) satellites. A VMS transmitter installed on a vessel sends the position information to NOAA Fisheries via a mobile communication service provider. Each vessel is assigned a unique number, and tracking software at NOAA Fisheries provides vessel name, position, speed, and heading. The VMS transmitters are designed to be tamper-resistant and automatic. The vessel owner is unaware of exactly when the unit is transmitting and is unable to alter the signal or the time of transmission.

The first VMS requirement in the Alaska groundfish fisheries was implemented in 2000, when NOAA Fisheries required that all trawl vessels engaged in directed fishing for Atka mackerel in the Aleutian Islands subarea be equipped with a VMS transmitter. This action was necessary to enhance monitoring of fishery activities within the critical habitat of the Steller sea lion. In 2002, an emergency interim rule (67 Federal Register [FR] 956) issued by NOAA Fisheries to implement additional Steller sea lion protection measures expanded the use of VMS. The rule required all vessels using pot, hook-and-line or trawl gear that are permitted to directly fish for Pacific cod, Atka mackerel or pollock to have an operable VMS by June 10, 2002. The VMS must be operable when any of these three fisheries (Atka mackerel, pollock or Pacific cod) for which the vessel is endorsed are open, regardless of the target species. NOAA Fisheries have implemented computer programming systems that integrate VMS data with observer haul data and with the spatial (Geographic Information System) data defining critical habitat. This system automatically identifies observer-reported catch that is from critical habitat, for use in catch accounting for critical habitat limits.

## Section 2 Analysis of Alternatives

The following four policy alternatives are under consideration by the NPFMC:

**Alternative 1: Continue with the Current Risk-Averse Management Policy** – Under this alternative, the NPFMC would continue to manage the groundfish fisheries based upon the present conservative and risk-averse policy. This policy assumes that fishing may result in some adverse impacts to the environment and that, if or when these impacts become known, mitigation measures will be developed and appropriate fishery management plans (FMPs) amendments will be implemented.

**Alternative 2: Adopt a More Aggressive Management Policy** – A less precautionary management policy (more aggressive harvest strategy) would be implemented based upon the concept that the present strategy is overly conservative and that higher harvests could be taken without threat of overfishing the target groundfish stocks. This strategy assumes that fishing at the recommended levels would have no adverse impact on the environment except in specific cases that are generally known.

**Alternative 3: Adopt a More Precautionary Harvest Strategy** – This policy would seek to accelerate the existing precautionary management measures through community or rights-based management, ecosystem-based management principles and, where appropriate and practicable, increase habitat protection and impose additional bycatch constraints. Under this approach, additional conservation management measures would be taken as necessary to respond to social, economic or conservation needs. Additional measures would be taken if scientific evidence indicated that the fishery was negatively impacting the “environment,” not just a population of a given species.

**Alternative 4: Adopt a Highly Precautionary Harvest Strategy** – This policy would require that managers or users of the resource demonstrate that the intended use would not have a detrimental effect on the environment before significant fishing could be allowed. The policy and its associated FMP framework would be to impose very restrictive conservation and management measures at minimum that would only be modified or relaxed when additional reliable scientific information became available. It would involve a strict interpretation of the precautionary principle. Management discussions would involve, and be responsive to, the public but decreased emphasis would be placed on industry and community concerns, and more emphasis would be placed on ecosystem concerns and principles, including the identification and incorporation of non-consumptive use values. The overall premise is that fishing does produce adverse impacts on the environment, but, due to a lack of information and uncertainty, we know little about these impacts. A goal of this alternative, as expressed through its FMP framework, is to include the use of explicit allocative or cooperative programs to reduce excess capacity and allocate fish to particular gear types and fisheries.

Each of the policy alternatives outlined above, with the exception of Alternative 1, contains two example FMPs that serve as bookends to a range of management measures that illustrate how the framework of each policy could be implemented. These bookends provide a level of detail that allows the effects of the alternatives on the environment to be compared. They also provide a basis for the NPFMC to commit to the goals and principles of a particular policy alternative, while allowing it, under the MSA, to adaptively manage the fishery through FMP amendments using the best scientific information available.

## **Section 3      Alternative 1: Continue with the Current Risk-Averse Management Policy**

### **3.1      Management Approach with Specific Reference to Industry Reporting Requirements**

Under this policy alternative, the NPFMC and NOAA Fisheries will continue the existing reporting requirements and observer program to provide catch estimates and biological information; continue on-going efforts to improve community and regional economic impact assessments; and increase the quality of monitoring data through improved technological means.

### **3.2      Summary of Current Industry Reporting Requirements**

#### **3.2.1      Overview of Current Recordkeeping and Reporting System**

##### **Data Collection**

Current federal and State of Alaska recordkeeping and reporting requirements in the Alaska groundfish fisheries are summarized in Table 1. A summary of the information collected by each of the logbooks, reports, and forms follows the table.

##### Daily Fishing Logbook (DFL)

A DFL is required of all catcher vessels equal to greater than 60 feet (ft) LOA. Data reported include the gear type, Federal reporting area code where gear retrieval was completed, number of observers aboard, crew size, target species, time, position, and estimated total catch weight of groundfish for each haul or set, discard/disposition information, and delivery information. For trawl gear, the estimated total round catch weight of the groundfish must be reported in pounds or to the nearest metric ton (mt). For longline and pot gear, the estimated catch weight of Individual Fishing Quota (IFQ) and CDQ halibut must be reported to the nearest pound; the estimated weight of IFQ sablefish must be reported to the nearest pound and the number of sablefish must be reported; and the estimated total round catch weight of all other species must be reported to the nearest pound or to at least the nearest 0.001 mt. For each groundfish species or species group and Pacific herring, operators must record the species code, product code, and the total estimated discard/disposition amounts in whole fish weight in pounds or to at least the nearest 0.001 mt. For Pacific salmon, steelhead trout, Pacific halibut, king crab, and Tanner crab, operators must record the species code, and discard/disposition amounts in number of animals. If fish are discarded (bled) from an unsorted codend, operators must estimate and record the amount of each species discarded.

