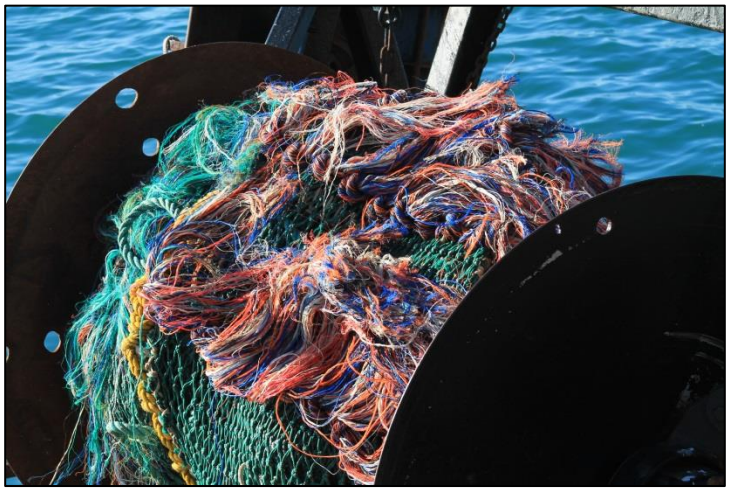
Gulf of Alaska Groundfish Trawl Fishery Social Survey

Preliminary Results



By
Amber Himes-Cornell
Stephen Kasperski
NOAA Fisheries Alaska Fisheries Science Center

Keeley Kent
Conor Maguire
Pacific States Marine Fisheries Commission

Mike Downs
Stephen Weidlich
AECOM

September 2014

NOAA NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
UNITED STATES DEPARTMENT OF COMMERCE

Abstract

The North Pacific Fishery Management Council is considering the implementation of a new bycatch management program for the Gulf of Alaska groundfish trawl fishery. Any change in how the fishery is managed will likely affect the people and communities participating in the fishery. In anticipation of such changes, NOAA Fisheries' Alaska Fisheries Science Center developed a survey to collect baseline information about the social dimensions of the fishery. Data were collected before program implementation in order to provide a baseline description of the industry as well as allow for analysis of changes the bycatch management program may bring for individuals and communities once implemented. Having a detailed baseline description will allow for a greater understanding of the social impacts the program may have on the individuals and communities affected by the new management program. When combined with data to be collected in planned post-program implementation follow-up surveys, this information will inform changes in the social characteristics over time and assist in a more comprehensive program evaluation and more informed consideration of potential post-implementation modifications of the program, if needed. Additionally, the survey asked for opinions on a range of elements that may or may not be included in the final bycatch management program to assess different participant's preferences for various management options, which may change over time as well. We conducted the survey with participants in the Gulf of Alaska groundfish trawl fishery, including vessel owners, vessel operators, crew aboard groundfish vessels, catcher/processor owners, catcher/processor crew, shoreside and inshore floating processors, tender owners and operators, and other individuals who are stakeholders in the trawl fishery including any businesses that are directly tied to the groundfish trawl industry through the supply of commercial items to include, but not limited to gear suppliers, fuel suppliers, and equipment suppliers. The results of the survey highlight the differences in the people, sectors, and communities engaged in the fishery. Data from the survey demonstrate how different individuals and sectors depend on the Gulf of Alaska groundfish trawl fishery to sustain their businesses and families and how they may be interconnected with one another.

Table of Contents

LIST OF FIGURES

LIST OF TABLES

Introduction

The North Pacific Fishery Management Council (NPFMC), one of eight fishery management councils formed under the authority of the Magnuson Stevens Fisheries Conservation and Management Act (MSFCMA), has the challenging task of improving bycatch management in the Gulf of Alaska (GOA) groundfish trawl fisheries. Since 2010, there have been a number of amendments to the GOA Groundfish Fishery Management Plan (FMP) to incorporate limitations on Prohibited Species Catch (PSC) resulting from variable catch of Pacific halibut and Chinook salmon into GOA groundfish management. To date, the NPFMC has developed measures to limit Chinook PSC in the GOA pollock and non-pollock trawl fisheries (Amendments 93 and 97, respectively) and halibut PSC reductions (Amendment 95) that, once reached, would close the respective groundfish fisheries for the season. In addition, the NPFMC is currently evaluating alternative bycatch reduction management measures.

As such, management of the fishery has gotten increasingly more complicated with each amendment. Furthermore, the NPFMC recognized that the amendments had the potential to significantly impact harvesters, processors and fishery-dependent GOA communities and that the management tools that have been created do not provide fishery participants with the best available options to reduce and use PSC. To address the challenge of comprehensive bycatch management, the NPFMC decided in October, 2012, that a new paradigm was needed for the fishery. Since then, the NPFMC has been deliberating over a new bycatch management plan that would allocate quota to individual fishery participants, cooperatives or other entities. The program is being designed to "provide tools for the effective management and reduction of PSC and bycatch, and promote increased utilization of both target and secondary species harvested in the GOA" as well as "increase the flexibility and economic efficiency of the GOA groundfish trawl fisheries and support the continued direct and indirect participation of coastal communities that are dependent upon those fisheries" (NPFMC 2013a). Furthermore, the NPFMC specified in its purpose and need statement for the program that one of the primary goals will be to "promote community stability and minimize adverse economic impacts by limiting consolidation, providing employment and entry opportunities, and increasing the economic viability of the groundfish harvesters, processors, and support industries (Goal 6; NPFMC 2013b).

In addition to discussions related to the new bycatch program design, the NPFMC passed a motion aimed at creating a data collection program that would provide the Council and analysts with better information that can be used to assess the impacts of the bycatch management program "on affected harvesters, processors, and communities in the GOA" (NPFMC 2013c). The NPFMC intended to collect the first set of data prior to the implementation of the bycatch management program (in 2015) with mandatory annual data collections thereafter; however the scope of data to be collected is purely economic data.

To provide for more complete analysis of program impacts, NOAA Fisheries' Alaska Fisheries Science Center (AFSC) implemented a parallel social data collection to add to the best scientific data available to the NPFMC for understanding how individuals and groups are i) currently engaged in the GOA groundfish trawl fishery, ii) how they may respond to a range of management actions, iii) perceive issues differently in relation to management of fisheries resources. The collection of social data presented here is a tool that industry participants, managers and government agencies can use to better understand GOA groundfish trawl fishery management challenges and inform decision making about potential alternative management programs. This report provides a summary of the project,

methods used, general characteristics of fishery participants, and a preliminary analysis of the results obtained.

Purpose of the project

Changes in how fisheries are managed result in changes in stock assessments, stock abundance, and species recovery, as well as the conditions and behavior of people connected to the fishery. Scientific literature extensively discusses the impact of a range of relatively recently implemented allocation-based changes in target species and/or bycatch management approaches and programs on fishing communities and fishermen (McCay 1995, NRC 1999, Palsson and Petursdottir 2006, Fina 2011). Social, economic, and cultural changes to harvesters, processors, and support service sector entities, such as gear suppliers, are a probable result of the implementation of similar structural changes applied to additional fisheries. The typical direct outcomes of allocation-based management program changes, including harvesting and processing consolidation and increased efficiency, have, in turn, resulted in a differential distribution of beneficial and adverse impacts among and between the various sectors and communities participating in the respective fisheries. The nature, direction, and magnitude of the social and cultural changes associated with a given program are often correlated with the specific characteristics of the fishery, the specific structure of the management program, the efficacy of sector and/or community protection measures built into the management program, and the socio-economic/socio-cultural structure and relative dependency and economic diversity of the communities participating in the fishery. The present research generates a baseline (pre-change) description of the fishery and summarizes existing conditions data to establish a benchmark for later use in assessing the social impacts related to the future implementation of yet-to-be determined bycatch management changes. This effort is similar in scope to a recent data collection conducted by the National Oceanic and Atmospheric Administration's (NOAA) Northwest Fisheries Science Center (NWFSC) with the Pacific Coast Groundfish Fishery (OMB Control No. 0648-0606).

We believe this study will not only illuminate potential impacts in this fishery, but others as well. Many fishermen diversify their fishing activity across more than one fishery. The data collected here will help show the movement of individuals between different fisheries over time. Where appropriate, data obtained will be applied to other fisheries, contributing further to the utility of this research. In the event additional fisheries are considered for similar types of management change, this research effort may inform future management.

It is anticipated that this is the first in a time-series of similar data collection efforts. Depending on the date of implementation bycatch management changes, it is assumed that a follow up study would be conducted in 2016 and again every two years after the management program is implemented to track fishery changes associated with the implementation of the new management program, provided funding is available.

Regulatory requirements

This research will also support several legal requirements (see below for description), not only for this specific management change, but possibly for other fisheries that have similar legal requirements. Results will support legal requirements by illustrating the relation of the fishery to fishing communities, by taking the first step to identifying the social characteristics of the fishery, as well as

initiating an understanding of the relationships between individuals in the industry. All these results will support various sections of the MSFCMA, which requires an understanding of social data along with other laws and regulations.

MSFCMA

The following sections of the MSFCMA pertain specifically to the requirements needing social and cultural data. Data collected in this effort will support current and future requirements.

1) National Standard 8 Sec 301 (a)(8) states:

Conservation and management measures shall, consistent with the conservation requirements of this Act (including the prevention of overfishing and rebuilding of overfished stocks), take into account the importance of fishery resources to fishing communities by utilizing economic and social data that meet the requirements of paragraph (2), in order to (A) provide for the sustained participation of such communities, and (B) to the extent practicable, minimize adverse economic impacts on such communities.

2) Requirements for Limited Access Privileges Sec.303A. (c) (1) (C) states:

… any limited access privilege program (LAPP) to harvest fish submitted by a Council or approved by the Secretary under this section shall promote:
… (iii) social and economic benefits.

3) Sec. 303A (B) PARTICIPATION CRITERIA – *In developing participation criteria for eligible communities under this paragraph, a Council shall consider -*
(i) traditional fishing or processing practices in, and dependence on, the fishery;
(ii) the cultural and social framework relevant to the fishery;
(iv) the existence and severity of projected economic and social impacts associated with implementation of limited access privilege programs on harvesters, captains, crew, processors, and other businesses substantially dependent upon the fishery in the region or subregion;

4) Sec. 404(a) refers to:

…..acquire knowledge and information including statistics, on fishery conservation and management and on the economic and social characteristics of the fishery.

The act clarifies this in Sec 404(c) (3) indicating

Research on fisheries, including the social, cultural, and economic relationships among fishing vessel owners, crew, United States fish processors, associated shoreside labor, seafood markets and fishing communities.

NEPA

The National Environmental Protection Act (NEPA) requires federal agencies to consider the interactions of natural and human environments, and the impacts on both systems of any changes due to governmental activities or policies. Agencies are required to assess federal actions in light of the economic and social requirements of present and future generations of Americans [NEPA Section 101 (a)]. This consideration is to be done through the use of '…a systematic, interdisciplinary approach that will insure the integrated use of the natural and social sciences in planning and decision-making which may have an impact on man's environment;' (NEPA Section 102 (2) (A)). Under NEPA, an Environmental Impact Statement (EIS) or Environmental Assessment (EA) is required to assess the impacts on the human environment of any federal activity. NEPA specifies that the term 'human environment' shall be interpreted comprehensively to include the natural and physical environment and the relationship of people with that environment' [NEPA Section 102 (C)].

Executive Order 12898

The Executive Order 12898 of February 11, 1994 on Environmental Justice requires federal agencies to consider any disproportionate high and adverse impacts on minority populations and low-income populations that may result from an action. To evaluate these impacts, information about the vulnerability of certain stakeholders must be better understood. Indicators of vulnerability can include but are not limited to income, race/ethnicity, household structure, education levels and age. Although some general information related to this issue is available through census and other quantitative data, these sources do not disaggregate those individuals or groups that are affected by changes in marine resource management or the quality of the resource itself. Therefore, other types of data collection tools must be utilized to gather information related to this executive order.

Regulatory Flexibility Act

The Regulatory Flexibility Act requires federal agencies to prepare an initial and final regulatory flexibility analysis which '…shall describe the impact of the proposed rule on small entities…'…The initial regulatory flexibility analysis'…shall also contain a description of any significant alternatives to the proposed rule which accomplish the stated objectives of applicable statutes and which minimize any significant economic impact of the proposed rule on small entities. [RegFlex Section 603 (b) (5) (c)]. In addition, each final regulatory flexibility analysis shall contain '…a description of the steps the agency has taken to minimize the significant economic impact on small entities….' [RegFlex Section 604 (a) (5)].

Project goals and objectives

The intent of this survey is to collect current information on the human dimensions of marine resource use and ecosystems in the GOA groundfish trawl fishery in order to create a social baseline of the GOA trawl fishery prior to bycatch management program design and implementation. This baseline can then be used by NOAA Fisheries and the NPFMC to understand the potential impacts of policy decisions on fishing communities and people, particularly those people who do not regularly attend public meetings, but are nonetheless affected by the decisions.

The project has the following applications. The data will allow us to describe in detail the nature of engagement in the fishery through different measures of participation. It will also allow us to determine the level of dependence on the fishery for various sectors and communities in order to assess the "sustained participation" of those groups over time and minimize impacts on them, in accordance with the MSFMCA. More specifically, the data will allow us to determine:

- What is the social structure of the GOA trawl fisheries?
- What is the current state of participation of communities, fishermen, crew members, and processors in the GOA trawl fisheries?
- What other fisheries/jobs are vessels and crew, processors and crew, and support service entities engaged in? And,
- How do information, services and resources flow throughout the fishery, providing insight into existing fishery interconnections?

Following these applications, the principle goal of this project is to create a foundation that can be used to:

- Better understand social impacts of the program in the future by providing a benchmark against which to track changes in the social structure of the fisheries;
- Assess the distributional impacts of GOA bycatch management program on communities and individual sectors; and
- Assist in understanding the social impacts of the new management program on place-based and sector-based communities.

The federal mandates and executive orders described above require analyses of the impacts that government actions have on the individuals and communities involved in fishing and marine resource related activities. Social impact assessments, analysis of the affected human environment, cumulative impacts as well as the distribution of impacts, with a special emphasis on the sustained participation of fishing communities and potential disproportionately high and adverse impacts on minority populations and low-income populations, are all examples of these requirements. The ability of NOAA Fisheries to adequately respond to this charge rests on access to timely and relevant information about the pertinent stakeholders, such as the information collected here. A significant concern related to the quality of these analyses is the risk of being vulnerable to litigation due to the lack of fulfilling these mandates and executive orders. Collecting this information improves upon currently available science and information in order to assist fisheries managers, their decision making process, and ultimately the communities and industry sectors affected by the decisions.

For current regulatory action and in the event of future regulatory action, the information may be utilized by the National Marine Fisheries Service (NMFS) to meet the requirements of its guiding regulations. The results of the research will also be available for use by the NPFMC in their role in managing the GOA groundfish fisheries. In addition to direct fisheries management utility, this research and the resultant data may be utilized in future ecosystem management efforts which incorporate social indicators.

The data collected in this study is presented here in order to inform these assessments and information needs. All data are considered confidential and as such only aggregate results will be made available to the public. These aggregate results are expected to be used by NPFMC and NOAA staff and contractors in program's social impact assessment and future analyses of how the program has affected

all sectors of the fleet. Prior to dissemination, the information will be subject to quality control measures and pre-dissemination review pursuant to Section 515 of Public Law 106-554.

Background

Description of the fishery

This section of the report uses data reported in the NMFS Catch Accounting System (CAS), the Alaska Commercial Fisheries Entry Commission (CFEC) fish tickets, and NMFS Production Reports from 2008-2013 to assess the potential population of vessels and processors that have recorded catch or production of trawl caught groundfish in the Gulf of Alaska. The GOA trawl fishery is comprised of 89 catcher vessels (CV) and 20 catcher/processor (CP) vessels that primarily target pollock, pacific cod, arrowtooth flounder, rockfish, and shallow water flatfish in the Western and Central GOA and West Yakutat regions. The catcher vessels delivered their catch to 18 shoreside processors (shore-based processors) and 2 inshore floating processors (processing vessels that do not have the ability to harvest catch [unlike a CPs] and anchor or moor near shore in protected bays/harbors and remain stationary while processing), with the majority of catch being landed in Kodiak, Sand Point, and King Cove. In addition to the harvesting vessels, there were 60 vessels that tendered GOA trawl-caught groundfish from 2010-2013 based on the "*tLandings*" database (7 of which also caught GOA trawl groundfish during the 2008-2013 period). The *tLandings* database, an interagency electronic reporting system for reporting commercial fishery landings in Alaska, was used to determine the pounds and species that tendering vessels tendered during this timeframe. Two additional sectors were identified as participants in the GOA trawl fishery and include support service businesses and industry organization representatives that represent direct GOA groundfish trawl fishery participants as a part (or as a whole) of their constituency.[1] Therefore, there are a total of nine sectors that were identified as participants in the GOA trawl fishery for this study: catcher vessel owners, catcher vessel skippers and crew, catcher/processor owners, catcher/processor skippers and crew, shoreside and inshore floating processing plant managers (collectively referred to as inshore plant managers), shoreside and inshore floating processing plant workers (collectively referred to as inshore plant workers), tender owners, fishery support businesses, and industry organization representatives.

For the purposes of this study, respondents have been grouped into seven geographies based on respondent populations in communities and to maintain confidentiality of those surveyed. These seven geographies include Kodiak, All Other Alaska, Seattle-Tacoma-Bellevue, Washington Metropolitan Statistical Area (hereafter "Seattle MSA"), All Other Washington, Oregon, All Other U.S. States, and All Other Countries. Since both Sand Point and King Cove have a single processing plant, these two communities are grouped with other Alaskan communities to maintain confidentiality of the survey responses. In addition to Sand Point and King Cove, the All Other Alaska grouping includes responses from Akutan, Unalaska/Dutch Harbor (hereafter "Dutch Harbor" [2]), Juneau, Petersburg, Seward, and

[1] Industry organization representatives were initially considered to be a "fishery support businesses", but for the purposes of this preliminary report, they have been reported separately as these individuals are highly informed about prospective management changes and may be of interest to consider in isolation.

[2] The Port of Dutch Harbor is located within and is a part of the City of Unalaska. While Unalaska is the proper name of the community, the term "Dutch Harbor" is commonly used in commercial fisheries applications to refer to both the community and its port. "Dutch Harbor" and is used as shorthand for "Unalaska/Dutch Harbor" in this document.

Sitka. The only exception to this geographical grouping is presented for survey questions pertaining specifically to vessel owners, skippers and crew. For these cases, respondents associated with vessels Sand Point, King Cove and Petersburg have been identified as separate from the All Other Alaska geography. The Seattle MSA includes communities located within King, Snohomish, and Pierce counties of Washington. The remainder of this section will describe the participants in each sector including their total estimated population, their level of participation, and their location which is summarized by Table 1.