**Table 1. Required logbooks, reports, forms, and electronic logbook and reports from participants in the Alaska groundfish fisheries.**

Requirement name	Catcher vessel	Catcher processor	Mothership	Shoreside processor <sup>c</sup>	Buying station
Daily fishing logbook (DFL)	YES	NO	NO	NO	NO
Daily cumulative production logbook (DCPL) <sup>a</sup>	NO	YES	YES	YES	NO
Weekly production report (WPR)	NO	YES	YES	YES	NO
<b>Optional:</b> Electronic WPR	NO	YES	YES	YES	NO
Shoreside processor electronic logbook report (SPELR) instead of DCPL and WPR when receiving American Fisheries Act (AFA) pollock or pollock harvested in a directed pollock fishery	NO	NO	NO	YES	NO
<b>Optional:</b> SPELR instead of DCPL and WPR	NO	NO	NO	YES	NO
Check-in/check-out report	NO	YES	YES	YES	NO
<b>Optional:</b> Electronic check-in/check-out report	NO	YES	YES	YES	NO
Buying station report (BSR)	NO	NO	NO	NO	YES
United States (U.S.) vessel activity report (VAR)	YES	YES	YES	NO	NO
Daily production report (DPR) <sup>b</sup>	NO	YES	YES	YES	NO
Product transfer report (PTR)	NO	YES	YES	YES	NO
Commercial operator's annual report (COAR)	NO	YES	YES	YES	YES
Alaska Department of Fish and Game (ADF&G) groundfish fish ticket	NO	NO	YES	YES	YES
Required use of AFA and community development quota (CDQ) at-sea scales, including daily scale test, printed scale output, request for inspection of scales, observer station, and scale approval sticker	NO	YES	YES	NO	NO
Vessel monitoring system (VMS) when fishing for Atka mackerel, pollock, or Pacific cod	YES	YES	NO	NO	NO

<sup>a</sup> Two formats of the DFL and catcher processor DCPL exist: one for trawl gear and one for longline and pot gear.

<sup>b</sup> DPR is submitted only when specifically requested by the NOAA Fisheries Regional Administrator.

<sup>c</sup> Includes stationary floating processors

Source: Adapted from NOAA Fisheries Alaska Regional Office.

## Daily Cumulative Production Logbook (DCPL)

The DCPL required of all catcher processors includes data on the gear type, Federal reporting area code where gear retrieval was completed, number of observers aboard, crew size, target species, time, position, and estimated total catch weight of groundfish for each haul or set, discard/disposition information, and product information (total weight of product – by species codes, product codes, and product designation – that was produced each day). For trawl gear, the estimated round catch weight of groundfish must be reported to the nearest pound or mt. The round catch weight of pollock and the round catch weight of Pacific cod must be reported separately to the nearest pound or metric ton. For longline and pot gear, the round catch weight of pollock must be reported to the nearest pound or mt; the round catch weight of Pacific cod must be reported to the nearest pound or mt; the estimated catch weight of IFQ halibut and CDQ halibut must be reported to the nearest pound; the estimated weight of IFQ sablefish must be reported to the nearest pound and the number of sablefish must be reported; and the estimated total round catch weight of all other species must be reported to the nearest pound or to at least the nearest 0.001 mt. For each groundfish species or species group and Pacific herring, operators must record the species code, product code, and the total estimated discard/disposition amounts in whole fish weight in pounds or to at least the nearest 0.001 mt. For Pacific salmon, steelhead trout, Pacific halibut, king crab, and Tanner crab, operators must record the species code and discard/disposition amounts in number of animals. If fish are discarded (bled) from an unsorted codend, operators must estimate and record the amount of each species discarded.

The DCPL required of all motherships includes data on the gear type, Federal reporting area code where groundfish were harvested, number of observers aboard, crew size, estimated total catch weight of groundfish for each delivery, discard/disposition information, and product information (total weight of product—by species codes, product codes, and product designation—that was produced each day). The estimated round catch weight of groundfish must be reported to the nearest pound or mt. The round catch weight of pollock and the round catch weight of Pacific cod must be reported separately to the nearest pound or mt. For each groundfish species or species group and Pacific herring, operators must record the species code, product code, and the total estimated discard/disposition amounts in whole fish weight in pounds or to at least the nearest 0.001 mt. For Pacific salmon, steelhead trout, Pacific halibut, king crab, and Tanner crab, operators must record the species code and discard/disposition amounts in number of animals.

The DCPL required of all shoreside processors or stationary floating processors includes data on the gear type, Federal reporting area code where groundfish were harvested, estimated total catch weight of groundfish for each delivery, landings information, discard/disposition information, and product information (total weight of product – by species codes, product codes, and product designation – that was produced each day). The estimated round catch weight of groundfish must be reported to the nearest pound or mt. The daily total scale weight of landings must be reported, by species and product codes, in pounds or to the nearest 0.001 mt. For each groundfish species or species group and Pacific herring (a prohibited species), managers must record the species code, product code, and the total estimated discard/disposition amounts in whole fish weight in pounds or to at least the nearest 0.001 mt. For Pacific salmon, steelhead trout, Pacific halibut, king crab, and Tanner crab, operators must record the species code and discard/disposition amounts in number of animals.

### Weekly Production Report (WPR)

The operator of a catcher processor or mothership or the manager of a shoreside processor must submit a WPR for any week the mothership, catcher processor, or shoreside processor is checked in (see Check-In/Check-Out Report). The WPR summarizes the DCPL on a weekly basis.

### Shoreside Processor Electronic Logbook Report (SPELR)

A SPELR is required instead of a DCPL and WPR for shoreside processors or stationary floating processors receiving groundfish from AFA catcher vessels or receiving pollock harvested in a directed pollock fishery.

### Check-in/Check-out Report

These reports are required of all catcher processors, motherships, and shoreside processors. Operators of catcher processors and motherships and managers of shoreside processors must notify NOAA Fisheries before and after certain activities. For example, catcher processors, motherships, and shoreside processors must check-in to and check-out of each Federal reporting area where groundfish were harvested.

### Buying Station Report (BSR)

The operator or manager of a buying station must submit a BSR when receiving groundfish from a catcher vessel and delivering or shipping that groundfish to a mothership, shoreside processor, or stationary floating processor. Information reported includes the gear type, Federal reporting area code where groundfish were harvested, estimated total groundfish delivery weight (optionally, in addition to the total estimated delivery weight or actual scale weight, species codes and weights), the total discard/disposition amount by species and product codes for each associated processor, reporting area, gear type, and management program. For each buying station delivery to an associated processor, the total estimated discard and disposition amounts in whole fish weight for each groundfish species or species group and Pacific herring must be reported in pounds or to at least the nearest 0.001 mt. For each buying station delivery to an associated processor, the total estimated numbers of discard/disposition of Pacific salmon, steelhead trout, Pacific halibut, king crab, and Tanner crab must be reported in number of animals.

### U.S. Vessel Activity Report (VAR)

The operator of a catcher vessel, catcher processor, or of a mothership must submit a VAR before the vessel crosses the seaward boundary of the EEZ off Alaska or crosses the U.S.-Canadian international boundary between Alaska and British Columbia. If a vessel is carrying only IFQ halibut and/or IFQ sablefish onboard, and the operator has received a Vessel Clearance or has submitted a Vessel Departure Report, the operator is not required to submit a VAR.

### Daily Production Report (DPR)

If the NOAA Fisheries Regional Administrator determines that DPRs are necessary to avoid exceeding a groundfish TAC or prohibited species bycatch allowance, NOAA Fisheries may require submission of DPRs

from motherships, catcher processors, and shoreside processors for reporting one or more specified species, in addition to a WPR.

#### Groundfish Product Transfer Report (PTR)

The operator of a catcher processor or mothership or the manager of a shoreside processor or stationary floating processor must record each transfer of groundfish product (including unprocessed fish) or donated prohibited species on a PTR.

#### Commercial Operator's Annual Report (COAR)

The manager of a shoreside processor and owner of a mothership or catcher processor must annually complete and submit a COAR to ADF&G. Data reported should include the total weight (to the nearest pound) purchased from fishermen, total amount paid to fishermen, including all post-season adjustments and/or bonuses and any credit received by fishermen for gas expenses, ice, delivery premiums, and other miscellaneous expenses, price paid per pound for the recorded weight, total weight (in pounds) of the finished product, total wholesale value of the finished product, and price per pound of the finished product.

#### ADF&G Groundfish Fish Ticket

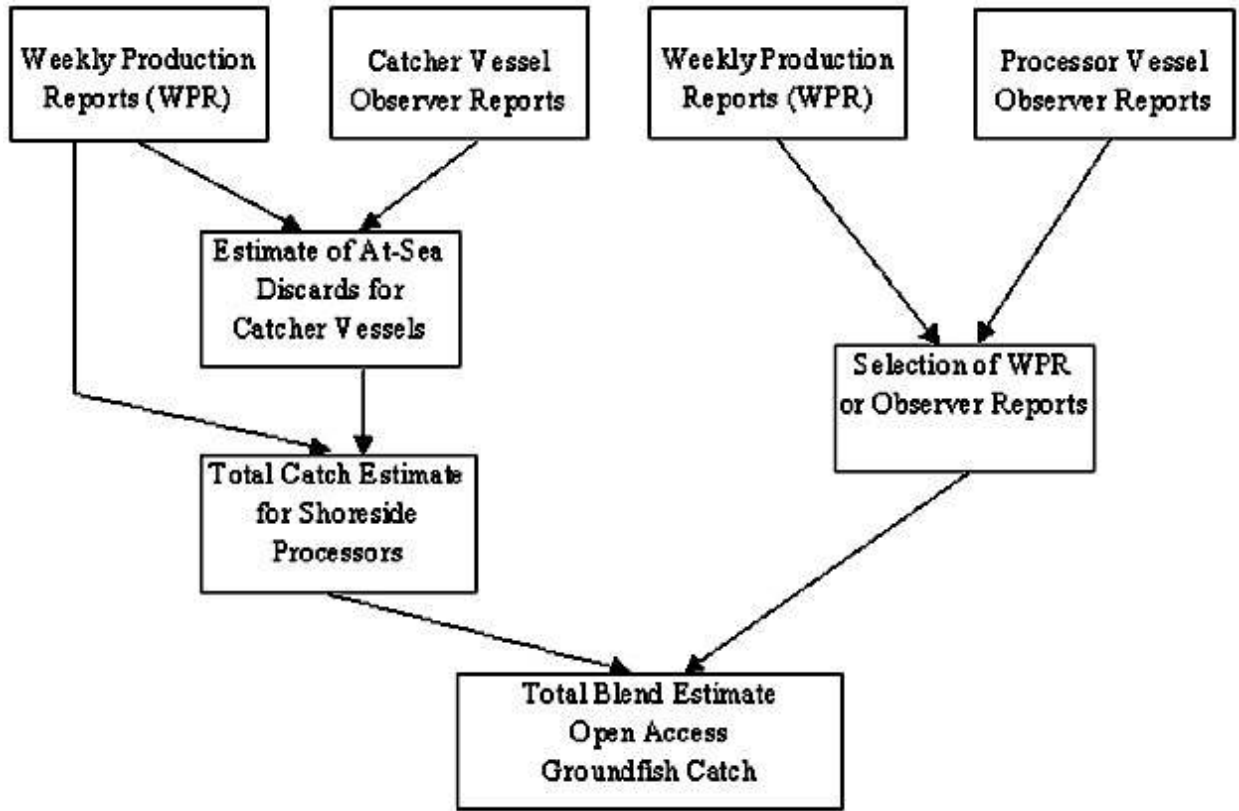
Required of all shoreside processors, stationary floating processors, motherships, and all harvest in connection with a CDQ program fishery. Data reported include date fishing began, date landed, gear type, ADF&G groundfish statistical area where groundfish were harvested, landed weight (in pounds) and condition of the catch by species, weight (in pounds) of discards at sea and at the dock, number and type of prohibited species discarded at sea, price paid/received per pound for the recorded weight, and monetary amount paid/received.

### **Data Transmission and Management**

NOAA Fisheries currently operates an electronic reporting system for catch information from the groundfish fisheries. The electronic reporting system replaces a paper-based system of recordkeeping and reporting that was implemented in the late 1980's. This system required vessels and processors to maintain paper logbooks detailing fishing activity and catch. Processors were required to summarize the logbook on a weekly basis and fax the WPR to NOAA Fisheries for entry into the database. The electronic reporting system allows catcher processors, motherships, and shoreside processors to submit both WPRs and check-in/check-out reports via e-mail or direct from a modem from their computer on board. The benefits of the electronic reporting system include improved data quality, automated processing of data, improved process for correcting or updating information, and more timely data available to fishery managers.

### **Data Processing**

The blend data processing system developed by NOAA Fisheries combines data from industry and observer reports to estimate groundfish harvest in North Pacific groundfish fisheries. The system blends the best available data from different sectors of the fishery to generate what, NOAA Fisheries believes, is the most accurate estimate of total groundfish harvest possible with the existing data. This data processing system is illustrated in Figure 1.



**Figure 1. The blend data processing system developed for the Alaska groundfish fisheries.**  
**Source: NOAA Fisheries Alaska Regional Office.**

WPRs for shoreside processors report landed weight of catch. These WPRs are the best source of data for retained groundfish landings. All fish delivered to shoreside processors are weighed on scales, and these weights are used to account for retained catch. Observers on catcher vessels report groundfish species composition, total catch, and estimates of retention and discard on a weekly basis. Observer information on groundfish discards is used in conjunction with total retained groundfish catch from shoreside WPRs to estimate total at-sea discards from all catcher vessels, including observed and unobserved vessels. All observer data for a month, gear, and target fishery are combined to compute discard rates for each groundfish species observed to be discarded. The discard rates are expressed as a ratio of the weight of the discarded species to the total retained groundfish weight. The discard rates are multiplied by the retained landings for each shoreside processor to estimate total at-sea discards of groundfish associated with the groundfish landed to the processor.

Total catch for shoreside processors is obtained by adding the landed catch weights reported on shoreside processor WPRs to the estimates of at-sea discards. As noted earlier, WPRs for catcher processors and motherships report weights of processed products and round weights of discards. Product weights are converted to equivalent round weights using product recovery rates (PRRs). Observers on processor vessels report groundfish species composition, total catch, and estimates of retention and discards on a weekly basis for each separate reporting area and gear type. Total catch may be estimated using cod-end or bin volumetrics, scales, or conversion from production data. Species composition of the total catch is determined through taking a catch sample, and apportioning the catch by species based on that sample.