Catcher Vessel Owners

Vessels may have several partial owners and some owners may own multiple vessels, suggesting that the number of vessel owners that we attempted to survey did not equal to the total number of vessels in each sector. Vessel owner information was taken from the NMFS Vessel Ownership database, and represents the most recent ownership data available based on information submitted to NMFS. There are a total of 82 catcher vessel owners from the 89 participating CVs (Table 1). Kodiak has the largest number of CV owners with 26, Seattle MSA has 15, Sand Point has 13, Oregon communities have 9, King Cove has 6, and Petersburg has 5. The remaining communities have 5 or fewer owners. Juneau has 5 vessels as well; however it was grouped with the All Other Alaska vessels given personal communication with the Juneau harbormaster that indicated none of these vessels actually use Juneau as their homeport. On average, these vessels have fished in the GOA trawl fished for 4.68 years of the 6 years from 2008-2013 with 57% of vessels fishing in all years within this time period. These vessels have a mean annual GOA trawl landings of 2.8 million pounds, with annual ex-vessel revenues averaging over $500,000. Additionally, there are only 7 vessels that averaged less than $50,000 in annual revenues, so the vast majority of vessels have substantial earnings in this fishery.

Catcher Vessel Skippers and Crew

There is no source of data that identifies the number of unique skippers and crew members working in the GOA groundfish trawl fishery. Therefore, we use the weighted average number of crew members for each vessel on GOA trawl groundfish trips, using GOA trawl groundfish revenues for the weights. This assumes that each vessel uses the same crew on all of its GOA trawl groundfish trips and is probably a lower bound estimate on the number of skippers and crew members participate in this fishery. Using these methods, it was estimated that 298 skippers and crew members are participating in this fishery (Table 1). Additionally, since we lack information on the residence of crew members *a priori*, we estimate the total population of skippers and crew members to be from the same community as the CV owner but use crew member's responses to assign residency for their responses.

We estimated that a total of 87 of the 89 vessels operate with 3-5 crew members for their GOA trawl groundfish trips. Since we assume the crew come from the same community as their vessel owner, the total population of skippers and crew members by community is similar to the CV owner residence. Kodiak has the largest expected skipper and crew population at 89 individuals, followed by the Seattle MSA at 63, Sand Point at 46, Newport, OR at 32, King Cove at 25 and all other communities are estimated to have fewer than 20 skippers and crew.

Catcher Processor Owners

There are 20 CP vessels that have participated in this fishery from 2008-2013 which are owned by 8 individual entities that are all based in Seattle (Table 1). With the exception of one vessel, all of the catcher/processors vessels active in the GOA trawl fishery are active participants in the Amendment 80 Program. These companies vary in their catch of GOA trawl groundfish, with some being heavily involved and others only partially involved. There are 3 companies that annually average fewer than 3 million pounds of retained catch and 5 that average over 7 million pounds with an overall company average of 7.7 million pounds of catch of GOA groundfish per year.

Catcher/Processor Skippers and Crew

Similar to the CV skippers and crew, there is no dataset that identifies unique individuals who have worked on catcher/processor vessels and we use similar methods to attempt to identify the total number of individuals working in this sector. We use a weighted average crew size from the production reports when the vessel reports production of GOA-caught groundfish, using the production tonnage as the weights . As with the CV skippers and crew section, this is likely to be an underestimate of the number of crew working on these vessels in this fishery as there is likely some amount of turnover between trips and over years. However, using this method, we estimate that there were 702 catcher/processor skippers and crew, all of which are assumed to come from Seattle, where the vessels are based (Table 1).

Inshore Processing Plant Managers

The total population of processing plant managers includes one from each of the 18 shoreside processors and the 2 inshore floating processors, as well as 10 additional processing plant managers in plants with multiple managers, for a total population of 30 (Table 1). It was estimated that Kodiak had the largest number of plant managers with 14, followed by All Other Alaska with 10, leaving the Seattle MSA with 4 processor managers and All Other U.S. States with 2 processor managers. It is assumed that inshore floating processor managers are present in the Seattle MSA and All Other U.S. States area.

There were only two inshore floating processors participating in this fishery and they are combined with the shoreside plants for this analysis to ensure confidentiality; this group will simply be referred to as inshore processing plants. Similar to the participation of the catcher vessels, participation of the shoreside plants varies across plants. Only 10 plants had GOA trawl-caught groundfish in all 6 years from 2008-2013, 1 plant participated in 5 of 6 years, 4 plants participated in 4 of the 6 years, 2 plants participated in 3 of 6 years, and 3 processors only had 1 year of participation. Involvement in the fishery also varied by landed pounds. There were 6 plants with average deliveries of fewer than 1 million pounds of GOA trawl-caught groundfish per year, while 8 plants averaged greater than 10 million pounds per year.

To decide which workforces to survey among the various shoreside processing plants processing at least some GOA trawl-caught groundfish during the period 2008-2012, project team members examined landings statistics from those years and established a fishery engagement/dependency threshold. This threshold was based on total GOA trawl-caught groundfish value as a percentage of

the total value of all species landed by all gear types and processed by the plant over the same time period. Shoreplant processors under this threshold were considered "marginal" participants in terms of their engagement in and dependence upon the GOA groundfish trawl fishery. Among these shoreside processors, only the plant manager was approached to take the survey. Shoreplant processors over this threshold were considered "substantial" participants and plant managers and plant workers were asked to participate. While disclosure of the exact marginal/substantial threshold may disclose proprietary business information for the processing entities involved, there was an obvious natural break in the data at this point, and surveys with the processing managers at the "marginal" participant plants confirmed the general nature of their participation. Given this understanding, processing workers at these plants were not surveyed. This is not to say that GOA trawl-caught landings could not be important to these processors in future years, but they were relatively unimportant during 2008-2012.

Inshore Processing Plant Workers

Data on individual processing workers does not exist. Our estimate of the number of workers in each plant is derived from discussions with plant owners and operators. For the two inshore floating processors who report crew size on their production reports, we estimated the number of processing crew as a weighted average of the number of crew members on days when the inshore floating processors were processing GOA trawl-caught groundfish, using produced tonnage as the weights. This results in a total estimate of 1,773 processing workers that are associated with inshore processing plants that process GOA trawl-caught groundfish (Table 1). These workers are located primarily in Kodiak with an estimated 1,300 processing plant workers that have some involvement with GOA trawl-caught groundfish. It is also estimated that there are 100 processing workers from King Cove, 121 from Sand Point, and 252 inshore floating processor workers that are assumed to be from the Seattle MSA, where those vessels are based. It is estimated that approximately 400 processor workers are employed by those shore plants marginally involved in the GOA trawl groundfish fishery based on the project team's conservative threshold.

Tender Owners

Using data reported in the *tLandings* database and using the same query as for the Council's June 2013 GOA Tendering Report, there were 60 vessels that tendered GOA trawl-caught groundfish from 2010-2013, which includes 7 catcher vessels that reported tendering activity and also caught groundfish in the GOA trawl groundfish fishery during the 2008-2013 period (NPFMC 2013d). A total of 27 vessels only tendered in 1 of 4 years from 2010-2013, while 14 tendered for 2 of 4 years, 5 tendered in 3 of 4 years, and 14 tendered in all 4 years. The vessels who tendered GOA groundfish more years tendered more pounds of fish than those with fewer years of participation over this period. Those vessels that tendered all 4 years averaged tendering nearly 3 million pounds of GOA groundfish per year. The average vessel over all years tendered slightly above 1.5 million pounds per year. There were 7 vessels that averaged tendering fewer than 100,000 pounds per year, 19 vessels between 100,000 and 1 million pounds per year, 24 vessels between 1 million and 2 million pounds per year, and 10 vessels over 2 million pounds per year.

Fishery Support Businesses

In addition to the companies that harvest, transport, and process GOA trawl groundfish, there are many support businesses that these companies rely on to conduct their business. These fishery support service businesses include but are not limited to accounting and legal services, to engine services and fuel and lube providers. A complete list of support service business categories is included in Table 2. Support service businesses were identified based on previous experience, field work, and survey responses from participants listing important support services businesses upon which they rely. Using these methods, 207 fishery support businesses were identified from throughout Alaska, the Pacific Northwest, several other U.S. States, and several outside of the United States (Table 1).[3] The Seattle MSA has the highest number of fishery support businesses at 91, followed by All Other Alaska with 29, All Other Washington with 27, Kodiak with 25, Oregon with 18, All Other U.S. States with 13, and 4 from All Other Countries. The geographic range and number of support businesses demonstrates the breadth of potential economic impacts associated with changes in the GOA trawl groundfish industry.

Industry Organization Representatives

Several efforts were made to reach out to representatives of GOA groundfish trawl-related fishing industry organizations to assist in the development and implementation of this survey and a subpopulation of representatives participated in the survey effort. However, the total population of industry organization representatives was not estimated for this preliminary report.

Description of the geography of the participants in the fishery

This section describes the participants in the GOA trawl groundfish fishery by their geography, as summarized in Table 1.

Kodiak

The largest estimated number of GOA trawl fishery participants, 1,467, resides in Kodiak; the majority of whom are an estimated 1,300 processing workers. In addition to these workers, it was estimated that there are 14 plant managers, 26 catcher vessel owners, 13 tender vessel owners, and 89 crew members. No catcher/processor owners or crew are estimated to reside in Kodiak. There are an estimated 25 fishery support businesses which come from 12 different support business categories.

All Other Alaska

The All Other Alaska grouping includes responses from Akutan, Dutch Harbor, Juneau, King Cove, Petersburg, Sand Point, Seward, and Sitka. This grouping has the 3rd largest number of participants at 414, after Kodiak and the Seattle MSA. It was estimated that 10 processing plant managers had some involvement in this fishery and there were 221 processing plant workers from these communities. These communities include 32 catcher vessel owners and 114 crew members for those vessels. No catcher/processor owners or crew were estimated to reside in these communities. There are an

[3] An additional 47 fishery support businesses were identified by survey respondents who could not be found and therefore were not included in the total population count.

estimated 29 fishery support businesses which come from 13 different categories. These communities also had eight tender vessels owners as residents.

Seattle MSA

The Seattle MSA includes communities located within King, Snohomish, and Pierce counties of Washington State, which has the second largest grouping of participants in the GOA trawl groundfish fishery at 1,164 participants. The biggest sectors represented by the Seattle MSA are the estimated 702 catcher/processor crew and 252 inshore floating processor workers that are associated with the 8 catcher/processor vessels and 2 inshore floating processors that are based in the Seattle MSA. There are also 15 catcher vessel owners that reside in the Seattle MSA with an estimated 63 catcher vessel crew members. The Seattle MSA also has the largest contingent of fishery support businesses identified by fishery participants at 91 businesses, which come from 17 different categories. An additional 30 tender vessel owners reside in the Seattle MSA.

All Other Washington

The remainder of Washington (outside of the Seattle MSA) does not have any processing plants, catcher vessels, or catcher/processors associated with the GOA trawl groundfish fishery. There are an estimated 27 fishery support businesses from 12 different categories. An estimated two tender vessel owners also reside in other communities in Washington along with two inshore floating processor managers for a total of 31 estimated GOA trawl groundfish fishery participants.

Oregon

The state of Oregon is estimated to have 67 participants in the GOA trawl groundfish fishery. There are 9 catcher vessel owners that reside in Oregon which are estimated to employ an estimated 32 crew members. Fishery participants also identified 18 fishery support businesses from 12 categories. Eight tender vessels are also owned by residents of Oregon.

All Other U.S. States

All Other U.S. States (outside of Alaska, Washington, and Oregon) do not have any processing plants, catcher vessels, or catcher/processors associated with the GOA trawl groundfish fishery. However, there are an estimated 13 fishery support businesses from 7 different categories. Two tender vessel owners also reside in All Other U.S. States and it is assumed that 2 inshore floating processor managers are also present in this region for a total of 16 estimated GOA trawl groundfish fishery participants.

All Other Countries

The All Other Countries geography category (Outside of the United States) does not include any processing plants, catcher vessels, catcher/processors, or tenders associated with the GOA trawl groundfish fishery, with the exception of one catcher vessel crew member that participated in the survey noted that they are from another country. In addition, there are an estimated four fishery support businesses from four different categories identified by fishery participants which are the total estimated

population of GOA trawl groundfish fishery participants from All Other Countries. While it is to be expected that a subset of processing plant workers and crew members are from other countries, we are unable to estimate *a priori* the number of participants from outside the United States.

Methods

Survey Population

The respondent universe for this study includes those individuals and entities likely to be most directly impacted by anticipated trawl bycatch management related changes to the GOA groundfish fishery management plan, as fully described in the Background section above. Types of respondents included GOA groundfish trawl catcher vessel owners, captains (skippers), and crew; GOA groundfish trawl catcher/processor owners/managers, captains, and crew members (both fishing and processing crew); shoreside processor owners/managers and workers at facilities processing GOA trawl-caught groundfish; inshore floating processor owners/managers and workers that were involved in processing GOA trawl-caught groundfish; GOA groundfish trawl industry-related group representatives; and support business owners/managers that are directly tied to the GOA groundfish trawl fishery through the supply of commercial items and/or services. Each of the target populations was small enough to warrant a census. Descriptions of the number of potential respondents in each respondent category are described above in the Background section and in Table 1.

Data collection methods

Mixed method survey protocol

Data were collected using a multiple methods in order to obtain the highest response rates possible and to make the survey available to a wide variety of respondent types. Fieldwork was completed in Kodiak, Sand Point, King Cove, Seattle, and Petersburg to administer as many of the surveys in person as possible. In these communities, in-person surveys were conducted with available GOA groundfish trawl participants including catcher vessel owners, captains, and crew; shoreside processing plant managers and workers; support service business owners/managers, and tender owners. Given the geographic dispersion of vessel owners, vessel crew, and support services, in-person surveys were not feasible for a sizeable proportion of the overall study population. Where in-person survey administration was not feasible, additional completion methods were made available. These methods included mail-in surveys, an online survey, and completing a survey over the phone with a member of the project team.

Vessel owners and crew for whom contact information was known were contacted via letter and/or email via a modified Dillman *et al.* protocol (2000), described in Table 3 below, and requested to take the online survey. The letter also gave instructions to potential respondents who preferred to participate in the survey in person, over the phone or via a hardcopy version of the survey mailed to them. The online survey directly paralleled the paper, in-person survey. The initial question asked for the respondent's role in the GOA groundfish trawl fishery (e.g., catcher vessel owner, catcher vessel crew, processor manager). This initial screening question isolated the sections of the survey for which each respondent was eligible. Each invitation letter included a unique online survey log-in personal identification number (PIN) that could only be used once by a survey participant. The addressee was

asked to log into the survey website at the URL provided and enter the PIN for access. Once the survey was completed, the PIN could no longer be used. This served to limit survey participants to only those directly engaged in the GOA groundfish trawl fishery and prevented any one participant from filling out multiple online surveys and biasing results.

In an effort to obtain responses from skippers and crew during a key part of their fishing season, packets of hardcopy catcher vessel skipper and crew surveys were given to the shoreside processors for distribution to vessels as they delivered to shoreside processing plants in Kodiak. Packets were also given to the harbormasters in Sand Point and King Cove for distribution to their clients. Each packet was labeled for a particular vessel associated with that processor/port and included five surveys, a sign-in sheet to identify who was filling out the surveys, and information about the purpose of the survey project. It was suggested that the vessel skipper pick up the packet for his vessel and ask his crew to complete the surveys during transit and return a completed packet to a local point of contact upon offloading. Completed packets were then sent back to the project team by a local contact.

To support the confidentiality of this research, no participant names were included on the survey document. Participant names were tracked separately in order to 1) code participants for protection during data analysis, 2) confirm receipt of a survey from each individual, 3) avoid duplication of responses, 4) ensure the distribution of final reports back to research participants, and 5) track the individuals in the future for the post-program implementation impacts portion of the research.

Survey Instrument and Data Processing

The data collection instrument was a modified version of the survey instrument used to collect data in 2010 from Pacific Coast groundfish fishery participants (OMB Control No. 0648-0606). Survey responses were supplemented by interviews and short meetings with industry organizations as needed (see Appendix A for the full survey instrument). The survey instrument was organized into various sections, which was pertinent to some or all of the intended respondents. The survey included the following sections: (a) Demographic Information, (b) Individual Participation, (c) Connections, (d) Gulf of Alaska Groundfish Trawl Bycatch Management Perspectives, (e) Fishermen, (f) Processing Plant Managers and Operators, and (g) Processing Plant Employees.

Demographic Information: These data were elicited to obtain a better description of the unique population of this fishery. Information collected in this section is comparable to United States (U.S.) Census information, but on a finer scale. For example, the U.S. Census does not collect or provide the information at a level to be able to identify a specific population of fishermen, or fishermen as a separate industry. Information about fishermen in the census is aggregated with other types of information representing the agriculture and forestry industries. As a result, it is impossible to describe the demographics of any specific fishing community through the use of U.S. Census data.

Individual Participation: Data from this section were elicited to increase our knowledge of the unique characteristics of specific people in the industry, including individual historical participation in the fishery, family participation in the fishery, the roles individuals play in the fishery, characteristics of their jobs such as work schedules, and a better understanding of where they live versus where they work. Many of these factors may be affected by a change in management. For example, changes in work schedules, standard of living, etc., all may result in social impacts to individuals.

Connections: Data in this section were elicited to provide information and insight on the connections between individuals in the fishery. Questions aimed to identify clear components of the fishery such as important business suppliers and organizations that may be critical to the functioning of the fishery and explore the interconnectedness of participants across multiple communities. The questions inquired about the relationships between individuals in the fishery and the quality of those relationships. Survey questions inquired about the connections between industry members. For example, the survey asked who gets information from whom, and who works with whom, and for what purposes. Scientific literature suggests that when a fishery management regime is changed, such as during a transition from a common quota to a rationalized fishery, the relationships between people change (McCay, 1995; Dunham et al 2013). In addition, the MSA requires knowledge of these relationships. Questions were designed to access this information in a manner to protect the responses of the participants. In addition, questions of this nature were provided with options *not* to answer the question, in the event a survey participant had confidentiality concerns. These data were important to show social changes in the fishery driven directly by the characteristics of the new management system.

Bycatch Management Perspectives: Questions in this section characterize the opinions and perspectives of the individuals in the fishery about the upcoming management change. This section was intended to clearly capture respondents' participation in fisheries management, their level of knowledge of and support for different types of bycatch management programs, and assess respondents' support for program elements that are being considered by the NPFMC for inclusion in the program design. This information serves multiple purposes. First, it identifies industry members' perspectives on what the new management program should include. Second, it allows us to track how perspectives may change over time through subsequent administration of the survey. Finally, these questions were meant to provide a gauge of how well-informed individuals were about the management change, contributing to NMFS' and NPFMC's efforts to improve communication with the public.

Fishermen: This section was designed specifically to query those members of the fishery who are either directly involved in, and have knowledge of, any aspect of the harvest of commercial catch, including vessel and permit owners who are not onboard, as well as captains and crew members on board the vessels. Questions in this section aimed to gather more information about fishermen, how they work, and the different fisheries individuals participate in. For example, data may inform how involvement in the groundfish fishery relates to involvement in the rockfish, sablefish and halibut fisheries. Other information sought included the common gears and gear combinations utilized, what factors contributed to their participation in a single fishery or multiple fisheries, where they fish in relation to where they live, how are they related to individuals with whom they fish, the quality of their relationships with individuals with whom they fish, and how and why they are connected to particular processors.