Total groundfish catch for all species combined is computed each week for each processor vessel from the WPR and from the observer report. If either report is missing, the report present is selected. If both reports are present, the blend compares the two numbers: if the WPR and observer total catch numbers are within 5 percent, the WPR is selected as the source; if the WPR is more than 30 percent higher than the observer total catch (for pollock target fisheries)<sup>3</sup> or more than 20 percent higher (all other targets), the WPR is selected as the source. In all other cases, the observer report is selected as the source. The blend program then returns to the source data (WPR or observer) and copies the detailed records, showing gear type, area and species, to the blend. Records from WPRs are identified in the blend by a source field value of "W", observer records are identified by a source field value of "O."

The blend process combines data from industry production reports and observer reports to make the best, comprehensive accounting of groundfish catch. These data are used to manage quotas for groundfish in the Gulf of Alaska (GOA), Bering Sea and Aleutian Islands (BSAI). The blend data are also used as the basis for computing estimates of prohibited species bycatch. Prohibited species include Pacific halibut, salmon, herring, and crabs. Blend data are used for numerous regional and national reports, fishery stock assessments, and analysis of FMPs.

## **Permits and Licenses**

An array of federal and State of Alaska permits and licenses is used to regulate and monitor the level of participation in the Alaska groundfish fisheries. These permitting and licensing requirements are an integral component of the data collection system as they provide the unique vessel and plant identifiers recorded in the required logbooks, reports, and forms described above. In addition, the permit and license applications record extensive information about the characteristics of the individual vessels and processing plants participating in the groundfish fisheries. The major permits and licenses are described below.

### AFA Permits

All vessels and processors wishing to participate in the non-CDQ BSAI pollock fishery are required to have valid AFA permits on board the vessel or at the processing plant. AFA permits may limit the take of non-pollock groundfish, crab, and prohibited species as governed by AFA "sideboard" provisions.

### Federal Fisheries Permit (FFP)

This permit is required for U.S. vessels used to fish for groundfish in the GOA or BSAI. This permit is also required for vessels used to fish for any non-groundfish species and that are required to retain any bycatch of groundfish under 50 Code of Federal Regulations (CFR) Part 679. Non-groundfish species includes but is not limited to halibut, crab, salmon, scallops, and herring. "Fishing" is a broad term and includes, for example: harvesting, processing, tendering, support, etc.

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<sup>3</sup> Pollock is processed into several products with highly variable recovery rates, including surimi and deep-skin fillets. The wider selection range is needed to ensure that WPR records are not inappropriately selected in cases where a processor achieves high recovery rates.

### Federal Processor Permit (FPP)

This permit is required for stationary floating processors (processing vessels that operate solely within Alaska state waters). The permit is also required for shoreside processors that receive and/or process groundfish harvested from federal waters (or from any federally-permitted vessels).

### IFQ Permits

An IFQ permit authorizes participation in fixed-gear harvests of Pacific halibut off Alaska, and most sablefish fisheries off Alaska. The permits are not specific to vessels. Permits are issued to persons holding fishable Pacific halibut and sablefish quota share (QS); or to those who are recipients of IFQ-only transfers from QS holders.

### North Pacific License Limitation Program (LLP)

Any person who wishes to deploy a harvesting vessel in the groundfish fisheries in the GOA or the BSAI must hold a valid groundfish license issued under the LLP. Beginning January 1, 2003, persons who wish to participate in the directed fishery for Pacific cod in the BS and/or AI with pot or hook-and-line gear must have the appropriate gear-specific Pacific cod endorsement on the LLP license that names their vessel. Pacific cod endorsements are not required for trawl gear or jig gear; for these gears, licenses only need a trawl, or non-trawl gear endorsement, respectively. Groundfish licenses are issued with gear endorsements (trawl or non-trawl) and area endorsements. In the BSAI there are two LLP endorsement areas: BSAI. In the GOA, there are three LLP endorsement areas: West Gulf, Central Gulf, and Southeast Gulf. There are four exceptions to the LLP license requirement, including: 1) vessels that do not exceed 26 ft in length overall (LOA) in the GOA; 2) vessels that do not exceed 32 ft LOA in the BSAI; 3) vessels that do not exceed 60 ft LOA, and that are using jig gear (but no more than 5 jig machines, one line per machine, and 15 hooks per line) in the BSAI; and, 4) certain vessels constructed for, and used exclusively in, CDQ fisheries.

### Prohibited Species Donation (PSD) Program Permits

These permits authorize tax-exempt organizations to distribute salmon and/or halibut (delivered by catcher vessels using trawl gear to shoreside processors) to hunger relief agencies, food bank networks, or food bank distributors.

### U.S. Coast Guard Vessel Documentation

Vessels of five net tons or more used in fishing activities on navigable waters of the U.S. or in the EEZ must be documented.

### Alaska Seafood Processor and Exporter License and Permit

Any person (including corporations, partnerships, limited liability companies, and joint ventures) who receives, prepares, processes or transports a seafood or fishery product including roe recovery to sell for human consumption or a person who custom processes a seafood or fishery product must have a Seafood

Processor and Exporter License and Permit. A person who transports an unprocessed seafood or fishery product outside of Alaska must also have a Seafood Processor and Exporter License and Permit.

### Commercial Fishing Vessel License

Any vessel, boat, ship, or other craft which is used for commercial fishing or for aiding or assisting in the performance of any activity related to commercial fishing (including refrigeration, transportation and processing) must have a valid commercial fishing vessel license issued by the Alaska Commercial Fisheries Entry Commission.

### **Economic Data Collection**

Economic and social analyses of federal management actions and policies are required by the MSA, the National Environmental Policy Act, the Endangered Species Act, the Regulatory Flexibility Act, Executive Order 12866, Executive Order 12898 and other federal laws. However, existing data reporting mechanisms compile very limited economic data. Currently, revenue and price data are the only economic data being systematically collected under mandatory programs. Two examples of these are ADF&G groundfish fish tickets, which contain a field to report ex-vessel prices paid/received for delivered fish, and ADF&G COAR, which contain data on both ex-vessel and wholesale values for shoreside processors. In 2000 at the request of the NPFMC, NOAA Fisheries promulgated regulations that extended to at-sea processors the requirement to submit COAR data to the State.

NOAA Fisheries and the NPFMC have recognized the increasing need to collect economic data on a regular basis. To help meet this need, the Fisheries Economics Data Program was established as a cooperative data collection program by NOAA Fisheries and the Pacific States Marine Fisheries Commission (PSMFC) with the assistance of the NPMFC and Pacific Fishery Management Council. On-going economic data collection efforts by the program include a monthly survey of fuel docks at selected ports on the West Coast and in Alaska to create a marine fuel price index. Data are currently available for the period 1999-2001. In 2000, the Fisheries Economics Data Program implemented a voluntary survey to provide data that can be used to track the economic performance of the groundfish fisheries over time. Catcher vessels, catcher processors, motherships and shoreside plants involved in the BSAI pollock fishery were surveyed first. By 2002, however, only one firm had completed a survey form and that was ultimately returned to the company when no other industry members responded.

#### **3.2.2 AFA Requirement that All Catcher Processors and Motherships Weigh Pollock Catch on NOAA Fisheries-approved Scales**

All groundfish landed by unrestricted AFA catcher processors or received by AFA motherships must be weighed on a NOAA Fisheries-approved scale and made available for sampling by a NOAA Fisheries-certified observer. These vessels are required to have an observer sampling station that includes a motion-compensated scale to improve the accuracy of sample weights. The owner and operator of an unrestricted AFA catcher processor or an AFA mothership must ensure that the vessel is in compliance with published scale requirements, that each groundfish haul is weighed separately, and that no sorting of catch takes place prior to weighing. All groundfish landed by AFA catcher vessels engaged in directed fishing for pollock in

the BSAI must be sorted and weighed on a scale approved by the State of Alaska and be made available for sampling by a NOAA Fisheries-certified observer.<sup>4</sup>

The scales requirements in AFA and CDQ fisheries have greatly enhanced the accuracy of data collected by observers in these fisheries.

### **3.2.3 Requirement that all Community Development Quota Groundfish Catch be Weighed on NOAA Fisheries-approved Scales**

All catcher vessels in the groundfish and halibut CDQ fisheries that are 60 ft and greater LOA are required to have at least one certified CDQ observer for all groundfish and halibut CDQ fishing. Operators of unobserved vessels and observed catcher vessels using trawl gear are required to retain all groundfish CDQ and salmon and herring prohibited species quota (PSQ) and deliver it to a processor where it can be sorted and weighed on a certified scale. Observed catcher vessels using longline, pot, and jig gear (non-trawl gear) must either retain all groundfish and halibut CDQ and deliver it to a processor with a certified scale or provide sufficient observer coverage to sample all CDQ sets for species composition and average weight and have an observer sampling station with a motion-compensated sampling scale.

Regardless of their length, all catcher processors and motherships are required to have at least two certified CDQ observers and provide special equipment for estimating CDQ and PSQ catch. Catcher processors using trawl gear and motherships are required to weigh all catch in the CDQ fisheries on a scale certified by NOAA Fisheries and to have an observer sampling station, including a motion-compensated platform scale. Catcher processors using longline, pot, or jig gear are required to have an observer sampling station, including a motion-compensated platform scale.

Shoreside processors are required to sort all CDQ deliveries by species or species group and weigh them on a scale certified by the State. PSQ species monitored by number are required to be counted. The sorting and weighing of all CDQ and PSQ are required to be monitored by a CDQ observer.

### **3.2.4 Mandatory Vessel Monitoring System in Atka Mackerel, Pollock, and Pacific Cod Directed Fisheries**

It is unlawful for any person to operate a vessel which is authorized to participate in the Atka mackerel, Pacific cod or pollock directed fisheries in any BSAI or GOA reporting areas, unless the vessel carries an operable NOAA Fisheries-approved VMS transmitter. The only exemption is for vessels using jig gear.

## **3.3 Effects of Current Industry Reporting Requirements**

### **3.3.1 Recordkeeping and Reporting**

The current industry recordkeeping and reporting requirements in the Alaska groundfish fisheries, together with the NPGOP and fishery-independent surveys conducted by NOAA Fisheries, create what is widely regarded as one of the most comprehensive fishery data collection systems in the world. NOAA fisheries

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<sup>4</sup> The Alaska Division of Measurement Standards is responsible for approving scales inside state boundaries and has developed an effective program for their inspection and approval.

believes that, while improvements are possible in some areas, the existing system provides sufficient data to assess the current stock condition of target species and accurately estimate the biomass levels used to set acceptable biological catch (ABC) and TACs. The result is that the threat of overfishing in target fisheries is low.

The costs to industry of complying with the current recordkeeping and reporting requirements is minimal. The public reporting burden for the recordkeeping and reporting requirements described in this analysis are summarized in Table 2 and include the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

The federal government incurs costs in collating, analyzing, and disseminating the fisheries data collected. Estimating these costs is difficult, but they are believed to be significant. In addition, the federal government incurs costs in disseminating information about reporting requirements to industry participants. For example, NOAA Fisheries, Alaska Region, the U.S. Coast Guard, and North Pacific Regional Fisheries Training Center, periodically conduct workshops on Federal recordkeeping and reporting requirements (e.g., 64 FR 70199, December 16, 1999). The purpose of these workshops is to explain provisions of the recordkeeping and reporting requirements for the Alaska groundfish fisheries, to provide detailed instructions on completion and submittal of the required forms and logsheets, and to answer questions on recordkeeping and reporting from members of the fishing industry and other interested parties.

There are four primary weaknesses of the existing data collection and reporting system: 1) the lack of observer coverage on smaller fishing vessels; 2) a low level of precision in catch estimates over small subsets of various fisheries; 3) a low precision level in estimates of discarded fish; and 4) insufficient collection of socioeconomic data. These four areas of weakness are discussed below.

### **Observer Coverage**

The NPGOP is discussed in detail in a separate qualitative impact assessment. Here, it is sufficient to indicate that vessels greater than 125 ft must carry an observer 100 percent of the time, while vessels 60-124 ft long are required to carry an observer during 30 percent of their fishing days in each calendar quarter of the year in which they fish more than 10 days. Because fishing operations may occur 24 hours per day, some portion of catch, even on vessels with an observer, is not observed. NOAA Fisheries has conducted studies (e.g., Vølstad *et al.* 1996) to ascertain the effectiveness of their catch sample regimes and has concluded that the lack of more complete observer coverage does not significantly compromise total catch estimates. Nevertheless, it is clear that additional observer coverage would improve the precision of total catch and discard estimates on a vessel-by-vessel basis, particularly in target fisheries, such as the GOA Pacific cod fishery, in which smaller vessels harvest a significant portion of the TAC. While additional observer coverage would benefit the fishery with improved catch estimates, additional observer coverage would impose additional costs on the industry. Currently, NOAA Fisheries believes that the improved catch estimates would not sufficiently offset the costs of additional observers under the current management regulations.