Processors (At-sea and Shoreside): This section was specifically designed for those members of the fishery who owned or managed processing facilities that received and processed the commercial harvest in the GOA groundfish trawl fishery. Individuals targeted for this section of the survey included shoreside processors, at-sea processors, and inshore floating processors. Questions in this section aimed to gather information about a sector that has historically been very data poor. Data

gathered shed light on the distribution of processors that participate in this fishery, how they obtain catch, their relationships with harvesters, the flow of commercial catch from the fisherman to the consumer, and how and where they market and distribute their products. Information obtained may broaden the understanding of various species that are processed, and the importance of each to the processing businesses.

Processing plant employees (at-sea and shoreside): The questions in this section were crafted for people who work at processing facilities (not in an owner or manager role) that receive and process the commercial harvest in the GOA groundfish trawl fishery. Existing data available for this sector is particularly sparse. Processing facilities in Alaska are well known for their use of foreign labor, some of which is brought in for seasonal work and some is brought in to join a year round labor force, and these populations are not consistently tabulated by the U.S. Census or state agencies. Data gathered elucidate the citizenship or foreign worker status of processing plant employees, the extent to which they rely on social assistance programs, methods of hiring plant employees, the extent to which families rely on processing facilities to support them, the distribution of temporary and permanent workforces in processing facilities that process GOA trawl-caught groundfish, and what options for work processing plant employees have outside of the GOA groundfish trawl fishery.

Data Processing

Survey data from in-person, mail-in, and phone surveys were tabulated and entered into a database using the same online system used for the online surveys. This process resulted in all surveys, whether they were completed in-person, by mail, on the phone, or online, to be entered in a consistent manner. This process reduced data error since the online system coded responses in the same manner across all survey implementation methods. Those questions with open-ended, narrative responses were entered as they were recorded in the field. Non-responses were entered with a specific code to assist in a non-response bias analysis.

In addition to survey responses, the database included the following fields to assist in data analysis:

- Official PIN: A 6 character alphanumeric code unique to each survey. For those respondents who took the survey online, their official PIN matches the PIN used for online survey access. For surveys completed in-person, the official PIN is typically related to the project team member who first processed the survey and the order in which it was received. Official PINs for processor worker surveys generally include a code related to the processing entity for which they were employed.
- Date: The date on which the survey was completed.
- Location: The location of the current residence of the respondent. For those respondents who took the survey in person, the entry in this field was based on in which community the survey was taken. For those respondents who took the survey online, by mail, by phone, or by packet, the location field was based on Question A12 in the survey or on other information gathered by project team members about the respondent (e.g., postmark locations on mailed surveys).
- Sector: The primary sector to which the respondent is related.
- Format: The format of the survey used by the respondent.
- Primary Entity: For fishermen and processor employees, the vessel or processor with which they are primarily associated, respectively. For fishermen, this was based on field notes or on responses to Question E10, for which the first vessel involved in the GOA groundfish trawl

fishery was used for this field. For processor employees (managers and employees), this was based on field notes and/or where the survey was facilitated.

- Secondary Entity: For fishermen, any other vessel to which they are associated that participates in the GOA groundfish trawl fishery. This was based on field notes and/or responses to Question E10.
- Tertiary Entity: For fishermen, any other vessel to which they are associated that participates in the GOA groundfish trawl fishery. This was based on field notes and/or responses to Question E10.
- Primary Entity Location: The location of the primary entity to which the respondent is related. For support service businesses, industry organization representatives, and processor employees, this field is generally similar to "Location." For fishermen, however, this field can differ slightly if the mooring port for their primary GOA groundfish trawl vessel differs from their current residence. For example, a catcher vessel crew member could live in the Seattle MSA region but work on a vessel that moors in Kodiak, Alaska; their "Location" would be Seattle MSA, while their "Primary Entity Location" would be Kodiak, Alaska.
- Primary Entity Location SOW: For fishermen, the estimated mooring location of the vessel based on NMFS confidential fishing data and other records. This field was based on information gathered prior to fieldwork, used generally to estimate level of effort in the scope of work. This field was meant to be used by the project team to track assumptions as to which communities are associated with which vessels.

Data Analysis: Sections A, B, D through G

Data were tabulated and descriptive statistics were developed for each survey question with constrained response selections. Generally, these descriptive statistics include the total number of responses per category, with subtotals provided for each primary sector and geography. Questions answered with more narrative, qualitative information were reviewed for general overall trends in responses. A summary of general trends is presented in the analysis below for these questions. Data processing was completed in Excel and Stata, and data visualizations were completed in Tableau. Some geographies have been aggregated due to confidentiality considerations. For example, most responses from Sand Point and King Cove have been combined with other non-Kodiak Alaskan communities so that results could be discussed.

Data Analysis: Section C

The tabulation and descriptive analysis of many survey questions in Sections A, B, D, E, F, and G were relatively straightforward, but the social network analysis based on data from Section C was more complex.

Section C of the survey asked respondents to name businesses or groups that they depend on for equipment and supplies as well as services that they utilize while working in the commercial fishing or processing industry (Question C1 and Question C2, respectively). Additionally, respondents were asked to note who they depend on for information about fisheries management and any other everyday information important to their work (Question C3 and Question C4, respectively). Respondents were instructed to name the first five that came to mind and to provide the type of supply or service utilized and the location of the business. Social network analysis was completed with UCINet (Borgatti *et al.*

2002) and sociogram visualizations were completed with NetDraw. Sociograms of the social network data were created to visually represent how participants in the GOA groundfish trawl fishery are connected to support service businesses through the exchange of fishery-related goods and services.

Responses were grouped into categories based on the type of good or service provided by the business, and lumped into geographic groupings to provide a regional assessment of support service providers in the fishery. The geographic groupings used mirror those used for the data breakdown of the rest of the survey data. For questions C1 and C2, the full network of all item respondents and all responses are presented. Additionally, five subnetworks are presented for both survey questions. Subnetworks were created to determine the network of businesses utilized by vessels based out of different regions of the GOA, based on the Primary Entity Location field. Regional vessel subnetworks include the Central GOA, Western GOA, West Yakutat, and Oregon/Washington areas. A subnetwork of shoreside processors and their support service businesses was also created for questions C1 and C2. For questions C3 and C4, the full networks of respondents and responses are presented.

The sociograms consist of nodes that represent individual vessels or individual shoreside processors, the nominated businesses, and the ties that connect them. Multiple locations of a single business were included as separate businesses. To visually differentiate which businesses were named by the respondent vessels most often, nodes were sized proportionally based on the number of nominations they received (in-degree centrality). For most networks and subnetworks, businesses that were only named by one vessel (pendants) were dropped from the sociogram so that the sociogram represents the core group of businesses tied to the fishery. Additionally, a color scheme was created to allow visual separation of the categories of support service businesses connected to the fishery. Node shape was used to add a visual geographic grouping component to the sociogram.

Each sociogram has a complementary table that contains descriptive statistics for the network or subnetwork. These include network measures such as degree centrality, which evaluates activity in a network through the number of direct ties each node or actor has with all other nodes in the network (Hanneman and Riddle 2005, Ernoul and Warden-Johnson 2013), illustrating how many times a particular business was nominated by vessels or shoreside processors (in-degree centrality). The mean in-degree centrality of nominated businesses was calculated as well as the median and standard deviation. The maximum in-degree centrality for each subnetwork was also measured, which signifies the maximum number of nominations an individual business received from the vessels.

Results

Response rates

A number of steps were taken in order to maximize response rates. We provided industry members an opportunity to review and contribute to the development of the survey tool. We attempted to test the survey tool with participants in various aspects of the industry, geographically diverse locations within the fishery, diverse roles within the industry, as well as diverse knowledge of the fishery. We worked with industry representatives to determine the best approach to reach study participants. Several industry members served as key informants, gate keepers, and primary contacts to many others in the industry. Communications with key people in the industry indicated that many crew members and processing plant employees spoke a language other than English as their first language and, in many

cases, were not comfortable completing a survey in English. To accommodate this and to increase the response rates with these populations, the survey was translated into Tagalog and Spanish. Additional efforts to increase response rates included in-person survey administration whenever possible (Russell and Schneidler 2013, Rea and Parker 1997, Robson 2002). In these in person surveys, researchers discussed the project with study participants, administered the surveys, answered any questions, code the surveys for anonymity and confidentiality, and collected all the surveys upon completion.

Table 4 presents the overall results of survey responses across all sectors and major geographies by absolute number, and Table 5 presents an approximate percentage of the estimated population surveyed. Overall, the project was able to survey approximately 50% (n = 1,569) of people directly involved in the GOA groundfish trawl fishery. Within specific sectors, 77% (n = 23) of processing managers, 72% (n = 1,269) of processing workers, 56% (n = 46) of catcher-vessel owners, and 46% (n = 103) of support service businesses were surveyed. Within geographic locations, 85% (n = 1,240) of those people directly involved in the fishery in Kodiak were surveyed. Approximately 5% (n = 62) of the estimated number of people in the Seattle MSA directly involved in the fishery were surveyed; however, larger than estimated populations of CV owners, CV skippers/crew, and processor employees were found to be located outside of the Seattle MSA region during fieldwork (i.e., All Other Washington, All Other U.S. States) which offsets the Seattle MSA's relatively low response rate. In some geographies, the number of surveys received (Table 4) exceeded the original estimates for that geography (Table 1), resulting in total response rates over 100%.

Table 6 presents a summary of vessels from which at least one owner, skipper/crew member, or combination completed a survey. This includes summaries for CVs, CPs, inshore floating processors, and tenders. As discussed elsewhere, one CP participated in the survey, representing 5.0% of the total number of CPs involved in the GOA groundfish trawl fishery. One inshore floating processor also participated, representing 50.0% of the inshore floating processors involved in the fishery. Among CVs, 73.6% (n = 67) of vessels were represented by at least one survey from either an owner or skipper/crew member. When limited to CV owners only, 49.5% (n = 45) of vessels were represented by at least one respondent. When limited to CV skippers/crew only, 57.1% (n = 52) of vessels were represented by at least one respondent. Geographically, the level of response was highest proportionally in Kodiak where more vessels were represented by either an owner or skipper/crew member than was projected as possible prior to fieldwork (117.9%, n = 33). The overall response rate for all other Alaskan communities was 77.8% (n = 28) when combining the responses from owners and skipper/crew, and 52.8% (n = 19) and 58.3% (n = 21) when responses from only owners and skippers/crew are tabulated, respectively.

Table 7 presents a summary of estimated total survey refusals and unreachable respondents. Table 8 presents a more detailed breakdown of survey refusals and unreachable respondents by major geography. Because the project team had contact information for all vessel owners, each one was reached and provided with information about the survey and log-in credentials for the online survey. In many instances, vessel owners were also emailed an invitation to participate. As discussed above, CV skippers and crew were more difficult to reach and a larger proportion of this sector was considered unreachable (63.4%, n = 189). The size of the industry organization representative sector is unknown, but all respondents contacted as part of this effort completed a survey and there were no refusals. With regard to shoreside processor managers and workers, industry provided an unprecedented level of access and support for this effort and many more processor managers and processing workers

participated in the survey than was originally planned. Still, some individuals at various processing plants were reluctant to take the survey, while other plants respectfully declined participation citing busy production schedules. Due to the wide geographic distribution of fishery support businesses, many businesses were contacted by phone or email. Of the estimated population, 34.3% (n = 71) refused or did not finish the survey, while 19.8 (n = 41) could not be contacted despite multiple attempts. Geographically, the locations with the highest number of refusals and/or unreachable respondents were those locations most directly involved in the GOA groundfish trawl fishery, including Kodiak, all other Alaskan communities, and the Seattle MSA. Proportionately, the greatest number of refusals and/or unreachable respondents were within the processor worker and CV skipper/crew sectors.

Only one catcher processor vessel and one inshore floating processor participated in the survey. In order to protect the confidentiality of the responses received from individuals associated with these operations, the results are suppressed from this report.

Non-response bias

To better understand why non-respondents did not return the survey and to determine if there are systematic differences between respondents and non-respondents, we asked the non-respondents to participate in a brief interview. Information collected from non-respondents aided in improving the survey implementation and to correct for non-response bias where necessary. As these are preliminary results, we do not attempt to correct for non-response bias in this analysis but are able to briefly describe the observable differences among respondents and non-respondents.

The only sectors for which we currently have data on non-respondents are the owners and crew of catcher vessels and catcher processors. As we only received surveys from one catcher/processor vessel, we do not analyze non-response bias for this sector but will continue to work with the catcher/processor industry to implement a revised survey instrument in the spring of 2015. Three basic metrics were used to assess whether the vessels that responded to the survey are similar to those that did not respond: average crew size on GOA trawl trips, GOA trawl landings, and GOA trawl revenue. The participants were also stratified according to whether an owner responded, a crew member responded, both an owner and a crew member responded, only an owner responded (no crew members responded), and those where only a crew member responded (no owner responded). To test for non-response bias, we used two sample t-tests with equal variances to compare mean values for respondents and non-respondents for each of the variables and groups described above using vessel mean values from 2008-2013. There were a total of 89 vessels in each of these analyses, 65 respondents and 24 non-respondents. The number of vessels included in the non-response bias analysis differed slightly from those presented in Table 6 as there were two vessels included in Table 6 that did not have GOA trawl groundfish landings during the 2008-2013 period and are therefore excluded from the non-response bias analysis.

Results for the difference in crew size among respondents and non-respondents are presented in Table 9. The vessels where both an owner and crew member responded had statistically significantly fewer average crew members (at the 0.05 level) than non-respondents (Table 9). None of the other groups had a statistically significant difference between the average crew size on GOA trawl trips between respondents and non-respondents.

In contrast to the average crew size variable, four groups had a statistically significantly different (at the 0.05 level) amount of GOA Trawl landings than the non-respondents (Table 10). Vessels from which an owner responded, a crew member responded, where both an owner and a crew member responded, or only a crew member responded have a statistically significantly higher amount of landings than those vessels that did not respond. The only group that was not statistically significantly different was the group of vessels from which only the owner responded. This suggests that those respondents who participated in our survey effort are more active in the GOA trawl fishery than those vessels that did not respond.

Similar to the GOA trawl landings results, the same four groups that had a statistically significantly higher amount of GOA trawl landings also had a statistically significantly higher amount of GOA trawl revenue than vessels that did not respond (Table 11). This again suggests that those respondents who participated in our survey effort are likely to be more active in the GOA trawl fishery than those that did not respond.

Survey Results

The following sections describe a summary of the preliminary results found in this study broken out by sector.

Catcher vessel owners

Demographics

Section A of the survey asked respondents to provide demographic information about themselves. Question A1 asked about gender. A full 95.7% of CV owner respondents reported that they were male (n = 85) (Tables 12A, Figure 1B). The average age of respondents in this sector was 57.0, with the largest share of respondents falling into the 50-59 age grouping (44.4%, n = 20) followed by the 60 to 69 grouping (26.7%, n = 12) (Question A2) (Table 13A, Figure 2B). However, this pattern was not consistent across regions. All Other U.S. states grouping did not have any CV owners in the 50-59 age range, but had 1 young CV owner in the 30-39 age range, 1 CV owner in the 60-69 age range, and 2 in the 70-79 age range (Tables 13A, Figure 2C). Kodiak also had more young owners with 2 in the 30-39 age range, 3 in the 40-49 age range, 6 in the 50-59 age range, and only 1 CV owner in each of the 60-69 and 70-79 age ranges.

Question A3 (Table 14A, Figure 3B) asked respondents about the highest level of education respondents had achieved. CV owner respondents most often reported having completed some college or vocational schooling without a degree (34.8%, n = 16). The next highest educational attainment was shared among three different levels with 8 respondents each (17.4%) and includes elementary education, high school diploma, and attainment of a Bachelor's degree. Attainment of Bachelor's degrees was most concentrated in CV owners located in all other Alaska (n = 3).

Questions in Section A also asked respondents about their race (Question A5), ancestry (Question A6), and whether they considered themselves to be Hispanic or Latino (Question A4). None of the CV owner respondents reported that they were Hispanic or Latino (Table 15A, Figure 4B). For Question

A5, the majority of CV owner respondents reported themselves as White (84.8%, n = 39), while 7 respondents identified themselves as American Indian or Alaska Native and 1 responded reported "other" (Table 16A, Figure 5B). The largest share of respondents who identified as American Indian or Alaska Native were located in the All Other Alaska region (n = 7) (Table 16B, Figure 5C). When asked about ancestral origin, 37.0% of CV owner respondents described themselves as 'other' (n = 17) while 34.8% reported they were English (n = 16), 34.8% reported they were German (n = 16), and 26.1% reported they were Norwegian (n = 12) (Question A6) (Table 17A, Figure 6B).

Section A also asked respondents to report whether or not they were married (Question A7) and if their spouse participated in the fishery in any aspect (Question A7a). For the CV owner sector, 78.3% of respondents (n = 36) said they were married (Table 18A, Figure 7B). Of the respondents who reported being married, 63.9% noted that their spouse also participates in the fishing industry to some degree (n = 23) (Table 19A, Figure 8B). There was a regional concentration of spousal participation in the industry in Kodiak as the spouses of 8 of the 9 (88.9%) married CV owners also participated in the fishery and in the All Other Washington grouping as the spouses of 4 of 5 (80%) of the married CV owners also participated in the fishery (Table 19B, Figure 8C). This differs from the Seattle MSA where only 2 of 4 (50%) of the spouses of CV owners also participated in the fishery.

Questions A8 through A9b asked respondents about their living arrangements. For CV owner respondents, 89.1% of respondents stated they lived in a housing unit by themselves or with others (n = 41) and the other 5 respondents reported "other" (Table 20A, Figure 9B). These respondents were then asked to report how many people there were living in the household including themselves, and whether they owned the residence, rented it, or lived with relatives. CV owner respondents primarily reported owning their residence (97.6%, n = 40) (Table 22A, Figure 11B). The average household size for CV owner respondents was 2.5 (Table 21A, Figure 10B). A full 51.2% of respondents reported having two people total in their household (n = 21). The highest average household size was in all other U.S. States at 2.8 and Kodiak at 2.7 with lows in the Seattle MSA (2.3) and Oregon (2.0) (Table 21B, Figure 10C).

Respondents were asked to report the percentage of their combined family income that came from their participation in commercial fishing or processing activities (Question A10). For the CV owner sector, 89.1% of respondents reported that 76 to 100% of their combined family income came from participation in the industry (n = 41) (Table 23A, Figure 12B). This response was concentrated for CV owners located in Kodiak (n = 13), all other Washington (n = 6) and Oregon (8 of the 8 responses) (Table 23B, Figure 12C). Regionally, 18.2% of all other Alaska respondents in the sector reported that 10 to 25% of their combined family income came from the fishing industry (n = 2). CV owner respondents also reported that 65.2% get paid by owner share (n = 30), 63.0% get paid by a percentage of the catch (n = 29), and 10.9% get paid by salary (n = 5) (Question A11) (Table 24A, Figure 13B).