**Table 2. Public reporting burden for recordkeeping and reporting requirements.**

<b>United States (U.S.) vessel activity report</b>	14 min./report	<b>Catcher vessel Daily fishing logbook (DFL) longline, pot gear trawl gear</b>	28 min./day 18 min./day
<b>Check-in/check-out report catcher processor, mothership, shoreside processor</b>	7 min./report 8 min./report	<b>Mothership daily cumulative production logbook (DCPL)</b>	31 min./day
<b>Weekly production report</b>	17 min./report	<b>Shoreside processor DCPL</b>	31 min./day
<b>Daily production report</b>	11 min./report	<b>Catcher processor DCPL longline, pot gear trawl gear</b>	41 min./day 30 min./day
<b>Product transfer report</b>	20 min./report	<b>Weekly cumulative mothership Alaska Department of Fish and Game (ADF&amp;G) fish ticket</b>	35 min/ticket
<b>Buying station report</b>	23 min./report	<b>Commercial operator's annual report</b>	6 hr./report

Source: Adopted from NOAA Fisheries Alaska Regional Office

### **Precision of Estimates**

The current data collection and reporting system, including the observer program, places limits on the precision of catch estimates over a sub-set of the fisheries. This lack of precision is a result of the statistical properties of the catch sampling system employed in the observer program. The system relies on the statistical “rule of large numbers” that states that the sample estimate will be closer to the true number the larger the number of observations in the sample. Total catch estimates in a fishery depend on reports by many observers who individually make many separate estimates of catch during a particular week or month. While any one of these estimates might be high or low over the entire fleet because of the large number of estimates in the sample, the overestimates will offset the underestimates. Consequently, on average the estimates of total catch will be relatively accurate.

However, because the number of samples is not large enough, NOAA Fisheries does not believe that estimates of total catch for an individual vessel are accurate enough to be defensible in a regulatory action. Similarly, NOAA Fisheries does not believe the current system provides accurate enough estimates of catch to regulate groups of vessels within a particular fleet (e.g., vessel cooperatives).

### **Discard Estimates**

The MSA requires that, to the extent practicable, bycatch (meaning discards) must be reduced. The accuracy and precision of estimates of discarded fish are lower than optimal because by definition discards are not kept on the vessel and therefore must be counted and estimated during the fishing operation. In the absence of observers there is no way to track discards. Further, observers cannot be present at all times that fishing operations occur. As indicated above, NOAA Fisheries estimates discard amounts for fishing operations that

are observed and applies those estimates to unobserved operations. While this is a practical and relatively efficient solution, it appears likely that a better method of estimating discards will need to be developed.

## **Socioeconomic Data**

The socioeconomic data currently collected on a routine basis are insufficient for a comprehensive analysis of the cost and benefits of proposed regulations. Intra-annual prices and prices by product grade are not supplied, and product prices reported by industry are not independently checked or verified. This may leave the revenue picture incomplete or inaccurate. No data on the costs of production and very little data on employment levels are routinely collected. Without information on harvesting and processing costs it is not possible to determine whether firms are profitable, much less the magnitude of the profit or how it has been or might be affected by regulatory changes. The absence of employment data means that it is not possible to state the number of employees affected by management decisions.

### **3.3.2 Vessel Monitoring System**

VMS has had a positive effect on Steller sea lions, as it is an essential component of measures to protect these sea mammals. In the absence of VMS, enforcement of compliance with closed areas would be limited to random sightings by enforcement vessels or aircraft. To monitor Steller sea lion critical habitat harvest limits, managers need to know which vessels fished in the area and how much fish they caught. VMS data provide real-time information on vessel location and indicate fishing activity. These VMS data can be matched with observer data or landing data for the trip to determine if the catch is counted against the catch limit.

By allowing fishing to continue, the VMS requirement has a positive economic effect on fishery participants and fishing communities. Many important fishing grounds are included in the Steller sea lion critical habitat. The protection measures, including VMS, were developed to afford vessels an opportunity for continued access to those grounds. Allowing that access, with addition of the VMS requirement, is preferred by the fishing industry to closing the areas entirely.

The VMS requirement has imposed minimal costs on the fishing industry. The cost for the purchase and installation of a VMS unit is estimated to be \$1,926. Annual maintenance and transmission costs for a small entity are estimated to be \$220. The VMS costs have been substantially mitigated for small vessels since the PSMFC has obtained a grant of \$1.8 million from NOAA Fisheries for the purpose of reimbursing vessel owners for VMS purchases that are required. The PSMFC will reimburse up to \$2,000 of the purchase price of each unit. The grants will not cover the costs of installation, maintenance, and operation of the units.

The current costs to the federal government of maintaining the VMS program include the staffing costs associated with running the program. These staffing costs are approximately \$115,000 per year (A. Kinsolving, NOAA-Fisheries, personal communication, 20 February 2003).

## **Section 4      Alternative 2: Adopt a More Aggressive Management Policy**

### **4.1      Management Approach with Specific Reference to Industry Reporting Requirements**

Under this policy alternative, the NPFMC and NOAA Fisheries will continue the existing reporting requirements to provide catch estimates and biological information. There will also be a continuation of the on-going effort to improve community and regional economic impact assessments. However, the NPFMC and NOAA Fisheries will consider repealing the Observer Program.<sup>5</sup> The effects of the elimination of the Observer Program are discussed in depth in a separate qualitative impact analysis, but some of the potential spillover effects of this action on the overall data collection and monitoring program are discussed here.

### **4.2      Overview of Industry Reporting Requirements of FMP 2.1**

This FMP would retain current reporting requirements as described in Table 1. However, no at-sea weighing of catch would be required except for AFA-eligible catcher processors. In addition, all measures requiring the use of VMS in the groundfish fisheries would be eliminated, and as mentioned above the Observer Program would be eliminated in all but the AFA pollock fishery in the BSAI.

### **4.3      Effects of Industry Reporting Requirements of FMP 2.1**

Elimination of the Observer Program will increase the reliance of fishery managers on the data collected through current industry recordkeeping and reporting requirements, such as the estimates of total catch made by skippers as the catch is brought on board. According to NOAA Fisheries (W. Karp, NOAA Fisheries Alaska Fisheries Science Center, personal communication, December 2002), these data are not very precise, and it is certain that the accuracy of total catch estimates will decline. Data on discarded fish collected by vessel captains may be even less accurate than total catch, as there is little incentive to report discarded fish, especially prohibited species. The result will be underestimates of fishing mortality of species for which there are limited markets, e.g., skates, sculpins, arrowtooth, and many flatfish species.

Because logbook data are generally not as precise as observer data in terms of species reporting and catch estimation, stock assessments using logbook data will likely be less precise than they would be if the observer program was retained. Less precise stock assessments could lead to reduced TACs as fishery scientists adapt to the lack of precision by generating more conservative biomass estimates. In addition, increased reliance on logbook data will significantly decrease the precision of total catch data available for fishery managers. With less precise data, fishery managers are likely to adopt a conservative approach and close fisheries before actual catches reach the TAC. Closing a fishery early could result in considerable foregone industry revenues.

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<sup>5</sup> FMP 2.1 calls for the elimination of the Observer Program for all but the AFA pollock fishery in the BSAI. FMP 2.2 maintains the existing Observer Program.



Increased reliance on logbook data is also likely to generate additional costs for NOAA Fisheries in terms of data entry and data analysis. Currently the observer data is considered more reliable than haul by haul entries in logbooks and therefore logbook data are not routinely entered into computerized data systems, nor are they regularly used by fishery scientists in stock assessment. Entering these data into computerized data systems and preparing the data for use in stock assessment are likely to be costly, although these costs may be offset by elimination of the Observer Program.

Elimination of the current VMS requirement may have a negative impact on the fishing industry, as it could lead to the closure of all Steller sea lion critical habitat to fishing. By allowing NOAA Fisheries to effectively monitor compliance with a large number of complex area-based fishing restrictions, VMS affords vessels an opportunity for continued access to some historic fishing grounds within critical habitat. In the absence of VMS, it is possible that all critical habitat would have to be closed to fishing in order to ensure that the fisheries do not jeopardize the continued existence of Steller sea lions or adversely modify their critical habitat.

#### **4.4. Overview and Effects of Industry Reporting Requirements of FMP 2.2**

FMP 2.2 is identical to FMP 1 in terms of reporting and VMS requirements. Consequently, the predicted effects on the human environment are the same.

# **Section 5      Alternative 3: Adopt a More Precautionary Management Policy**

## **5.1      Management Approach with Specific Reference to Industry Reporting Requirements**

Under this policy alternative, the NPFMC and NOAA Fisheries will seek to achieve the following management objectives: increase the utility of groundfish fishery observer data for the conservation and management of living marine resources and address the equity problems of the current funding mechanism; improve the groundfish observer program; improve community and regional economic impact assessments through increased data reporting requirements; increase the quality of monitoring data through improved technological means; establish a coordinated, long-term ecosystem monitoring program to collect baseline information and compile existing information from a variety of ongoing research initiatives; adopt the recommended research plan included in this document; and cooperate with research institutions such as the North Pacific Research Board in identifying research priorities to address pressing fishery issues.

## **5.2      Overview of Industry Reporting Requirements of FMP 3.1**

This FMP would retain current reporting requirements as described in Table 1. Economic data would be collected and verified by an independent third party, such as an accounting firm. Current requirements for at-sea weighing of catch would be retained. The VMS would be modified to incorporate new technology and system providers.

## **5.3      Effects of Industry Reporting Requirements of FMP 3.1**

The increase in the number of VMS system providers that occurs under FMP 3.1 would increase competition among providers and possibly lead to a reduction in system costs and/or improvements in system technology.

Under FMP 3.1, collection of socioeconomic data would be conducted through independent third parties, such as accounting firms. New information would include data on employment, variable harvesting and processing costs, and fixed/annual costs. In addition, third party data collectors would be able to verify revenue data that are currently submitted to ADF&G on fish tickets and the COARs. This additional information will enhance the ability of analysts to provide accurate estimates of costs and benefits of proposed regulatory actions.

The additional administrative cost of data collection using independent firms is uncertain. However, a rough estimate can be derived from the experience of the At-Sea Processors Association (APA). In 1998, the APA contracted an independent firm to supply employment data to the NPFMC for use in an assessment of the impacts of reauthorization of inshore-offshore regulations for the BSAI pollock fishery. According to a representative of APA (P. MacGregor, Mundt MacGregor LLP, personal communication, January 2003), the information collected cost \$25,000 and covered approximately 30 pollock catcher processors. The current offshore pollock catcher processor fleet is smaller than in 1998 due to the enactment of the AFA. Consequently, it is expected that collection of employment data for this sector would be less expensive now than it was in 1998. On the other hand, verification of employment data is considerably less complex than

verification of revenue and cost information. Therefore, it is likely that the overall costs of collecting comprehensive economic data from the pollock catcher processor fleet will be significantly greater than \$25,000.

Some of the problems associated with the use of unauthenticated cost data were demonstrated in the early 1990s during the assessment of the initial allocation of pollock and Pacific cod between inshore and offshore processors. In that analysis, NOAA Fisheries surveyed fishery participants to collect data on the costs of harvesting and processing pollock and Pacific cod. The information generated as a result of the survey was used by analysts to estimate the costs and benefits of the allocation and the direct, indirect, and induced effects on employment and income. Although the inshore-offshore allocation was eventually approved by the Secretary of Commerce, the analysis of the economic effects was highly controversial. It is probable that the controversy could have been lessened if the cost and employment information collected in the survey of fishery participants had been verified by independent auditors.

#### **5.4 Overview of Industry Reporting Requirements of FMP 3.2**

This FMP would retain current reporting requirements as described in Table 1. In addition, the reporting of earnings, expenditure, and employment data would be required of all vessels and processors authorized to participate in the groundfish fisheries; these data would be reported directly to NOAA Fisheries by participants, and presumably would not be independently verified. Current requirements for at-sea weighing of catch would be retained. The VMS would be modified to incorporate new technology and system providers.

#### **5.5 Effects of Industry Reporting Requirements of FMP 3.2**

In general, the effects of this bookend are similar to the effects of FMP 3.1 in terms of data collection. The primary difference between the two bookends is the greater reporting burden imposed on industry by FMP 3.2.

## **Section 6      Alternative 4: Adopt a Highly Precautionary Management Policy**

### **6.1      Management Approach with Specific Reference to Industry Reporting Requirements**

Under this policy alternative, the NPFMC and NOAA Fisheries would increase the precision of observer data through increased observer coverage and enhanced sampling protocols, and address the shortcomings of the current funding mechanism by implementing either a federally funded or equitable fee-based system for a revamped Observer Program research plan; improve community and regional economic impact assessments through increased data reporting requirements; improve enforcement and in-season management through improved technological means; establish a coordinated, long-term monitoring program to collect baseline information and better utilize existing research information to improve implementation of the fishery ecosystem plan; and adopt the recommended research plan.

### **6.2      Overview of Industry Reporting Requirements of FMP 4.1**

This FMP would retain current reporting requirements as described in Table 1. The use of motion-compensated scales would be required to weigh all catches made by or delivered to at sea processors or at shoreside processing plants. All vessels engaged in fishing for groundfish would be required to carry an operable NOAA Fisheries-approved VMS transmitter.

### **6.3      Effects of Management Measures of Industry Reporting Requirements of FMP 4.1**

The data collection measures contained in FMP 4.1 are likely to have a positive impact on the natural and physical environment. Increasing scale requirements for vessels is likely to increase the quantity and quality of catch data. These data are used for assessing the condition of groundfish stocks and monitoring the potential effects of fishing on Steller sea lions. Use of scales on all catcher processors is likely to enhance the ability of NOAA Fisheries to implement and enforce regulations applying to individual vessels or sub-fleets. These measures might include the establishment of individual quotas or cooperatives (S. Salvesson, NOAA Fisheries, Alaska Region, personal communication, January 2003).

The scale and VMS requirements would impose costs on the fishing industry. A motion-compensated platform scale would cost between \$6,000 and \$12,000. In addition, smaller (<200 ft LOA) at-sea processors may have insufficient space in which to install scales without considerable reconfiguration or removal of existing processing equipment (J. Gauvin, Groundfish Forum, personal communication, December 2003.). The current list price of a VMS unit is about \$2,000. The transmission cost per day is about \$5 when a vessel is active. After approximately 11.5 hours of inactivity, the unit will go into sleep mode, incurring only \$5 per week in transmission costs until activity (movement) resumes.