Individual participation

Section B of the survey focused on details of individual participation in the industry with questions such as the length of time in the industry, role, characterization of employment, and wellness factors related to employment. To better understand the variety of ways a person may participate in the commercial fishing industry, Question B1 asked respondents to describe their role. For respondents categorized as CV owner sector participants, 78.3% indicated that they were a groundfish LLP holder

(n = 36), 73.9% indicated they were a catcher vessel owner (n = 34), 71.7% indicated they were a catcher vessel captain/operator (n = 33), and 41.3% indicated they were a catcher vessel co-owner (n = 19) (Table 25A, Figure 14B). A few CV owner participants also marked themselves as a vessel owner or operator (n = 11). CV owner participants that reported multiple roles in the industry were more prevalent in Kodiak (Table 25B, Figure 14C).

Question B2 asked respondents whether or not they or their family historically participated in commercial fishing or processing activities. For CV owner sector respondents, 71.7% responded yes (n = 33) (Table 27A, Figure 16B). Specifically, the number of generations the families of CV owner sector respondents had participated in the commercial fishing industry was most commonly 3 (38.2%, n = 13) (Question B2a) (Table 28A, Figure 17B). The average number of generations was 2.7 for CV owner respondents. A total of five respondents from all other Alaska, four from Kodiak, and three from Oregon reported that three generations of their family had participated in the commercial fishing industry (Table 28B, Figure 17C).

Respondents in the CV owner industry most often reported that they started working in the industry between the ages of 11 and 15 (31.1%, n = 14) (Question B3) (Table 29A, Figure 18B). The average start age for the sector as a whole was 15.4. The average age respondents started working in the commercial fishing industry in the Kodiak region was lower, at 12.4 (Table 29BA, Figure 18C). The average total years that CV owner respondents reported having worked in the commercial fishing industry was 39.8 (Question B4) (Table 30A, Figure 19B). The average number of years was higher in the All Other Alaska grouping (42.6) and the all other Washington (41.7) compared with Kodiak (38.5) (Table 30B, Figure 19C). Respondents were then asked to report how many years they had specifically worked in the Gulf of Alaska groundfish trawl fishery (Question B5). Respondents from the CV owner sector reported an average of 23.1 years (Table 31A, Figure 20B). Of the 12 CV owners in Kodiak, 11 of them have been active in the Gulf of Alaska groundfish trawl fishery for at least 16 years. Similarly, 8 of the 10 CV owners from the All Other Alaska grouping and 8 of 8 CV owners from Oregon have been active in the Gulf of Alaska groundfish trawl fishery for over 16 years (Table 31B, Figure 20C).

Question B6 asked respondents to list the top 5 cities/towns/harbors out of which they work. For the CV owner sector, 80.4% of respondents listed Kodiak (n = 37), 43.5% listed Sand Point (n = 20), 32.6% listed Dutch Harbor (n = 15), while only 4.3% listed the Seattle MSA (n = 2) (Table 32A, Figure 21B).

Question B9 asked respondents whether they worked multiple jobs and if so, what type of employment was conducted. Of the CV owner sector respondents, 67.4% reported they only had one job (n = 31) (Table 33A, Figure 22B). The prevalence of this response was generally the same across all geographic groupings (Table 33B, Figure 22C). When asked if they maintained a job outside of the commercial fishing or processing industry, 84.8% of respondents in this sector said no (n = 39) (Question B10) (Table 34A, Figure 23B). Looking at the regional breakdown of responses, 84.6% of Kodiak respondents (n = 11), 90.9% of All Other Alaska respondents (n = 10), and 100% of Oregon residents (n = 8) reported that they do not maintain a job outside of the commercial fishing industry (Table 34B, Figure 23C).

The last question of Section B posed a series of Likert scale wellness questions to respondents (Question B11). The scale had four choices: poor, fair, good, and excellent. When asked about job

satisfaction, 62.2% of CV owner sector respondents (n = 28) reported that it was excellent and 28.9% reported that it was good (n = 13) (Table 35A, Figure 24B). For compensation, 45.5% of CV owners responded that it was good (n = 20) while 29.5% responded that it was excellent (n = 13), and 22.7% reported that it was fair (n = 10). In contrast, for job stability, 29.5% of item respondents reported that it was excellent (n = 13) and 22.7% said it was good (n = 10), 29.5% said it was fair (n = 13), and 18.2% said it was poor (n = 8). The vast majority of CV owner sector respondents reported their amount of compensation was either good (38.6%, n = 17) or excellent (45.5%, n = 20). Similarly, the majority of CV owners responded that their standard of living was good (53.3%, n = 24) or excellent (40.0%, n = 18). Nearly all of the CV owners responded that their relationship with co-workers was either good (48.9%, n = 22) or excellent (48.9%, n = 22).

Connections

For Question C5, respondents were asked to identify the ways in which they get information related to their work in the fishery. For CV owner respondents, 75.0% indicated that information was passed by word of mouth (n = 33), 75.0% reported that they got information over the internet (n = 33), and 88.6% said information was passed over the phone (n = 39) (Table 40A, Figure 29B).

A number of questions requested information from respondents about the extent of their social networks in the fishery. Respondents were asked to name the businesses that they depend on for equipment and supplies they utilize while working in the commercial fishing or processing industry (Question C1). The network of all item respondents including the support service businesses nominated by vessels, shoreside processors, and surveyed support service businesses is presented in Figure 25A. The network consists of a total of 369 nodes that are connected by 700 ties (Table 36A). There were a total of 272 businesses that were reported as responses. These businesses were organized into categories based on the type of equipment or supply that they were reported to provide. There were 17 total categories used (Table 2), which are represented by different colors on the sociogram. The categories ranged from electronics to refrigeration to fishing equipment providers. Of the 272 businesses that were nominated, 85 were nominated by at least two respondents (i.e. they had an in-degree centrality of at least 2). The business with the greatest number of nominations was a fishing equipment provider that was named by 35 different respondents. The mean number of nominations for businesses that had at least two nominations was 6.04 with a standard deviation of 6.36.

Respondents were asked to name the businesses they depend on for services they utilize while working in the industry (Question C2). The sociogram of the full network is presented in Figure 26A. A total of 306 nodes are in the network, connected through 469 ties (Table 37A). There were nominations of 214 unique businesses. Of these, 77 received nominations from more than one entity. The businesses nominated were categorized according to the type of service they were reported to provide. There were 16 total categories used, which are represented by different colors on the sociogram. The categories included, for example, metal processing (e.g., welding), shipyard and harbor services, and engine and propulsion work. The maximum number of nominations received by a business was a metal processing business that was nominated by 17 vessels. The mean number of nominations (in-degree centrality) for businesses was 4.31 with a standard deviation of 3.37.

Respondents were also asked to name people, organizations, or businesses that they depend on for information about fisheries management (Question C3). The network of all item respondents including

the support service businesses nominated by vessels, shoreside processors, and surveyed support service businesses is presented in Figure 27. There were a total of 200 nodes in the network that were connected through 375 nominations (ties) (Table 38). Of these nodes, there were a total of 87 unique nominees. A subset of 38 of these was nominated by at least two unique entity respondents. The nominees were grouped into categories according to their role; categories included government and management, industry associations, and media. The maximum number of nominations received by one group was 54 and the group was a government and management entity. The mean number of nominations received for entities nominated more than once was 8.58 with a standard deviation of 13.25.

The final social network question was Question C4 which asked respondents to name anyone else that they relied on for other everyday information to assist them in their work in the industry. The network includes 161 nodes connected through 221 ties (Table 39). The sociogram is presented in Figure 28. A total of 84 nodes were groups nominated by respondents, which included roles such as media, government and management, industry associations, and weather providers. There were 27 entities that were nominated by more than one unique respondent. The mean number of nominations for this latter group was 6.07 with a standard deviation of 5.72. The entity with the most nominations received 20 nominations and falls into the government and management category.

Subnetworks of vessels and their nominations were created for Questions C1 and C2 with 4 different regions represented below in separate sociograms. Additionally, a subnetwork for shoreside processor respondents was created for both questions.

Central Gulf of Alaska vessels

The subnetwork sociogram of the vessels based out of Kodiak and the gear and equipment providers they named is included in Figure 25B. The subnetwork included a total of 60 nodes that were connected by 91 ties (Table 36B). Kodiak-based vessels nominated a total of 41 unique businesses. Of these 41 businesses, 17 were nominated by at least two vessels. These 17 businesses fell into 10 categories of supplies, including those related to engines and propulsion and fuel and lubricants. The businesses nominated that were based out of Kodiak covered eight different support service business categories. The business that was nominated the most frequently was a fishing equipment provider based in Kodiak that was named by seven different vessels. The Kodiak-based vessels reported utilizing Kodiak-based businesses most frequently (12 of the 17 businesses). The other businesses named were located either in other communities in Alaska, the Seattle area, or in Oregon. The mean number of nominations support service businesses received was 3.94 with a standard deviation of 1.95.

The subnetwork of vessels based out of Kodiak and their service providers is included in the sociogram in Figure 26B. A total of 96 nodes make up this subnetwork, and they were connected by 159 nominations (Table 37B). There were 69 businesses named by Kodiak-based vessels as service providers. A subset of 27 of these was named by more than one vessel. Two businesses were nominated by 11 different vessels, one is a hydraulic service company and the other is a metal processing company. The mean number of nominations of the 27 business subset was 4.33 with a standard deviation of 2.83. Of these 27 businesses, 19 were located in Kodiak while 6 were in Oregon and 2 were in the greater Seattle area. The Kodiak-area businesses included several (n = 6) that fall into the metal processing service category, though three had the most nominations. The Oregon-based

companies nominated included shipyard and harbor type service businesses as well as refrigeration service businesses.

Western Gulf of Alaska vessels

The sociogram for the subnetwork of vessels based out of the Western Gulf of Alaska, and the equipment suppliers they named is presented in Figure 25B. The subnetwork included 69 nodes that were connected by 105 ties (Table 36B). Of these nodes, 49 were nominated support service businesses. The number of businesses nominated by at least two unique vessels was 25. The business nominated the most was a miscellaneous supplies provider in the All Other Alaska grouping. Other categories of businesses nominated by Western Gulf of Alaska based vessels were grocery and office suppliers and hydraulics companies. The businesses nominated from the All Other Alaska grouping included primarily grocery and miscellaneous suppliers. Of the 25 businesses nominated more than once, there were 7 businesses located in the All Other Alaska grouping and 14 in the greater Seattle area. A total of six out of the seven fishing equipment businesses named by these vessels were located in the Seattle area. The Western Gulf of Alaska based vessels only named one supplier based out of Kodiak that they rely on for equipment and supplies. The mean number of nominations received by a support service business was 3.24 with a standard deviation of 1.74.

The subnetwork of vessels based out of the Western Gulf of Alaska and the service providers they named is illustrated in the sociogram in Figure 26B. This subnetwork incorporated 60 nodes connected through 80 nominations (Table 37B). A total of 42 of the nodes were nominated businesses, and 18 were nominated by more than one unique vessel. The businesses nominated were predominantly located in the Western Gulf of Alaska (11 of the 18). The most frequently nominated business was a metal processing service-oriented business with seven nominations. The Western Gulf of Alaska businesses included those providing miscellaneous services and engine and propulsion service providers. The mean number of nominations for the businesses that were nominated by more than one vessel was 3.11 with a standard deviation of 1.75. There were also six businesses in this subnetwork that were located in the greater Seattle area; these businesses included ones that service electronics and those that provide shipyard and harbor services.

West Yakutat vessels

The subnetwork for vessels based out of ports bordering the West Yakutat area of the Gulf of Alaska included 30 total nodes that were connected by 27 ties (Table 36B). The sociogram is shown in Figure 25B. There were 26 gear suppliers nominated by the vessels in this grouping, only 1 of which was nominated by more than one vessel. That business was an engines and propulsion-related business located in the greater Seattle area. Due to the low number of nominations per business, the sociogram for the West Yakutat region includes pendant nodes. The mean number of nominations of all nominated businesses was 1.04. The nominated businesses were most frequently located in the greater Seattle area (12 of the 27 companies), 8 were located in all other Alaska. Half of these businesses fell into the fishing equipment category of supply providers.

The subnetwork for vessels based out of West Yakutat area ports and their service providers included 24 nodes connected through 21 nominations (Table 37B). The sociogram is shown in Figure 26B. All nodes were left in this sociogram due to the low number of nominations per business in this

subnetwork. There were 21 businesses named by West Yakutat respondents. A total of eight of these were located in the greater Seattle area and six were located in other Alaska locations. Categories of support service businesses were spread across these groupings, Oregon, and the Central Gulf of Alaska.

Oregon and Washington vessels

The subnetwork for vessels based out of Oregon or Washington consisted of 19 nodes connected by 15 nominations (Table 36B). The sociogram is shown in Figure 25B. There were 15 businesses that were nominated as gear and equipment suppliers for vessels based out of Oregon or Washington. All businesses nominated received only one nomination, therefore the sociogram includes the full subnetwork. The businesses nominated were spread out across all of the geographic groupings, from Seattle to Oregon to Kodiak. The fishing equipment providers that were nominated were primarily located in the All Other Alaska grouping (3 of the 5 companies in the category). The engine and propulsion companies nominated were located in Oregon.

The subnetwork for vessels based out of Oregon and Washington and their service providers is provided in Figure 26B. There were 11 nodes connected through 8 nominations (Table 37B). Of these nodes, eight were service providers which were all only nominated by one vessel. There were two engine and propulsion service providers named that were based out of Oregon while two shipping and transportation companies were nominated based out of the greater Seattle area. Of the eight nominated businesses, three were located in the greater Seattle area. A total of five of the eight companies nominated were Seattle-area businesses and the other three were Oregon-based companies.

Shoreside processors

A separate subnetwork was created from the responses of the shoreside processing respondents for their equipment suppliers; the sociogram is shown in Figure 25B. There were a total of 55 nodes connected through 61 ties (Table 36B). There were 44 businesses that were nominated by at least one shoreside processor; eight of those businesses were nominated by more than one processor. The mean number of nominations of these latter businesses was 3.13. One support service business was nominated by seven different shoreside processors, a company that falls into the packaging category of suppliers.

The service providers nominated by the shoreside processors are shown in the sociogram in Figure 26B. The subnetwork included 63 nodes that were connected through 61 nominations (Table 37B). A total of 51 of these nodes were businesses, and a subset of 8 was nominated by at least two shoreside processing locations. The maximum number of nominations was 3, which two different businesses specializing in shipping and transportation received. Half of the businesses nominated by more than one unique entity fell into the shipping and transportation category. The businesses named by this subnetwork were predominantly located in the Central Gulf of Alaska, with other businesses located in other Alaskan regions or the Seattle area.

Gulf of Alaska groundfish trawl management perspectives

Section D focused on the new bycatch management program under development by the NPFMC. Question D1 sought to gauge the ways in which people may participate in the NPFMC management process. For the CV owner respondents, the majority reported that they attend Council meetings (75.6%, n = 34), 57.8% read the Council's newsletter (n = 26), 53.3% provide oral public testimony (n = 24), and no respondents reported not participating in the Council process at all (Table 41A, Figure 30B). Regionally, 92.3% CV owners from Kodiak (n = 12), 87.5% of CV owners from Oregon (n = 7), 63.6% of CV owners from All Other Alaska (n = 7), and 50% of CV owners from the Seattle MSA (n = 2) stated that they attend Council meetings in person (Table 41B, Figure 30C).

Respondents were asked in Question D2 to rate how well informed they perceived themselves to be on the discussions of the developing bycatch management program for the Gulf of Alaska groundfish trawl fishery. CV owner sector respondents most often rated themselves as reasonably informed (40.0%, n = 18), 35.6% responded that they were highly informed (n = 16), and 20.0% indicated that they were somewhat informed (n = 9) (Table 42A, Figure 31B). Looking at the regional breakdown of responses, CV owner sector respondents from the All Other U.S. States grouping had the highest share of CV owners who rated themselves as either reasonably informed (75%, n = 3) or highly informed (25%, n = 1), followed by Kodiak with 46.2% of CV owners rating themselves as reasonably informed (n = 6) and 38.5% responding that they are highly informed (n = 5) compared to the other geographic groupings (Table 42B, Figure 31C).

Question D3 asked respondents about any plans they may have for the next five years regarding their participation in various fishing industry sectors. Of the CV owner industry respondents, 80.0% (n = 36) indicated that they planned to keep their current activity levels relative to the Gulf of Alaska groundfish trawl fishery the same and 64.4% (n = 29) stated that they expected to keep their current activity levels in all other fisheries (Table 43A, Figure 32B). There were also 28.9% of CV owner respondents who reported they were planning to increase their current activity levels in the Gulf (n = 13).

Respondents were asked whether they support the development of a bycatch management program for the Gulf of Alaska groundfish trawl fishery that includes a catch share element (Question D4). For the respondents from the CV owner sector, 79.5% support the implementation of catch shares while 13.6% (n = 6) respondents reported that they do not support catch shares. When asked to whom the catch share privileges should be allocated, 64.6% (n = 28) support allocating catch shares to individuals and 50% (n = 22) support allocating catch shares to cooperatives. None of the CV owners that responded to the survey thought that catch shares should be allocated to communities (Table 44A, Figure 33B). Respondents from the Seattle MSA area most frequently reported that cooperatives should be allocated privileges (75.0%, n = 3) (Table 44B, Figure 33C).

Question D5 followed up on Question D4 and asked respondents to select reasons from a list as to why they do or do not support a catch share type bycatch management program. The highest percentage of CV owners responded that it would increase product quality (77.3%, n = 35), followed by reduce bycatch (75.5%, n = 34), increase in business flexibility (73.3%, n = 33), increase in safety (73.3%, n = 33), lengthen fishing seasons/eliminate the race for fish (71.1%, n = 32), increase individual vessel accountability (71.1%, n = 32), stabilize income (68.9%, n = 31), increase flexibility in PSC (66.7%, n

= 30), and benefit business planning (66.7%, n = 30) (Table 45A, Figure 34B). In contrast, 26.7% stated that catch shares will result in increased costs (n = 12), 28.9% predicted decreases in income (n = 13), 20.0% thought that crew members would be negatively affected (n = 9), 15.6% anticipated that they will force a shift into other fisheries (n = 7), and 15.6% thought the program would reward vessels with a history of high PSC (n = 7).

In Question D6, respondents were asked to rate their support or opposition to possible program elements for a bycatch management or catch share program for the Gulf of Alaska groundfish trawl fishery on a scale of strongly oppose, somewhat oppose, neutral, somewhat favor, to strongly favor. For the CV owner respondents, there was strong opposition for the NPFMC to create a set aside (percent of the TAC) for conservation, communities, and/or economic hardship (69.8% of item respondents, n = 30), to allocate a portion of the total quota pool to communities (90.9% of item respondents, n = 40), to communities only (95.5% of item respondents, n = 42), and to a limit on the duration of privileges (e.g. number of years) (68.2% of item respondents, n = 30) (Table 46A, Figure 35B). The CV owner respondents favored potential elements including that the program should be a cooperatives only program (strongly favor 25.0%, n = 11, somewhat favor 25.0%, n = 11), that the program should be an IFQ program (strong favor 31.1%, n = 14, somewhat favor 28.8% of item respondents, n = 13), and that the western and central GOA should be managed separately (strongly favor 46.5%, n = 20, somewhat favor 18.6%, n = 8). The results were mixed for the potential program elements that included the program being a combination of IFQ and cooperatives and that the western and central GOA should be combined into one program.

Additional potential program elements are presented in Table 46A and Figure 35B. CV owners also strongly opposed that catcher/processors should be allowed to purchase quota from catcher vessels (77.3% of item respondents, n = 34), annual quota pound should be auctioned (90.1%, n = 40), quota shares should be auctioned (88.6%, n = 39), that processor quota that needs to be matched with harvester quota should be included (68.2%, n = 30), that the program should include processing worker quota share (90.1%, n = 40), and that only PSC quota shares should be allocated (62.8%, n = 27). CV owners moderately opposed the following program elements, quota shares should be based on bycatch or PSC history (strongly oppose 37.2%, n = 16, somewhat oppose 18.6%, n = 8), shares should allocated based on investment (strongly oppose 37.2%, n = 16, somewhat oppose 11.6%, n = 5), the program should include active participation requirements (strongly oppose 40.9%, n = 18, somewhat oppose 22.7%, n = 10), the program should include caps on annual quota pound lease rates (strongly oppose 31.8%, n = 14, somewhat oppose 15.9%, n = 7), the program should include cost recovery of up to 3% of landings value (strongly oppose 31.0%, n = 13, somewhat oppose 16.7%, n = 7), the program should include the longline and pot gears (strongly oppose 48.8%, n = 21, somewhat oppose 2.3%, n = 1), and the program should include skippers/crew shares (strongly oppose 38.6%, n = 17, somewhat oppose 25.0%, n = 11). The CV owners favored that quota shares be allocated based on catch history (strongly favor 58.5%, n = 24; somewhat favor 19.5%, n = 8), that quota should be allocated based on years of experience in the fishery (strongly favor 38.1%, n = 16, somewhat favor 21.4%, n = 9), that quota should be freely transferable (strongly favor 58.1%, n = 25, somewhat favor 14.0%, n = 3), the program should allow the leasing of annual quota pounds during the first two years of the program (strongly favor 30.2%, n = 13, somewhat favor 20.9%, n = 9), and that the program should include sideboards in other non-catch share fisheries (strongly favor 30.2%, n = 13, somewhat favor 20.9%, n = 9). CV owner responses were mixed as to whether the program should allow the selling of quota shares in the first two years of the program.

Fishermen

Questions in Section E focused on fishery participation and the relationships between people who fish as well as questions on what happens to the fish after it's caught. Question E1 asked respondents to rank in order of importance the fisheries that they participate in on a regular basis. A list of fisheries divided out between North Pacific and Pacific Coast fisheries was provided for respondents to use. Some respondents used one ranking system for both geographic groupings of fisheries while other respondents created separate rankings; therefore, the percentages presented for this question are based on the number of responses instead of the number of respondents. For the CV owner respondents, 58.3% ranked Gulf of Alaska groundfish trawl first (n = 28), 23.3% ranked the fishery second (n = 10), and 12.8% ranked the fishery as third (n = 5) (Table 47, Figure 36B). The second fishery that CV owners ranked most important was salmon at 16.7% (n = 8), and 8.3% of CV owner responses ranked the halibut/sablefish IFQ as the most important (n = 4). The fishery most frequently ranked as second was GOA groundfish trawl at 23.3% (n = 10) followed by the Central Gulf of Alaska rockfish ranked as second frequently (20.9%, n = 9) as well as third (10.3%, n = 4). Respondents could also rank Pacific Coast fisheries. CV owners rated the Pacific whiting fishery as most important (6.3%, n = 3) or third most important (10.3%, n = 4) for themselves most often.

Question E2 directed respondents to choose the most common species they had commercially fished over the last 5 years from a provided list. The top species indicated by CV owners were Pacific cod (97.8%, n = 44), pollock (95.6%, n = 43), sablefish (57.8%, n = 26), big skates (53.3%, n = 24), and shallow flatfish/rock sole (51.1%, n =23) (Table 48B, Figure 37B). For the All Other Alaska grouping, 100.0% also said they participated in salmon fisheries (n = 10) and 70.0% participated in the Tanner crab fishery (n = 7) (Table 48C, Figure 37C).

In Question E3, respondents were asked whether they had changed the species they targeted within the last 5 years. For CV owners, only 20.5% reported that they had changed species (n = 9) (Table 49A, Figure 38B). For the respondents from Petersburg, 33.3% reported that they had changed the species they targeted within the last 5 years (n = 1) (Table 49B, Figure 38C). And over the last 5 years, CV owners reported having predominantly fished with a pelagic trawl (97.8%, n =44) or non-pelagic trawl (95.6%, n = 43), while 55.6% fished with pot gear (n = 25), 37.8% fished with purse seine gear (n = 17), and 31.1% fished with longline gear (n = 14) (Question E4) (Table 50A, Figure 39B). There were 3 vessels from Petersburg, Sand Point, and the Seattle MSA that each fished using purse seine gear, which was the largest number from any region (Table 50B, Figure 39C).

For Question E5 and E6, respondents were asked to indicate any of the fisheries that they reported participating in that they were planning on continuing and any that they were planning on stopping within in the next five years. Nearly all respondents reported that they planned on continuing the fisheries in which they were currently participating (Table 52A, Figure 40A). CV owners indicated a number of fisheries that they would potentially be interested in pursuing, but only west coast shrimp received more than one response (n = 2) (Question E7a) (Table 53A, Figure 41B).

Respondents were directed to indicate their relationship to others that work on the vessel or vessels on which they fish commercially (Question E8). CV Owners most frequently were related to at least one individual (51.2%, n =22), followed by friends (37.2%, n = 16), business partners (34.9%, n = 15), and other (25.6%, n = 11) (Table 54A, Figure 42B). King Cove and Sand Point respondents were most

likely to report having a family member on the vessel and Seattle MSA respondents were least likely (Table 54B, Figure 42C).

Question E9 asked respondents to approximate how many people they worked with on the most recent Gulf of Alaska groundfish trawl vessel. The average number of people, including the respondent, for CV owners was 4.5 (Table 55A, Figure 43B). The average reported by respondents based out of Kodiak was 4.9 while the average for All Other Alaska respondents was 3.5 (Table 55B, Figure 43C). When asked whether these were typically the same people year after year, 86.4% of CV owners said yes (n = 38) (Question E11) (Table 56A, Figure 44B). Another 75.0% reported that they worked with the same processor every year (n = 33), 72.7% reported they worked with the same service businesses (n = 32), and 63.6% reported they work with the same group of vessels (n = 28). Regionally, CV owners in Kodiak, King Cove, Petersburg, and the Seattle MSA indicated that 100% of them work with the same crew year after year while Sand Point CV owners reported that they don't typically work with the same crew (66.6%, n = 2) (Table 56B, Figure 44C).

Respondents were then asked to rate the quality of their relationships with people of various roles on the most recent groundfish trawl vessel on which they worked (Question E12). CV owners generally rated their relationships as being positive, this included with the captain or operator (59.1% rated the relationship as positive, n = 26, 36.4% reported it was themselves/not applicable), crew members (88.6% said positive, n = 39), and the vessel owner (69.8% reported self/not applicable and 30.2% rated as positive, n = 13). CV owners were less favorable in their ratings of their relationship with the observer (27.9% reported neutral and 62.8% reported positive relationships; n = 12 and n = 27 respectively) (Table 57A, Figure 45B).

Question E14 directed respondents to indicate what items are taken into consideration when deciding where to sell the catch, based on a list of responses provided. For CV owners, 60.0% indicated that there was a mutual agreement with processor/buyer (n = 27), 57.8% noted that one item was a longstanding relationship with plant personnel (n = 26), while only 35.6% responded that they deliver based on the best price/market (n = 16) (Table 58A, Figure 46B). Question E15 asked how many processors or buyers are located in the port to which the respondent typically delivers. The most common response for CV owners was 7 (33.3% of respondents, n = 15) (Table 59A, Figure 47B). When asked about whether or not they believed they had a choice as to where their fish are sold (Question E16), 57.8% of CV owners said yes (n = 26) and 40.0% said no (n = 18) (Table 60A, Figure 48B). Question E17 directed respondents to indicate what factors limited their choice of where to sell their GOA trawl-caught groundfish, based off a provided list. For CV owners, 48.9% reported that there was a limited number of processors (n = 22), 40.0% indicated that it was the market (n = 18), 26.7% indicated that it was the location of the processor (n = 12), and 24.4% said that the processor would only buy some species (n = 11), while 17.8% said that there were no limitations (n = 8) (Table 61A, Figure 49B)

Respondents were asked to rate the quality of their relationships with people in specific categories related to the selling of trawl-caught GOA groundfish (Question E18). For CV owners, 82.2% rated their relationship with shoreside processors as positive (n = 37) while only 11.1% rated their relationship as negative (n = 1) (Table 62A, Figure 50B). And 56.4% rated their relationship with tenders as positive (n = 22) while 28.2% reported that it was themselves or not applicable (n = 11). Few respondents indicated that they had a relationship with a catcher/processor (78.4% responded not

applicable, n = 29) or an inshore stationary floating processor (62.2% responded not applicable, n = 23).

Catcher vessel skippers and crew

Demographics

Section A of the survey asked respondents to provide demographic information about themselves to generate information on the unique characteristics of participants in the Gulf of Alaska groundfish trawl fishery. Question A1 asked about gender. For the respondents from the CV skipper and crew category, 100% reported they were male (n = 102) (Table 12A, Figure 1B). Respondents were also asked about their age (Question A2). For CV skipper and crew respondents, the average reported age was 40.9 (Table 13A, Figure 2B). For this group of respondents, age was relatively distributed across a couple of different age groups. There were 28.7% of respondents who were 50 to 59 (n = 29), and 42.8% that were 30 to 39 (n = 25), and 19.8% that were 21 to 29 (n = 20).

For Question A3, respondents were asked about the highest level of education they had attained. For CV skippers and crew, the most frequent response was a high school diploma (46.1% of item respondents, n = 47) (Table 14A, Figure 3B). An additional 30.4% of respondents reported that they had completed some college or vocational schooling but had not gotten a degree (n = 31). CV skippers and crew from Kodiak were equally likely to have a high school diploma as they were to have done some college-level schooling (n = 12) (Table 14B, Figure 3C).

Questions A4, A5, and A6 asked respondents about their race (Question A5), ethnicity (Question A6), and whether they considered themselves to be Hispanic or Latino (Question A4). Among respondent CV skippers and crew, 5.6% reported themselves as Hispanic or Latino (n = 5) (Table 15A, Figure 4B). These respondents were located across the all other Alaska geographic grouping (n = 2), the Oregon grouping (n = 1), and the Kodiak grouping (n = 1) (Table 15B, Figure 4C). When asked about their race (Question A5), CV skippers and crew most frequently reported themselves as White (78.6%, n = 77) (Table 16A, Figure 5B). The second most frequently reported race was American Indian or Alaska Native (16.3%, n = 16). The self-reported American Indians or Alaska Natives were reported almost entirely from the all other Alaska geographic grouping (81.3%, n = 13) (Table 16B, Figure 5C). Question A6 asked respondents to report their ethnic origin. CV skippers and crew reported being of English ancestry 32.0% overall, another 32.0% reported themselves as other (n = 31) (Table 17A, Figure 6B). Additionally, 30.9% of item respondents marked that they were of German ethnic origin (n = 30). A total of 13 of the 31 respondents from the All Other Alaska grouping reported that they were Aleut (Table 17B, Figure 6C).

Question A7 and A7a focused on marital status and whether the respondent's spouse also participated in the commercial fishing industry in some way. For CV skippers and crew, 45.1% noted that they were married (n = 46), and 38.2% reported themselves as single (n = 39) (Table 18A, Figure 7B). That trend was reversed in the All Other Alaska grouping where 48.4% of respondents said they were single and 35.5% reported themselves as married (Table 18B, Figure 7C). The all other Alaska also had the highest frequency of divorced respondents across the various geographic groupings (n = 4). When asked whether or not their spouse participated in the commercial fishing industry, 44.4% of CV skippers and crew said yes (n = 20) (Table 19A, Figure 8B).

Questions A8 through A9b asked respondents to describe their living arrangements. For CV skippers and crew, 83.9% of respondents stated they lived in a housing unit by themselves or with others (n = 73) (Table 20A, Figure 9B). These respondents were then asked to report how many people lived in the household including themselves (Question A9a) and whether they owned the residence, rented it, or lived with relatives (Question A9b). CV skippers and crew reported household sizes, on average, of 2.8 people (Table 21A, Figure 10B). The highest average household size was in the All Other Alaska grouping at 3.3 people (Table 21B, Figure 10C). CV skippers and crew also primarily reported owning their residence (59.2%, n = 42) (Table 22A, Figure 11B). However, more CV skippers and crew from the Kodiak geographic grouping said they rented their residence rather than owned it (54.2%, n = 13) (Table 22B, Figure 11C).

CV skippers and crew were asked to indicate what percentage of their combined family income came from their participation in commercial fishing or processing activities (Question A10). A total of 86.1% of CV skippers and crew said that it constituted 76% to 100% of their combined family income (n = 87) (Table 23A, Figure 12B). This pattern held the same across the various geographic groupings (Table 23B, Figure 12C). When asked about the way in which they were paid (Question A11), CV skippers and crew most frequently noted that it was by percentage of the value of the catch (96.0%, n = 97) (Table 24A, Figure 13B).

Individual participation

Section B of the survey focused on details of individual participation in the industry with questions pertaining to the length of time in the industry, role, characterization of employment, and wellness factors related to employment. To better understand the ways a person may participate in the commercial fishing industry, Question B1 asked respondents to describe their role or roles in the commercial fishing industry. Approximately 75% of the CV skippers and crew respondents reported that they were fishing crew (n = 77) while 33.3% reported themselves as a CV captain or operator (n = 34) (Table 25A, Figure 14B).

Question B2 asked respondents whether or not they or their family had historically participated in commercial fishing or processing activities. For CV skippers and crew, 56.9% responded yes (n = 58) (Table 27A, Figure 16B), and the most common number of generations the families of CV skipper and crew respondents had participated in the commercial fishing industry was 2 (25.6%, n = 23) (Question B2a) (Figure 28A, Table 17B). CV skippers and crew reported an average number of generations of 2.7. Respondents from the Kodiak grouping reported that, on average, 2.6 generations of their family had participated in the commercial fishing industry (Table 28B, Figure 17C).

CV skippers and crew most frequently reported that they had started working in the commercial fishing or processing industry between the ages of 11 and 15 (33.7%, n = 33) with an average age of 18.5 (Question B3) (Table 29A, Figure 18B). The average age was higher for respondents from the Seattle MSA area (30.3) in comparison to the all other Washington grouping (16.0) and the All Other Alaska grouping (16.2) (Table 29B, Figure 18C). The total number of years that respondents reported that they had worked in any commercial fishing or processing activities was on average 21.5 (Question B4) (Table 30A, Figure 19B). The average number of years for Kodiak CV skippers and crew was 24.1 years, and 21.0 years for respondents from the Seattle MSA (Table 30B, Figure 19C). When asked

specifically about the number of years that they have participated in the Gulf of Alaska groundfish trawl fishery, CV skippers and crew reported an average of 12.9 years (Question B5) (Table 31A, Figure 20B). The average number of years participating in the fishery was higher for Kodiak respondents (16.4) compared to those from the All Other Alaska grouping (12.3) or Oregon grouping (11.9) (Table 31B, Figure 20C).

Question B6 asked respondents to list the top five cities/towns/harbors out of which they worked. For the CV skippers and crew, 84.5% of respondents listed Kodiak (n = 87) (Table 32A, Figure 21B) while 36.9% listed Dutch Harbor (n = 38) and 35.9% listed Sand Point (n = 37).

Question B9 asked respondents whether they worked multiple jobs and if so, what type of jobs. Of the CV skipper and crew respondents, 72.5% reported they only had one job (n = 74) (Table 33A, Figure 22B). The prevalence of this response was the same across all geographic groupings, though there was a relatively high frequency of respondents from the All Other Alaska grouping that reported that they work multiple full-time jobs (30%, n = 9) (Table 33B, Figure 22C). When asked if they maintained a job outside of the commercial fishing or processing industry, only 11.0% of respondents in this sector said yes (n = 11) (Question B10) (Table 34A, Figure 23B). The regional breakdown of responses showed a similar prevalence for respondents who do not maintain a job outside of the commercial fishing or processing industry (Table 34B, Figure 23C).

Respondents were also asked to respond to a series of Likert scale questions related to wellness factors (Question B11). The scale had four choices: poor, fair, good, and excellent. When asked about job satisfaction, 56.1% of CV skipper and crew respondents (n = 55) reported that it was good and 37.8% reported that it was excellent (n = 37) (Table 35A, Figure 24B). Similarly for job stability, 46.9% of item respondents reported that it was good (n = 46) and 34.7% said it was excellent (n = 34). The majority of CV skipper and crew respondents reported their amount of compensation as good (44.9%, n = 44). CV skippers and crew from Oregon and the all other Washington grouping were more likely than the other geographic groupings to report their amount of pay as excellent (Table 35B, Figure 24C).

Connections

Questions in section C were designed to gather information on how people in the industry are connected and how resources and information flow. The information obtained for skippers and crew on the majority of these questions is combined with that of vessel owners and reported by vessel in the CV owner section above. For Question C5, respondents were asked to identify the ways in which they get information related to their work in the fishery. For CV skipper and crew respondents, 79.4% indicated that information was passed by word of mouth (n = 77), 61.9% reported that they used the radio (n = 60), and 77.3% said information was passed over the phone (n = 75) (Table 40A, Figure 29B). Several respondents from the All Other Alaska grouping reported that they utilized the ADF&G website to get information (n = 19) (Table 40B, Figure 29C).

Gulf of Alaska groundfish trawl management perspectives

Section D focused on the new bycatch management program under development by the NPFMC. Question D1 gauged the ways in which people may participate in the NPFMC management process.

For the CV skippers and crew, 63.3% reported that they do not participate in the Council process at all (n = 62) (Table 41A, Figure 30B). There were 20.4% that said they attend Council meetings in person (n = 20). Of the respondents who reported that they gave oral public testimony, 57.1% were from Kodiak (n = 8) (Table 41B, Figure 30C). Question D2 asked respondents to rate themselves on a scale from highly informed to not informed in relation to how informed they perceive themselves to be in the discussions about the developing bycatch management program for the Gulf of Alaska groundfish trawl fishery. Of the respondent CV skippers and crew, 32.0% believed that they were somewhat informed (n = 32), and 27.0% each believed they were reasonably informed or not informed (n = 27) (Table 42A, Figure 31B). For respondents from Oregon, 52.4% rated themselves as reasonably informed in the discussions (Table 42B, Figure 31C).

Question D3 asked respondents about any plans they may have for the next five years regarding their participation in various fishing industry sectors. Of the CV skipper and crew respondents, 49.0% (n = 50) indicated that they planned to keep their current activity levels relative to the Gulf of Alaska groundfish trawl fishery the same (Table 43A, Figure 32B). And 35.3% of item respondents reported that they were planning to increase their current activity levels in the Gulf (n = 36). This subset of people who indicated that they plan on increasing their Gulf activity levels was concentrated in the Kodiak geographic grouping (n = 14) (Table 43B, Figure 32C).