## **6.4 Overview and Effects of Industry Reporting Requirements of FMP 4.2**

By suspending the harvest of groundfish until more information is known on the impacts of fishing on the environment, this FMP would effectively eliminate the need for industry requirement measures in the short-term. These effects would prevail until each Alaska groundfish fishery was subjected to an environmental review. If the results of the review determine a fishery is “eco-friendly” that fishery would be permitted to operate under specific regulations and mitigation measures. Only fisheries certified by NOAA Fisheries to have no significant adverse effects on the environment would be authorized to operate in the EEZ off Alaska. Such a review and certification process would likely take up to two years based on the length of a recent environmental review of the Alaska pollock fishery conducted by an international organization.

## Section 7 Opportunities for Quantification

There are several opportunities for quantification that would support the analysis of the effects of data collection requirements. These are listed below:

1. Estimated minimum, maximum, and average number of days fished by each vessel class in 2001, and the estimated daily VMS transmission costs per vessel.
2. Physical space requirements of scales and the amount of processing capacity that might be reduced if scales were required on small catcher processors (less than 200 ft LOA).
3. The estimated costs of collecting verified socioeconomic data from the fishing industry using independent third parties.
4. The estimated costs of collecting unverified socioeconomic data directly from the fishing industry.
5. The potential improvement in the precision of cost-benefit analyses and economic impact analyses that might be gained by the collection of various types of socioeconomic information.

## Section 8 Comparative Analysis of Alternatives

The following summarizes the effects of each policy alternative in terms of industry reporting requirements in the Alaska groundfish fisheries as determined by analyses of each alternative's associated FMP framework.

**Alternative 1:** This policy alternative would retain current reporting requirements. The economic data currently collected on a routine basis are insufficient for a comprehensive regulatory analysis.

**Alternative 2:** FMP 2.1 would retain current reporting requirements. However, no at-sea weighing of catch would be required except for AFA-eligible catcher processors. In addition, all measures requiring the use of VMS in the groundfish fisheries would be eliminated.

FMP 2.2 is identical to Alternative 1 in terms of reporting and VMS requirements.

**Alternative 3:** FMP 3.1 would retain current reporting requirements. Economic data would be collected and verified by an independent third party, such as an accounting firm. Current requirements for at-sea weighing of catch would be retained. The VMS would be modified to incorporate new technology and system providers.

FMP 3.2 would retain current reporting requirements. In addition, the reporting of earnings, expenditure, and employment data would be required of all vessels and processors authorized to participate in the groundfish fisheries. Current requirements for at-sea weighing of catch would be retained. The VMS would be modified to incorporate new technology and system providers.

**Alternative 4:** FMP 4.1 would retain current reporting requirements. The use of motion-compensated scales would be required to weigh all catches at sea or at shoreside processing plants. All vessels engaged in fishing for groundfish would be required to carry an operable NOAA Fisheries-approved VMS transmitter.

By suspending the harvest of groundfish, FMP 4.2 would effectively eliminate the need for industry requirement measures until fisheries have been certified that they have no significant adverse effects on the environment. Fisheries authorized to occur would be issued fishery-specific regulations that would include data collection measures.

The following table summarizes the anticipated effects of different approaches toward data reporting in the Alaska groundfish fisheries as described in the associated FMP bookends.

**Table 3. Summary of the effects of the alternatives on data and reporting requirements.**

Alternative 1	Alternative 2		Alternative 3		Alternative 4	
Fishery Management Plan (FMP) 1	FMP 2.1	FMP 2.2	FMP 3.1	FMP 3.2	FMP 4.1	FMP 4.2
<b>Physical environment</b>						
No effect	No effect	No effect	No effect	No effect	No effect	No effect
<b>Biological environment</b>						
<p><b>Beneficial effect</b> Sufficient data would continue to be collected to assess the current stock condition of target species and accurately estimate the biomass levels used to set acceptable biological catch (ABC) and total allowable catches (TACs). However, estimates of discards may be imprecise.</p> <p>Vessel monitoring system (VMS) has had a positive effect on Steller sea lions, as it is an essential component of measures to protect these sea mammals.</p>	<p><b>Potentially adverse effect</b> The accuracy of total catch estimates will decline.</p>	Same effects as FMP 1.	Same effects as FMP 1.	Same effects as FMP 1.	<p><b>Beneficial effect</b> Increasing scale requirements for vessels is likely to increase the quantity and quality of catch data. These data are used for assessing the condition of groundfish stocks and monitoring the potential effects of fishing on Steller sea lions.</p>	<p><b>No effect</b> By suspending the harvest of groundfish until more information is known on the impacts of fishing on the environment this FMP would effectively eliminate the need for reporting and VMS requirements in the short-term.</p>



Table 3 (cont.).

Summary of the effects of the alternatives on data and reporting requirements.

Alternative 1	Alternative 2		Alternative 3		Alternative 4	
Fishery Management Plan (FMP) 1	FMP 2.1	FMP 2.2	FMP 3.1	FMP 3.2	FMP 4.1	FMP 4.2
<b>Economic and social effects</b>						
<p><b>Potentially adverse/beneficial effect</b> The costs to industry of complying with reporting and VMS requirements are minimal. However, the socioeconomic data currently collected on a routine basis are insufficient for a comprehensive analysis of the cost and benefits of proposed regulations.</p> <p>By allowing fishing to continue in Steller sea lion critical habitat, the VMS requirement is expected to have a positive economic effect on fishery participants and fishing communities.</p>	<p><b>Potentially adverse effect</b> Less precise stock assessments could lead to reduced TACs and early fishery closures.</p> <p>Elimination of the current VMS requirement may have a negative impact on the fishing industry, as it could lead to the closure of all Steller sea lion critical habitat to fishing.</p>	<p>Same effects as FMP 1.</p>	<p><b>Potentially beneficial effect</b> The additional economic information collected will enhance the ability of analysts to provide accurate estimates of costs and benefits of proposed regulatory actions.</p> <p>The increase in the number of VMS system providers would increase competition among providers and possibly lead to a reduction in system costs and/or improvements in system technology.</p>	<p><b>Potentially adverse/beneficial effect</b> The reporting burden for industry participants will increase. However, the additional economic information collected will enhance the ability of analysts to provide accurate estimates of costs and benefits of proposed regulatory actions.</p> <p>The increase in the number of VMS system providers would increase competition among providers and possibly lead to a reduction in system costs and/or improvements in system technology.</p>	<p><b>Potentially adverse/beneficial effect</b> The scale and VMS requirements would impose costs on the fishing industry. However, use of scales on all catcher processors is likely to enhance the ability of NOAA Fisheries to implement and enforce regulations applying to individual vessels or sub-fleets. These measures might include the establishment of individual quotas or cooperatives.</p>	<p><b>No effect</b> By suspending the harvest of groundfish until more information is known on the impacts of fishing on the environment this FMP would effectively eliminate the need for reporting and VMS requirements in the short-term.</p>

## Section 9      References

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### **Personal Communications**

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