Respondents were asked to provide their opinions on the development of a bycatch management program for the Gulf of Alaska groundfish trawl fishery that includes a catch share element (Question D4). For item respondent CV skippers and crew, 64.4% said they generally support a catch share type program that allocates harvest or bycatch privileges (n = 58) (Table 44A, Figure 33B). Conversely, 27.5% of the group of respondents said they do not support a catch share type program (n = 22). Respondents were also asked to more specifically indicate whether they thought a harvest or bycatch privilege should be allocated to individuals, cooperatives, or communities. For CV skippers and crew, 41.6% reported that they support privileges being allocated to individuals (n = 42) and 25.7% said they would support privileges being allocated to cooperatives (n = 26). Most geographic groupings showed a higher frequency of respondents in support of individuals receiving privileges than cooperatives receiving privileges; however, respondents from the Oregon grouping showed a more similar response frequency between the two options (n = 9 and n =10 respectively) (Table 44B, Figure 33C).

Question D5 followed up on Question D4 and asked respondents to select reasons from a provided list as to why they do or do not support a catch share type bycatch management program. For CV skippers and crew, the most common response chosen was tied between reduced bycatch and longer fishing seasons/no race for fish (58.5% of respondents, n = 55). An increase in safety was also a highly cited reason for Question D4 by CV skippers and crew (52.1%, n = 49) (Table 45A, Figure 34B). The CV skippers and crew also believed that catch shares would create more stable jobs (48.9% n = 46) and more stable income (46.8%, n = 44). However, 40.4% of CV skippers and crew responded that such a program would result in fewer jobs (n = 38), 52.9% said that it will result in increased costs to enter the fishery/purchase quota (n = 37), and 45.7% responded that crew members would be negatively affected (n = 32). Regionally, 41.4% of Kodiak-based respondents (n = 12) and 38.7% of all other Alaska CV skippers and crew (n = 12) reported that they believed crew members would be negatively affected under a new program (Table 45B, Figure 34C).

For Question D6, respondents were asked to rate how much they would favor or oppose possible program elements of a bycatch management or catch share program for the Gulf of Alaska groundfish trawl fishery. The rating scale had five choices: strongly oppose, somewhat oppose, neutral, somewhat favor, and strongly favor. When asked whether the program should allocate quota to communities only, 54.1% of CV skippers and crew reported that they were strongly opposed this (n = 53) (Table 46B, Figure 35B). Additionally, 49.5% strongly opposed allocating a portion of the total quota pool to communities (n = 49). CV skippers and crew were split on whether they thought the program should only be an IFQ program (17.7% strongly favor, 19.8% strongly oppose), however 27.1% were strongly opposed to a program that includes a combination of IFQ and cooperatives (n = 29). When asked about whether the Western Gulf and Central Gulf should be managed separately, 31.6% reported that they strongly favored this (n = 30) and another 22.1% somewhat favored this (n = 21). A full 21.4% reported that they strongly oppose a limit on the duration of privileges (e.g. number of years) (n = 21). For CV skippers and crew, 31.6% strongly favored allocating quota shares based on history (n = 31) and 56.7% were strongly opposed to annual quota pounds being auctioned (n = 55). When asked whether the program should include skipper or crew shares, 37.8% reported that they strongly favored this (n = 37) while 23.5% somewhat favored this (n = 23).

Fishermen

Questions in Section E focused on fishery participation and the relationships between people who fish as well as questions on what happens to fish after it's caught. Question E1 asked respondents to rank in order of importance the fisheries that they participate in on a regular basis. A list of fisheries divided out between North Pacific and Pacific Coast fisheries was provided for respondents to use. Some respondents used one ranking system for both geographic groupings of fisheries while other respondents created separate rankings; therefore, the percentages presented for this question are based on the number of responses instead of the number of respondents. For the CV skipper and crew responses, 68.1% ranked Gulf of Alaska groundfish trawl first (n = 77) (Table 47, Figure 36B). The fishery most frequently ranked as second was Bering Sea and Aleutian Islands pollock (18.2%, n = 16). Central Gulf of Alaska rockfish was ranked second frequently (15.9%, n = 14) as well as third (22.4%, n = 12). The prevalence of responses ranking Central Gulf of Alaska rockfish as the second or third most important fishery for themselves was more common in the Kodiak and Oregon groupings (Table 47, Figure 36C). With regards to Pacific Coast fisheries, CV skippers and crew responses rated the Pacific whiting fishery as most important (3.5%, n = 4) or second most important (15.9%, n = 14) for themselves most often.

Question E2 directed respondents to choose the most common species that they had commercially fished over the last five years from a provided list. The top species indicated by CV skippers and crew were pollock (n = 93), Pacific cod (n = 89), shallow flatfish/rock sole (n = 60), and rex sole (n = 59) (Table 48B, Figure 37B). For the All Other Alaska grouping, 63.3% also said they participated in salmon fisheries (n = 19) and 56.7% participated in the Tanner crab fishery (n = 17) (Table 48C, Figure 37C).

In Question E3, respondents were asked whether they had changed the species they targeted within the last 5 years. For CV skippers and crew, only 13.7% reported that they had changed (n = 13) (Table 49A, Figure 38B). For the respondents from Petersburg, 66.7% reported that they had changed the species they targeted within the last 5 years (n = 2) (Table 49B, Figure 38C). In addition, over the last

5 years, CV skippers and crew reported having predominantly fished with a pelagic trawl (96.9%, n = 94) or non-pelagic trawl (82.5%, n = 80) (Question E4) (Table 50A, Figure 39B). A total of 35.1% of respondent CV skippers and crew fished with pot gear (n = 34) and longline gear (32.0%, n = 31) over the last 5 years. A significant number of Sand Point respondents reported using pot gear (83.3%, n = 10) (Table 50B, Figure 39C).

For Question E5 and E6, respondents were asked to indicate whether they were planning on continuing to participate, or stop participating, in the next five years for any of the fisheries that they had reported participating in to date. Nearly all respondents reported that they planned on continuing the fisheries that they were currently participating in (Table 51A, Figure 40B). For Question E7a, 41.7% of CV Skipper and crew indicated that they were considering whether to start participating in salmon fisheries (n = 2 for North Pacific salmon and n = 3 for West Coast salmon) (Table 53A, Figure 41B).

Respondents were directed to indicate their relationship to others that work on the commercial vessel or vessels on which they fish (Question E8). CV Skippers and crew most frequently described the other people as friends (75.5%, n = 74) (Table 54A, Figure 42B). And 36.7% reported that they were related to at least one individual on the vessel (n = 36). Respondents with a family member on the vessel were more prevalent in the King Cove and all other Washington geographic groupings (Table 54B, Figure 42C).

Question E9 asked respondents to approximate how many people they worked with on the most recent Gulf of Alaska groundfish trawl vessel. The average number of people, including the respondent, for CV skippers and crew was 3.9 (Table 55A, Figure 43B). The average reported by respondents based out of King Cove was 4.6 while the average for Seattle MSA respondents was 3.3 (Table 55B, Figure 43C). When asked whether these were typically the same people year after year, 85.0% of CV skippers and crew said yes (n = 85) (Question E11) (Table 56A, Figure 44B). Another 39.0% reported that they worked with the same service businesses every year (n = 39). For King Cove respondents, the frequency of respondents reporting that they typically work with the same crew year to year was much lower than the other geographic groupings (40.0%, n = 2) (Table 56B, Figure 44C).

Respondents were then asked to rate the quality of their relationships with people of various roles on the most recent groundfish trawl vessel they participated on (Question E12). CV skippers and crew generally rated their relationships as being positive with the captain or operator (78.9%, n = 75), other crew members (89.9%, n = 89), and the vessel owner (75.0%, n = 88) (Table 57A, Figure 45B). Skippers and crew members were less favorable in their ratings of their relationship with the observer (30.5% reported neutral compared to 64.2% who reported positive relationships; n = 29 and n = 61 respectively).

Question E14 directed respondents to indicate what items are taken into consideration when deciding where to sell their catch, based on a list of responses provided. For CV skippers and crew, 44.7% considered a longstanding relationship with plant personnel (n = 42) (Table 58A, Figure 46B). Additionally, 39.4% indicated there was a mutual agreement with a processor or buyer (n = 37). Question E15 asked how many processors or buyers are located in the port to which the respondent typically delivers. The most common response for CV skippers and crew was seven (22.4% of respondents, n = 22) (Table 59A, Figure 47B). This respondent group was split on whether or not they believed they had a choice as to where their fish are sold (Question E16). A total of 41.8% of CV

skippers and crew said no (n = 41) and 37.8% said yes (n = 37) (Table 60A, Figure 48B). Question E17 directed respondents to indicate what factors limited their choice of where to sell their GOA trawl-caught groundfish, based off a provided list. For CV skippers and crew, 31.6% indicated that it was the market (n = 30) and 32.6% reported that it was the limited number of processors (n = 31) (Table 61A, Figure 49B).

Finally, respondents were asked to rate the quality of their relationships with people in specific categories related to the selling of trawl-caught GOA groundfish (Question E18). For CV skippers and crew, 50.6% rated their relationship with tenders as positive (n = 43) (Table 62A, Figure 50B). And 76.0% rated their relationship with shoreside processors as positive as well (n = 73). Few respondents indicated that they had a relationship with an inshore stationary floating processor (49.3% responded not applicable, n = 36).

Shoreside processor owners and plant managers

Demographics

Section A of the survey asked respondents to provide demographic information about themselves. Question A1 asked about their gender. Of the 23 processor manager respondents, all reported that they were male (n = 23) (Table 12A, Figure 1B). The average age of respondents in this sector was 54.3, with the largest proportion of respondents falling into the 50-59 age grouping (59.1%, n = 13) followed by the 60-69 grouping (22.7% n = 5) (Question A2) (Table 13A, Figure 2B). In terms of the regional difference, the average age for processor managers in Kodiak was 54.7, while the average age for processor managers in all other Alaskan communities was slightly lower at 52.2 (Table 13B, Figure 2C).

Question A3 asked respondents about the highest level of education they had achieved. Processor managers most often reported having completed some college or vocational schooling without a degree (39.1%, n = 9) (Table 14A, Figure 3B). Another 21.7% of respondents stated that they had completed a Bachelor's degree (n = 5). In Kodiak, the distribution of processor managers with some college, an Associate's degree, or a Bachelor's degree is equal (13.0%, n = 3), while the number of processor workers with "some college" is proportionately higher in All Other Alaskan communities (17.4%, n = 4) (Table 14B, Figure 3C).

Questions in Section A also asked respondents about their race (Question A5), ethnicity (Question A6), and whether they were Hispanic or Latino (Question A4). Twenty of 22 processor managers who answered the question stated that they were not Hispanic or Latino (90.9%) (Table 15A, Figure 4B). For Question A5, the majority of processor managers stated that they were White (72.7%, n = 16) (Table 16A, Figure 5B). In terms of ethnic origin, 11 respondents described themselves as "other" (50.0%), although 7 respondents stated that they were English (31.8%) and 4 stated they were Scottish (18.2%); respondents could select more than one ethnicity (Table 17A, Figure 6B). In terms of geographical difference, the trend seen in the overall sector is generally seen in Kodiak and in all other Alaskan communities (Table 17B, Figure 6C).

Section A also asked respondents to report whether or not they were married (Question A7) and if their spouse participated in in any aspect the fishery (Question A7a). For processor managers, 78.3% stated

that they were currently married (n = 18) (Table 18A, Figure 7B). All processor managers in Alaskan communities outside of Kodiak were married, while single processor managers were in Kodiak (n = 1) and in the Seattle MSA (n = 2) (Table 18B, Figure 7C). Of the processor managers who reported being married, 82.4% stated that their spouse does not participate in the fishing industry to any degree (n = 14) (Table 19A, Figure 8B). Regionally, the overall trend seen in the sector was similar in Kodiak and all other Alaskan communities (Table 19B, Figure 8C).

Questions A8 through A9b asked respondents about their living arrangements. For processor managers, 65.2% stated they lived in a housing unit by themselves or with others (n = 15), while 6 processor managers stated they had "other" living arrangements (26.1%) (Table 20A, Figure 9B). Of those processor managers living in a housing unit, they were asked to report how many people were living in the household (including themselves) and whether they owned their residence or rented it. Question A9B also asked if they lived with relatives. The average household size for processor managers was 2.8 (Table 21A, Figure 10B), with 46.7% stating that two total people lived in their household (n = 7). A majority of processor managers stated that they owned their residence (85.7%, n = 12), while none stated that they lived with relatives (Table 22A, Figure 11B). Regionally, the overall trend seen in the sector was similar in Kodiak and all other Alaskan communities (Table 22B, Figure 11C).

Finally, respondents were asked to report information about their income. Question A10 asked the percentage of their combined family income that came from their participation in commercial fishing or processing activities. For processor managers, 76.2% of respondents reported that 76 to 100% of their combined family income came from participation in the industry (n = 16), while the remainder who answered stated that 51-75% of their combined family income came from participation in the industry (n = 5) (Table 23A, Figure 12B). Of the 23 processor managers who responded, 87.0% stated that they are paid by salary, while 2 respondents (both from Kodiak) stated that they were paid hourly (8.7%) (Table 24A, Figure 13B).

Individual Participation

Section B of the survey focused on details of individual participation in the industry with questions focused on the length of time in the industry, role, characterization of employment, and wellness factors related to employment. To better understand the variety of ways a person may participate in the commercial fishing industry, Question B1 asked respondents to describe their role. For processor managers who answered the question, 85.0% indicated that they were shoreside processor plant managers (n = 17), while 4 respondents also stated that they were a shoreside processor plant employee (20.0%) (Table 25A, Figure 14B).

Question B2 asked respondents whether or not their family historically participated in commercial fishing or processing activities. For processor managers, 36.4% responded "yes" (n = 8) (Table 27A, Figure 16B). Specifically, the number of generations the families of processor managers had participated in the commercial fishing industry was most commonly 1 (50.0%, n = 7) (Question B2a). The average number of generations was 1.6 for processor managers (Table 28A, Figure 17B).

Processor managers most often reported that they started working in the industry between the ages of 21 and 25 (31.8%, n = 7) (Question B3) (Table 29A, Figure 18B). The average total years that

processor managers reported having worked in the commercial fishing industry was 25.5 (Question B4) (Table 30A, Figure 19B). The average number of years was lower in the All Other U.S. States grouping (21.0), but were relatively similar for Kodiak and all other Alaskan communities (25.7 and 25.0, respectively) (Table 30B, Figure 19C). Respondents were then asked to report how many years they had specifically worked in the GOA groundfish trawl fishery (Question B5). Processor managers reported an average of 19.0 years, with 5 respondents stating they had 26 to 30 years of experience in the GOA groundfish trawl fishery (23.8%) (Table 31A, Figure 20B).

Question B6 asked respondents to list the top 5 cities/towns/harbors out of which they work. For processing managers, 65.0% stated that Kodiak was within their top 5 (n = 13), while 25.0% listed the Kenai Peninsula/Prince William Sound as in their top 5 (n = 5) (Table 32A, Figure 21B).

Question B9 asked respondents whether they worked multiple jobs and, if so, what type of employment they work. Of processor managers, 90.9% reported that they only had one job (n = 20) (Table 33A, Figure 22B). When asked if they maintained a job outside of the commercial fishing or processing industry, 15.0% (n = 3) of processor managers said "yes." (Question B10) (Table 34A, Figure 23B). The general trend seen for the entire sector is seen in Kodiak and all other Alaskan communities, with a low proportion (n = 1) in each location having a job outside of the commercial fishing industry (Table 34B, Figure 23C).

The last question of Section B posed a series of Likert scale wellness questions to respondents (Question B11). The scale had four choices: poor, fair, good, and excellent. When asked about job satisfaction, 36.3% of processor managers stated that it was excellent (n = 8) and 54.5% stated that it was good (n = 12). The majority of processor managers reported that their amount of compensation as good or excellent (71.4%, n = 15). Other wellness aspects were similarly high in their "good" and "excellent" responses, with a combination of those two categories representing the majority of responses. With regard to relationships with co-workers, no processor manager reported a poor or fair relationship, with 100.0% of processor managers reporting either a good or excellent relationship (n = 22) (Table 35A, Figure 24B).

Connections

A separate subnetwork was created from the responses of the processor manager respondents for their equipment suppliers; the sociogram is shown in Figure 25B. There were a total of 55 nodes connected through 61 ties (Table 36B). There were 44 businesses that were nominated by at least one shoreside processor, and 8 of those businesses were nominated by more than one processor. The mean number of nominations of these latter businesses was 3.13. One support service business was nominated by 7 different processor managers, a company that falls into the packaging category of suppliers.

The service providers nominated by the processor managers are shown in the sociogram in Figure 26B. The subnetwork included 63 nodes that were connected through 61 nominations (Table 37B). A total of 51 of these nodes were businesses, and a subset of 8 was nominated by at least two shoreside processing locations. The maximum number of nominations was three, which two different businesses specializing in shipping and transportation received. Half of the businesses nominated by more than one unique entity fell into the shipping and transportation category. The businesses named by this

subnetwork were predominantly located in the Central Gulf of Alaska, with other businesses located in other Alaskan regions or the Seattle area.

For Question C5, respondents were asked to identify the ways in which they get information related to their work in the fishery. For processor manager respondents, 81.8% indicated that information was passed over the phone (n = 18), 77.3% reported that they used the internet (n = 17), and 81.8% used the NMFS website (n = 18) (Table 40A, Figure 29B).

Gulf of Alaska Groundfish Trawl Management Perspectives

Section D focused on the new bycatch management program under development by the NPFMC. Question D1 gauged the ways in which people may participate in the NPFMC management process. For processor managers, 47.6% stated that they attend Council meetings (n = 10) (Table 41A, Figure 30B). Other popular methods included reading the council newsletter (38.1%, n = 8) and providing oral and written public testimony (each with 33.3%, n = 7). A minority of processor managers (33.3%, n = 7) stated that they do not participate in the council process at all.

Respondents were asked in Question D2 to rate how well informed they perceived themselves to be on the discussions related to the development of a bycatch management program for the GOA groundfish trawl fishery. Most processor managers rated themselves as either highly or reasonably informed (71.4%, n = 15) (Table 42A, Figure 31B). In terms of a geographical difference, respondents outside of Alaska were the only processor managers to respond as being “not informed” (Table 42B, Figure 31C).

Question D3 asked respondents about any plans they may have for the next five years regarding their participation in various fishing industry sectors. Of processor managers, 47.6% (n = 10) indicated that they planned to keep their current activity levels relative to the GOA groundfish trawl fishery the same, while 38.1% (n = 8) stated that their involvement would likely increase. With regard to other fisheries, 28.6% (n = 6) stated that their involvement would stay the same and 33.3% (n = 7) stated that it would likely increase (Table 43A, Figure 32B).

Respondents were asked whether they support the development of a bycatch management program for the GOA groundfish trawl fishery that includes a catch share element (Question D4). For processor managers, 93.8% (n = 15) stated that they would support a catch share type program. Respondents were also asked to more specifically indicate whether they thought a harvest or bycatch privilege should be allocated to individuals, cooperatives, or communities. Of the processor managers who answered the question, 52.4% (n = 11) stated they believed privileges should be allocated to cooperatives, while 47.6% (n = 10) stated they believed privileges should be allocated to individuals, and 19.0% (n = 4) stated that privileges should be allocated to communities (Table 44A, Figure 33B).

Question D5 followed up on Question D4 and asked respondents to select reasons as to why they do or not support a catch share type bycatch management program for the GOA groundfish trawl fishery. Of the processor managers who responded to the question, the most common response was that it would result in a longer fishing season (94.1%, n = 16). Other common selections included a belief that it would result in more stable jobs (88.2%, n = 15), there would be reduced bycatch (82.4%, n = 14), and that there would be a more stable delivery schedule (82.4%, n = 14) (Table 45A, Figure 34B). There was little variation geographically, although processor managers from Kodiak and all other Alaskan

communities generally selected more items from the list than processing managers in the Seattle MSA or other locations (Table 45A, Figure 34C).

In Question D6, respondents were asked to rate their support or opposition to possible program elements for a bycatch management or catch share program for the GOA groundfish trawl fishery on a scale of: strongly oppose, somewhat oppose, neutral, somewhat favor, or strongly favor. For processor managers, 64.7% (n = 11) stated they were strongly opposed to a program that would allocate quota to communities only, while 56.3% (n = 9) stated they were strongly in favor of a program that would be limited to cooperatives only. The second part of Question D6 asked respondents to rate more possible program elements on the same 5 point scale. For processor managers, 70.6% (n = 12) stated they were either strongly or somewhat in favor of allocating quota shares based on catch history, while 68.8% (n = 11) stated they were strongly or somewhat in favor of processing quota being matched with harvesting quota. Exactly 68.8% (n = 11) stated that they were strongly opposed to annual quota pounds being auctioned, while 58.8% (n = 10) stated that they were strongly opposed to quota shares being auctioned (Table 46A, Figure 35B).

Processing Plant Managers and/or Operators

Section F included a number of questions specific to processor owners, managers, and operators. In general, these questions were focused on the location of their operations, important species, the economic forces that drive management decisions, and the process by which product is transported and marketed. Many of the questions in this section were qualitative in nature and will be described more fully in subsequent reports.

Question F1 asked for what type of processor the processing manager worked. The majority (80.0%, n = 16) stated they worked for a shoreside processing plant, while 20.0% (n = 4) stated they worked for an inshore floating processor or some other processor (Table 63, Figure 51A). All processor managers located in Kodiak or other Alaskan community stated they worked for a shoreside processor (Table 63, Figure 51B). Question F2 asked if the processor for which the respondent worked was part of a larger company. Of those processor managers who responded, 78.9% (n = 15) answered “yes,” with 75.0% (n = 6) of processor managers in Kodiak replying in the affirmative and 100.0% (n = 6) of processor managers in all other Alaskan communities also answering “yes” (Table 64, Figure 52B)

Question F4 asked from how many vessels the respondent’s processing facility purchases GOA trawl-caught groundfish during a typical season. Collectively, half (n = 8) of processor managers stated that they purchased GOA trawl-caught groundfish from 1-10 vessels (Table 65, Figure 53A). Within Kodiak, the majority (85.7%, n = 6) of processor managers said they purchase from 1-10 vessels, with an average of 5.0 vessels. The number of vessels varied more for processor managers in all other Alaskan communities, with an average of 35.2 vessels (Table 65, Figure 53B).

Question F5 asked processor managers to rank by importance the top 10 species of fish that are processed and/or purchased by the processing facility for which they work. Not all processor managers listed 10 species; however, some general trends in the data can be seen. Overall, the top five species include pollock, Pacific cod, salmon, halibut, and sablefish. Of those processing managers who listed pollock as an important species, 56.3% (n = 9) rated it 1st, while 35.7% (n = 6) rated it 3rd (Table 66, Figure 54A). At the geographic level, processors in Kodiak and in all other Alaskan communities had a

similar distribution to the entire sector in terms of absolute numbers, although the small number of responses per species tended to overstate the importance of some species in terms of percentage (Table 66, Figure 54B).

Question F6 asked processor managers to rate the quality of their relationships with other people in the commercial fishery associated with the purchasing of GOA trawl-caught groundfish. In no instance did a processor manager rate a relationship as negative; all relationships were rated either neutral or positive. In general, the percentage of processor managers who rated relationships as positive was between 50.0% and 70.0%. However, as a whole, 94.7% (n = 18) of processor managers that provided a rating, rated their relationship with other plant workers as positive (Table 67, Figure 55A).

Question F7 asked if the GOA trawl-caught groundfish that is purchased by processor manager is typically processed in the same port where it is purchased. An even 70.0% (n = 14) stated yes, with 90.0% (n = 9) in Kodiak stating yes. In other Alaskan communities, 66.7% (n = 4) of processor managers said yes, with 16.7% (n = 1) stating that it depended on the species (Table 68, Figure 56B).

Question F8 asked what items do the respondent's company take into consideration when deciding where to sell GOA trawl-caught groundfish product(s). Collectively, 65.0% (n = 13) of processor managers said that the best market was a consideration, which was the item selected by the highest number of processor managers (Table 69, Figure 57A). Other top items included longstanding relationships (55.0%, n = 11) and an agreement with a wholesaler (50.0%, n = 10). Between processor managers in Kodiak and elsewhere in Alaska, the distribution across items is relatively similar. However, longstanding relationships are a more prevalent item in non-Kodiak communities (83.3%, n = 5), as are exchange rates (66.7%, n = 4) (Table 69, Figure 57B).

Finally, Question F10 asked how GOA trawl-caught groundfish products are transported to the final distributor or company distribution location. An even 85.0% (n = 17) of processor managers stated that product was delivered by ship, followed by air (65.0%, n = 13) and truck (45.0%, n = 9) (Table 70, Figure 58A). In Kodiak, delivery by ship and air were both selected by 80.0% (n = 8) of processor managers, while 83.3% (n = 5) of processor managers in all other Alaskan communities selected ship and 50.0% (n = 3) selected air (Table 70, Figure 58B).

Inshore processing workers

Due to an unprecedented level of cooperation from the processing industry, the number of processor worker surveys in the communities of Kodiak and all other Alaskan communities dwarf the number of responses from other communities represented in the dataset. While the overall discussion will include discussion of all processor workers, geographic comparisons are primarily focused on Kodiak and all other Alaskan communities.

Demographics

Section A of the survey asked respondents to provide demographic information on themselves. Question A1 asked about gender. Of processing workers, 65.5% (n = 810) responded that they were male, while 34.5% (n = 426) responded that they were female (Table 12A, Figure 1B).The distribution across all processing workers was similar to that in Kodiak and all other Alaskan communities (Table

12B, Figure 1C). The average age of processing workers was 46.7, with the largest share of respondents falling into the 50-59 age grouping (26.8%, n = 309) followed by the 40-49 age grouping (22.4%, n = 259) (Question A2) (Table 13A, Figure 2B). Within Kodiak, the largest share of respondents fall into the 50-59 age grouping (27.0%, n = 280), while the largest share of respondents in all other Alaskan communities is in the 40-49 age group (34.1%, n = 31) (Table 13B, Figure 2C).

Question A3 asked respondents about the highest level of education they had achieved. Processor workers most often reported having receiving a high school diploma (30.3%, n = 357) (Table 14A, Figure 3B). Another 27.2% (n = 321) stated they had completed some college or vocational training without a degree, and 26.3% (n = 310) stated that they had an elementary education. Kodiak mirrored these overall statistics, while a larger proportion of processor workers in all other Alaskan communities had completed some college (32.3%, n = 30) than had attained a high school diploma (23.7%, n = 22) (Table 14B, Figure 3C).

Questions in Section A also asked respondents about their race (Question A5), ethnicity (Question A6), and whether they were Hispanic or Latino (Question A4). Of processor workers, 19.7% (n = 197) stated they were Hispanic or Latino (Table 15A, Figure 4B). For Question A5, the majority of processor workers stated that they were Asian (80.0%, n = 862) (Table 16A, Figure 5B). This overall trend for the sector is present in Kodiak and in all other Alaskan communities (Table 16B, Figure 5C). When asked about ethnic origin, 74.0% (n = 879) stated that they were Filipino, 6.1% (n = 72) stating they were Mexican, and 5.3% (n = 63) stating they were English. An even 15.0% (n = 178) stated they were an “other” ethnicity (Table 17A, Figure 6B).These overall trends are similar for Kodiak and for all other Alaskan communities surveyed (Table 17B, Figure 6C).

Section A also asked respondents to report whether or not they were married (Question A7) and if their spouse participated in the fishery in any aspect (Question A7a). For processor workers, 56.6% (n = 680) of respondents said they were married and 31.1% (n = 374) stated that they were currently single (Table 18A, Figure 7B). For those married processor workers, 85.1% (n = 473) stated that their spouse did not participate in the fishing industry to any degree (Table 19A, Figure 8B). This overall trend was present in Kodiak and in all other Alaskan communities surveyed (Table 19B, Figure 8C).

Questions A8 through A9B asked respondents about their living arrangements. For processor workers, 62.0% (n = 487) stated they lived in a housing unit by themselves or with others, while 23.0% (n = 181) stated they lived in group housing, most of which work at Kodiak plants (Table 20A, Figure 9B). These respondents were then asked to report how many people were living in the household (including themselves), whether they owned the residence or rented it, and whether they lived with relatives. Processor workers primarily reported renting their residence (68.3%, n = 319) (Table 22A, Figure 11B). With regard to household size, those processor workers who lived in a housing unit stated that their average household size was 5.1 and 17.3% (n = 78) said they lived in a housing unit with five people, although the distribution of household size was more varied than other sectors in the survey (Table 21A, Figure 10B). Kodiak processor workers mirror these overall trends, but processor workers in all other Alaskan communities were more likely to live in group housing and average household sizes for housing units were smaller (4.0 compared to 5.2 in Kodiak) (Table 21B, Figure 10C).

Respondents were asked to report the percentage of their combined family income that came from their participation in commercial fishing or processing activities (Question A10). For processor workers,

27.6% (n = 223) reported that 76 to 100% of their combined family income came from participation in the industry (Table 23A, Figure 11B), although 35.1% (n = 284) of respondents preferred not to answer the question. Of processor workers, 83.9% (n = 744) stated that they are paid on an hourly basis, with 12.6% (n = 112) stated they are salary workers (Table 24A, Figure 12B). These overall trends are similar in Kodiak and in all other Alaskan communities surveyed (Table 24B, Figure 12C).

Processing Plant Employees

Section G of the survey asked questions specific to processor workers. These included questions concerning citizenship, government aid, hiring history, employment history, and personal finances. Question G1 asked if the respondent was a U.S. citizen. Of all processing workers who answered the question, 51.8% (n = 494) stated they were a U.S. citizen, while 44.4% (n = 424) stated that they were not (Table 71, Figure 59A). Of those processor workers who were not U.S. citizens, 88.4% (n = 327) reported themselves as permanent immigrants (Question G1a) (Table 72, Figure 60A) and 75.5% (n = 247) reported that they were seeking long-term residence within the U.S. (Question G1B) (Table 73, Figure 61A). In general, the trends in processing workers specifically from Kodiak and all other Alaskan communities that were surveyed mirror these larger trends, although the proportion of processing workers undecided about seeking long-term residency in the U.S. was larger in Kodiak than in the other Alaskan communities surveyed (19.6%, n = 58 to 7.4%, n = 2, respectively) (Table 73, Figure 61B).

Question G2 asked if the respondent had immediate family who live in the U.S. Of all processor workers surveyed, 73.2% (n = 657) stated yes (Table 74, Figure 62A). Within Kodiak, this percentage was higher for processor workers (74.6%, n = 599) than in all other Alaskan communities surveyed (57.5%, n = 46) (Table 74, Figure 62B). Question G3 asked if the processor worker's family received social assistance from any government within the U.S. Of all processor workers, 31.2% (n = 284) reported that their family did not receive any social assistance (Table 75, Figure 63A). Of those who stated yes (n = 284), 34.1% (n = 92) of respondents who answered the question reported receiving food stamps, 33.3% (n = 90) reported receiving social security, and 27.4% (n = 74) reported receiving health care (Question G3a) (Table 76, Figure 63A). The overall trends in family residency and receiving social assistance were similar to those trends in Kodiak and all other Alaskan communities surveyed, although the percentage of processor workers who report receiving food stamps is higher in Kodiak (35.2%, n = 89) than in other surveyed communities (Table 76, Figure 63B).

Question G4 asked for what type of processing plant the respondent works. The vast majority of respondents, 95.1% (n = 793), stated that they worked in a shoreside processing plant (Table 77, Figure 64A). When asked how they were hired, 47.3% (n = 426) reported that they were living in the U.S. and were recruited by a family member already working in the processing plant. Another 27.8% (n = 250) stated that they saw the job and applied for an open position (Question G5) (Table 78, Figure 65A). Of all processing workers, 91.6% (n = 823) stated that they were not hired while they were living outside of the U.S. (Question G6) (Table 79, Figure 66A). These trends are largely similar for Kodiak and all other Alaskan communities surveyed (Table 79, Figure 66B).

Question G7 asked how many members of the household worked as a processing employee. While 24.3% (n = 218) did not believe the question was applicable to them, 22.9% (n = 205) said that two members of the household worked as a processing employee, while 21.6% (n = 194) said that one

member of the household worked as a processing employee (Table 80, Figure 67A). In Kodiak, the percentage of households with two workers was higher than in all other Alaskan communities (23.5%, n = 189 to 14.1%, n = 11, respectively) (Table 80, Figure 67B).

Question G8 asked how many months a year does the respondent work as a processing employee. Just over half, 50.2% (n = 477), reported that they work between 10-12 months as a processing employee, with another 29.9% (n = 284) reporting that they work 7-9 months (Table 81, Figure 68A). When asked what they would do if they could no longer work the months they typically work, the majority of processing workers said that they would seek employment at another plant for those months (33.9%, n = 293) (Table 82, Figure 69A, although this response was more prevalent in Kodiak than in other Alaskan communities surveyed. In other Alaskan communities, 25.6% (n = 22) of processing employees stated they would leave Alaska and return to their home state (Question G9) (Table 82, Figure 69B). When asked what they currently do during months they are not employed at the processing plant, 54.9% (n = 503) of processing workers stated that they were unemployed, while 18.1% (n = 166) said they worked at a different processor (Question G10) (Table 83, Figure 70A). This trend was similar for Kodiak and all other Alaskan communities surveyed (Table 83, Figure 70B).

Finally, the last three questions of Section G asked about personal finances. Question G11 asked how many people the respondent supports financially with money earned as a processing employee. Across all processing employees, 19.9% (n = 174) stated they supported four people, although rates for 0-1, 2, and 3 people were all over 17.0% (Table 84, Figure 71A). Question G12 asked what percentage of the respondent's salary is sent to family members living in the U.S. Across all processing workers, 27.3% (n = 204) stated that 1-25% of their salary was sent to family in the U.S. (Table 85, Figure 72A), although for those processing workers in non-Kodiak Alaskan communities, the proportion of processing workers sending 51-75% of their salary to family in the U.S. is 25.7% (n = 18), compared to an overall rate of 16.3% (n = 122) for all processing workers surveyed (Table 85, Figure 72B). When asked the same question with regard to family living outside the U.S. (Question G13), 34.3% (n = 278) stated that 1-25% of their salary is sent abroad (Table 86, Figure 72A). Again, processing workers in non-Kodiak Alaskan communities had a higher proportion of respondents sending 51-75% of their salary abroad (22.2%, n = 18) compared to all processing workers (14.7%, n = 119) (Table 86, Figure 72B).

Industry representatives

This survey group consisted of eight representatives who are affiliated with the GOA groundfish trawl fishery in an administrative capacity. The sample is small, and as such special measures were taken to protect respondent anonymity. While this survey group was included for analysis in all three report types (all respondents, by sector, and by sector and geography), results by sector and geography will not be reported due to confidentiality restrictions. This is attributed to the fact that sample sizes do not exceed three respondents when broken down by sector and geography.

Demographics

This section collected baseline demographic information related to gender, age, education, race, ethnicity, marital status, residence, and income. Question A1 prompted information on gender. A total of eight industry representatives were surveyed, 50.0% of which were male, and 50.0% female (Table

12A, Figure 1B). Question A2 related to age distribution. Broken down by age range, 12.5% of respondents reported being between 30 and 39 years old; 50.0% reported being between 50 and 59 years old; and 37.5% reported being between 60 and 69 years old (Table 13A, Figure 2B). The average age of respondents was 56.3 years. In terms of level of education held (Question A3), 12.5% of respondents reported having some college or vocational training, but no degree; 12.5% reported holding an Associate's degree; 25.0% reported holding a Bachelor's degree; and 50.0% reported holding a graduate or professional degree (Table 14A, Figure 3B).

Question A4 related to ethnicity, and whether respondents consider themselves Hispanic or Latino. In terms of ethnicity, no respondents considered themselves Hispanic or Latino (Table 15A, Figure 4B). Question A5 related to racial identification, and allowed for multiple responses per respondent. In terms of race, all respondents identified themselves only as White/Caucasian (Table 16A, Figure 5B). Question A6 related to ancestral origin, and also allowed for multiple responses per respondent. In terms of ancestry, 37.5% of respondents identified with German ancestry; 37.5% identified with English ancestry, 25.0% identified with Norwegian ancestry; 12.5% identified with Scottish ancestry; and 62.5% also identified with some "other" ancestry (Table 17A, Figure 6B).

Question A7 related to marital status. In terms of current marital status, 75.0% (n = 6) of respondents were married, while 25.0% were single (Table 18A, Figure 7B). If the respondent was married, a supplementary question (A7a) then asked if their spouse participated in any aspect of the commercial fishing industry. For those answering this question (N = 6), 50.0% responded "yes", while 50.0% responded "no" (Table 19A, Figure 8B). Question A8 relates to the type of living arrangements held my respondents. In terms of housing, all respondents reported living in a housing unit by themselves or with others (Table 20A, Figure 9B). Question A9 is offered to respondents who reported living in an individual housing unit (non-group housing) and divided into two parts. Question A9a asks the respondent how many people live in their household, and A9b asks what best describes their relationship to the housing unit and any others residing within it, and allows for multiple responses per respondent. In terms of number of residents per household, 25.0% (n = 2) of responses reported only themselves occupying their residence; 62.5% reported 2 occupants; and 12.5% reported 5 occupants (Table 21A, Figure 10B). Average number of occupants per household was 2.1. In terms of relationship to household and occupants, 87.5% (n =7) of respondents reported that they owned their residence, while 12.5% reported renting (Table 22A, Figure 11B).

Question A10 asked respondents to indicate the percentage of combined family income generated from participation in commercial fishing or processing activities (including both GOA trawl groundfish and other fisheries.) In terms of total household income, 37.5% (n = 3) of respondents reported 26-50% of their combined income generated from commercial fishing or processing related activities; 12.5% reported 51-75%; and 50.0% reported 76-100% (Table 23A, Figure 12B). Finally, Question A11 relates to the method in which respondents are paid for work in the commercial fishing industry, and allows for multiple responses per respondent. In terms of how they were paid, 12.5% (n = 1) of responses reported receiving a percentage of catch; 25.0% (n = 2) reported receiving an hourly wage; 50.0% (n = 4) reported receiving a salary; 25.0% (n = 2) reported receiving an owner share; and 12.5% (n = 1) reported receiving some "other" method of compensation (Table 24A, Figure 13B).

Individual Participation

This section collected information on specific characteristics related to participation in the commercial fishing industry. Question B1 related to the respondent's, as well as their spouse's, role in any aspect of the commercial fishing industry. Respondents were given a series of roles and were asked to mark all that apply to them, or their spouse. In terms of their own role, 12.5% of responses (n = 1) reported being a participant's spouse or partner; 37.5% reported being a stakeholder representative or policy advocate; 25.0% reported being an industry supplier; 37.5% reported being in business operations; and 25.0% reported holding some "other" fishery-related role (Table 25A, Figure 14B).

Question B2 asks whether the respondent's family has historically participated in any commercial fishing or processing activities. For this question, 57.1% (n = 4) of respondents answered "yes", while 42.9% answered "no" (Table 27A, Figure 16B). Question B2a asked how many generations, including their own, participated in any commercial fishing or processing activities. In terms of generational participation, 28.6% (n = 2) of respondents reported 1 generation of participation; 28.6% reported 2 generations of participation; 14.3% reported 6 generations of participation, and 28.6% marked "not applicable" (Table 28A, Figure 17B). The average number of generations reported by industry organization representatives that their family had participated in commercial fishing or processing activities was 2.4.

Question B3 asked respondents how old they were when they started work in any commercial fishing or processing related activities. In terms of age, 28.6% of respondents (n = 2) reported being between 11 and 15 when beginning work in commercial fishing or processing related activities; 14.3% reported being between 21 and 25 (n = 1); 14.3% reported being between 36 and 40; 14.3% reported being 51 and above; and 28.6% marked "not applicable" (Table 29A, Figure 18B). The overall average age at which respondents started working in commercial fishing and processing related activities was 28.4 years. Similarly, Question B4 asked respondents how many total years they have worked in commercial fishing or processing activities. In terms of the total number of years, respondents had been working an average of 17.8 years (Table 30A, Figure 19B). Work history was further narrowed in Question B5, which asked respondents how many total years they had worked in the GOA groundfish trawl fishery. In terms of length of employment in the GOA groundfish trawl fishery, the average response was 16.3 years (Table 31A, Figure 20B). Question B9 asked respondents whether they worked multiple jobs. In terms of holding multiple jobs, half of respondents (n = 4) reported working multiple part-time and/or full-time jobs (Table 33A, Figure 22B).

Question B10 asked whether respondents maintained a job outside the commercial fishing or processing industry. If respondents answered yes, they were given two supplementary open-ended questions (B10a and B10b) asking them to provide a job description(s), as well as geographic information related to the position(s). In terms of maintaining work outside the commercial fishing or processing industry, only 37.5% (n = 3) of respondents answered "yes" (Table 34A, Figure 23B). Question B11 asked respondents to answer a series of six Likert scale questions related to quality of life and job satisfaction. When asked to rate job satisfaction, 50.0% (n = 4) of respondents reported it as "good", while 50.0% reported it as "excellent". When asked about their level of compensation or pay, the majority of respondents (62.5%, n = 5) indicated that it is "good". However, when asked about the method in which they are compensated, 62.5% (n = 5) reported it as "excellent". When asked about job stability, half of respondents (n = 4) reported it as "good" and 25.0% (n = 2) reported it as

"excellent". When asked about their standard of living, 75.0% (n = 6) of respondents reported it as "good", while 14.3% reported it as "excellent". Finally, when asked about their relationship with co-workers, 12.5% (n = 1) of respondents reported it as "good", while 87.5% (n = 7) reported it as "excellent" (Table 35A, Figure 24B).

Connections

The purpose of this section was to better understand how individuals and entities within the industry are connected, as well as how resources and information flow. Due to the small sample size of respondents in this grouping, individual sociograms were not created, however, some of the industry groups were named by other respondents, therefore they are present in the sociograms presented in earlier sections. Question C5 asked how information related to their work in the fishery is gathered. Respondents were given a series of potential sources of information, and were allowed multiple responses. In terms of information sources, 87.5% (n = 7) of respondents used telephones or cell phones; 12.5% (n = 1) used radio; 75.0% (n = 6) used word of mouth; 87.5% (n = 7) used the internet; all respondents used the ADF&G website; 62.5% (n = 5) used fishing organizations; all used the NMFS website; 37.5% (n = 3) used print media; 37.5% (n = 3) used processing plant managers; and 62.5% (n = 5) listed some "other" source(s) of information (Table 40A, Figure 29B).

Gulf of Alaska Groundfish Trawl Management Perspectives

This section gave respondents the opportunity to express their opinions on a variety of management options related to GOA groundfish trawl. The purpose of this section was to understand ideas and opinions about how best to structure a new bycatch management program. Question D1 asked how involved the respondent was in the NPFMC process, and allowed for multiple responses per respondent. In terms of participation, all respondents reported that they attend NPFMC meetings; 75.0% (n = 6) reported that they listen to NPFMC meetings via the web; 87.5% (n = 7) reported that they provide written public testimony to the NPFMC; 75.0% (n = 6) reported that they provide oral public testimony to the NPFMC; 50.0% (n = 4) reported that they provide written comments to the NPMFC; 87.5% (n = 7) reported that they read the NPFMC newsletter; and 50.0% reported some "other" form of participation (Table 41A, Figure 30B). Question D2 asked respondents to rate how well informed they were regarding discussion about developing a bycatch management program for the GOA groundfish trawl fishery. In terms of how well informed they were; all respondents reported that they were "highly informed' (Table 42A, Figure 31B).

Question D3 asked respondents to indicate their plans for participation in commercial fishing related activities over the next five years. This question allowed for multiple responses per respondent. In terms of commercial fishing related activities, the majority of respondents (62.5%, n = 5) indicated that they are going to keep current activity levels in the GOA groundfish trawl fishery (Table 43A, Figure 32B). Question D4 asked respondents whether they supported the development of a bycatch management program for the GOA groundfish trawl fishery that included a catch share element, where privileges are allocated to individuals, cooperatives, or communities. This question allowed for multiple responses per respondent. In terms of supporting a catch share element; one respondent indicated that they did not know whether the program should include catch shares; 7 respondents indicated that they did support a catch share element, and that allocations should be made to

cooperatives. Exactly 50% (n = 4) indicated that they did support a catch share element, and that allocations should be made to individuals (Table 44A, Figure 33B).

Question D5 asked respondents to consider their answers to Question D4, and provide opinions on what a bycatch management or catch share program would change in the GOA groundfish trawl fishery. In terms of impacts, the majority to all respondents believed that there would be a reduction in bycatch, longer fishing seasons and no "race to fish" incentives. Most believed there would be increases in safety, incomes would be more stable, jobs would be more stable, product quality would improve, individual vessel accountability would increase, cooperation between vessels would increase, flexibility in Prohibited Species Catch (PSC) would increase, delivery schedules would become more stable, business planning would benefit, market value of landings would improve, there would be greater incentive for gear innovation, business would become more flexible, incomes would increase, vessels that have a history of low PSC would benefit, processing costs would decrease, there would be benefits to community businesses and infrastructure, observer coverage would increase, and secondary processing would increase (Table 45A, Figure 34B). Additionally, 50% of respondents thought there would be an increased cost to enter the fishery/purchase quota, 50% expected fewer jobs, and 50% though it will increase the bargaining power for fishermen while 37.5% though it would increase bargaining power for processors.

Question D6 asked respondents to rate how much they favored or opposed a series of possible elements of a bycatch management or catch share program (Table 46A, Figure 35B). In terms of whether the program should be an Individual Fishing Quota (IFQ) program, 66.7% of respondents indicated that they are in strong opposition (n = 4). In terms of whether the program should be a cooperatives only program, 57.1% were strongly in favor (n = 4). The rest of the respondents were split among the other answers. In terms of whether the program should include a combination of IFQ and cooperatives, the respondents were generally split between being somewhat in favor and strongly opposed. In terms of whether the program should allocate quota to communities only, 100.0% (n = 7) of respondents were in strong opposition. In terms of whether the program should allocate a portion of the total quota pool to communities, 85.7% (n = 6) of respondents were either strongly or somewhat opposed. Respondents were generally split with regards to whether there should be a limit on the duration of privileges or whether the western and central GOA trawl fisheries should be combined into one program. Respondents were generally in favor 71.4% (n = 5) of managing the western and central GOA trawl fisheries separately. In terms of whether the NPFMC should keep a set-aside percentage of the Total Allowable Catch (TAC) for conservation, communities, and/or economic hardship, the majority of respondents (62.5%, n = 5) of respondents were neutral, with the remaining respondents spread among the other answer categories.

Respondents were also questioned on how quota shares should be allocated. Respondents were most in favor (71.4% being strongly in favor, n = 5) of allocating quota shares based on catch history. The most negative responses were seen with regards to allocating quota shares based on years of experience in the fishery (42.9% being strongly opposed, n = 3). Respondents (42.9%, n = 3) were equally split between being in favor or opposed with regards to whether the program should allocate quota shares based on bycatch or PSC history. Finally, respondents indicated some favor for allocating quota shares based on investment (42.9% being somewhat in favor, n = 3).

Respondents were somewhat split regarding the types of quota shares that should be allocated. They were strongly opposed to allocating shares to processing workers (85.7%, n = 6) and evenly split in opinions on allocating shares to skippers and crew (50.0% being opposed, n = 3; 33.3% in favor, n = 2). Over half were in favor of including sideboards in other non-catch share fisheries (57.1% being strongly in favor, n = 4; 14.3% being somewhat in favor, n = 4). In terms of only allocating PSC quota shares, 57.1% (n = 4) of respondents were strongly opposed; 14.3% were strongly in favor; 14.3% were somewhat opposed; and 14.3% were neutral.

A variety of other potential program elements were also presented to respondents to gauge their preferences. In general, industry organization representatives were opposed to allowing catcher processors to purchase quota from catcher vessels (83.3% being strongly opposed, n = 5; 16.7% being somewhat opposed, n = 1). However, respondents were generally in favor of allowing quota shares to freely transferable (33.3% being strongly in favor, n = 2; 33.3% being somewhat in favor, n = 2). Many respondents were strongly opposed to allowing the leasing of annual quota pounds the first two years of the program (33.3%, n = 2), including active participation requirements (28.6%, n = 2), including processing quota that has to be matched with harvesting quota (71.4%, n = 5); auctioning off quota shares (85.7%, n = 6) and including longline and pot gear types in the program (62.5%, n = 5). Industry representatives were relatively spread over their opinions on including cost recovery as a program element. Respondents were evenly split between being in favor and being opposed to having caps on annual quota pound lease rates (42.9% being in favor, n = 3; 42.9% being opposed, n = 3).

Industry suppliers and support businesses

Demographics

Section A of the survey asked respondents to provide demographic information on themselves. Question A1 asked about gender. A full 90.4% of support service respondents reported that they were male (n = 85) (Table 12A, Figure 1B). The support service respondents who identified as female were concentrated in Kodiak (n = 5 of the 9 total female responses) (Table 12B, Figure 1C). The average age of respondents in this sector was 54.1, with the largest share of respondents falling into the 50-59 age grouping (45.7%, n = 43) followed by the 60 to 69 grouping (22.3%, n = 21) (Question A2) (Table 13A, Figure 2B). That pattern was also consistent across regions. The overall average age for respondents from the support service business sector was 54.1 years. The only exception was support service businesses in the All Other Alaska group, which showed slightly more respondents in the 70 to 79 grouping (n = 4) as compared to the 60 to 69 grouping (n = 3) (Table 13B, Figure 2C). However, the average age for this grouping was similar to the overall average at 55.3.

Question A3 asked respondents about the highest level of education respondents had achieved. Support service business respondents most often reported having completed some college or vocational schooling without a degree (34.7%, n = 33) (Table 14A, Figure 3B). Another 29.4% of respondents noted that they had completed a Bachelor's degree (n = 28). Attainment of Bachelor's degrees was most concentrated in support service businesses located in Washington (n = 6) (Table 14B, Figure 3C).

Questions in Section A also asked respondents about their race (Question A5), ethnicity (Question A6), and whether they considered themselves to be Hispanic or Latino (Question A4). Only 2.2% of support service respondents reported that they were Hispanic or Latino (n = 2) (Table 15A, Figure 4B). For

Question A5, the majority of support service respondents reported themselves as White (85.3%, n = 81) (Table 16A, Figure 5B). In the region breakdown of All Other Alaska, there were several respondents who reported themselves as American Indian or Alaska Native (n = 9) (Table 16B, Figure 5C). When asked about ethnic origin, 47.3% of support service respondents described themselves as 'other' (Question A6) (Table 17A, Figure 6B). Write-ins for the other category included Swedish, Irish, and Icelandic. Additionally, English was checked frequently (29.7%, n = 27) as well as German (22.0%, n = 20), and Norwegian (17.6%, n = 16). Those checking the 'other' category for ethnic origin were concentrated in the Seattle MSA area (n = 22) (Table 17B, Figure 6C).

Section A also asked respondents to report whether or not they were married (Question A7) and if their spouse participated in the fishery in any way (Question A7a). For the support service business sector, 76.8% of respondents (n = 73) said they were married (Table 18A, Figure 7B). Respondents who reported they were single were more often located either in the Seattle MSA region or in the All Other Alaska grouping (n = 4) (Table 18B, Figure 7C). And of the respondents who reported being married, 34.2% noted that their spouse did not participate in the fishing industry to some degree (n = 48) (Table 19A, Figure 8B). There was a regional concentration of spousal participation in the industry in the All Other Alaska grouping (n = 10) (Table 19B, Figure 8C).

Questions A8 through A9b asked respondents about their living arrangements. For support service respondents, 97.9% of respondents stated they lived in a housing unit by themselves or with others (n = 93) (Table 20A, Figure 9B). These respondents were then asked to report how many people there were living in the household including themselves and whether they owned the residence, rented it, or lived with relatives. Support service respondents primarily reported owning their residence (89.1%, n = 82) (Table 22A, Figure 11B). The average household size for support service respondents was 2.5 (Table 21A, Figure 10B). A full 54.8% of respondents reported having two people total in their household (n = 51). The highest average household size was in the All Other Alaska and Oregon groupings (2.7) (Table 21B, Figure 10C).

Respondents were asked to report the percentage of their combined family income that came from their participation in commercial fishing or processing activities (Question A10). For the support service sector, 52.1% of respondents reported that 76 to 100% of their combined family income came from participation in the industry (n = 49) (Table 23A, Figure 12B). This response was concentrated in support service businesses located in the Seattle MSA (23 of the 49 responses) (Table 23B, Figure 12C). Regionally, 26.1% of All Other Alaska respondents in the sector reported that less than 10% of their combined family income came from the fishing industry (n = 6). Support service respondents also reported that they generally get paid by salary (68.1%, n = 64) (Question A11) (Table 24A, Figure 13B).

Individual participation

Section B of the survey focused on details of individual participation in the industry with questions such as the length of time in the industry, role, characterization of employment, and wellness factors related to employment. To better understand the ways a person may participate in the commercial fishing industry, Question B1 asked respondents to describe their role. For respondents categorized as support service business sector participants, 88.4% indicated that they were an industry supplier (n = 84) (Table 25A, Figure 14B). Another 10.5% of respondents responded 'other' (n = 10). The most

common ‘other’ write-in was harbormaster. A few support service business participants also marked themselves as a vessel owner or operator (n = 11). Support service participants that reported multiple roles in the industry were more prevalent in the All Other Alaska grouping (Table 25B, Figure 14C).

Question B2 asked respondents whether or not they or their family historically participated in commercial fishing or processing activities. For support service sector respondents, 66.3% responded yes (n = 59) (Table 27A, Figure 16B) and the number of generations their families had participated in the commercial fishing industry was most commonly 1 or 2 (59.0%, n = 46) (Question B2a) (Table 28A, Figure 17B). The average number of generations was 2.1 for support service respondents. A total of six respondents from the All Other Alaska grouping reported that three generations of their family had participated in the commercial fishing industry (Table 28B, Figure 17C). This increased the average number of generations for this region to 2.8.

Respondents in the support service industry most often reported that they started working in the industry between the ages of 16 and 20 (26.7%, n = 24) (Question B3) (Table 29A, Figure 18B). The average start age for the sector as a whole was 20.6. The average age respondents started working in the commercial fishing industry in the All Other Alaska region was lower, at 16.2 (Table 29B, Figure 18C). The average total years that support service respondents reported having worked in the commercial fishing industry was 29.1 (Question B4) (Table 30A, Figure 19B). The average number of years was higher in the All Other Alaska grouping (33.4) than the All Other Washington (26.0) or Seattle MSA area (26.8) (Table 30B, Figure 19C). Respondents were then asked to report how many years they had specifically worked in the Gulf of Alaska groundfish trawl fishery (Question B5). Respondents from the support service sector reported an average of 14.2 years (Table 31A, Figure 20B). In the All Other Alaska grouping, 8 support service business respondents reported having worked in the Gulf specifically for at least 16 years (Table 31B, Figure 20C).

Question B6 asked respondents to list the top 5 cities/towns/harbors out of which they work. For the support service business sector, 43.5% of respondents listed Kodiak (n = 30) (Table 32A, Figure 21B). And 34.8% listed Seattle as one of the cities that they work out of (n = 24). Dutch Harbor was third most frequently listed city by respondents from the support service sector (30.4%, n = 21).

Question B9 asked respondents whether they worked multiple jobs and if so, what type of employment they work. Of the support service sector respondents, 81.1% reported they only had one job (n = 77) (Table 33A, Figure 22B). The prevalence of this response was the same across all geographic groupings (Table 33B, Figure 22C). When asked if they maintained a job outside of the commercial fishing or processing industry, only 35.1% of respondents in this sector said yes (n = 33) (Question B10) (Table 34A, Figure 23B). Looking at the regional breakdown of responses, 55.6% of Kodiak respondents (n = 10) and 60.9% of All Other Alaska respondents (n = 14) reported that they did maintain a job outside of the commercial fishing industry while only 12.1% of Seattle MSA respondents responded yes (n = 4) (Table 34B, Figure 23C).

The last question of Section B posed a series of Likert scale wellness questions to respondents (Question B11). The scale had four choices: poor, fair, good, and excellent. When asked about job satisfaction, 61.3% of support service business sector respondents (n = 57) reported that it was excellent and 35.4% reported that it was good (n = 33) (Table 35A, Figure 24B). Similarly for job stability, 54.3% of item respondents reported that it was excellent (n = 51) and 35.1% said it was good

(n = 33). The majority of support service sector respondents reported their amount of compensation as good (55.8%, n = 53). There were no significant regional differences in this pattern of responses (Table 35B, Figure 24C). A notable detail, however, was that 36.8% of Kodiak respondents reported their amount of pay was only fair (n = 7).

Connections

Questions in section C were designed to gather information on how people in the industry are connected and how resources and information flow. For Question C5, respondents were asked to identify the ways in which they get information related to their work in the fishery. For support service business respondents, 77.3% indicated that information was passed by word of mouth (n = 68), 75.0% reported that they used the internet (n = 66), and 69.3% said information was passed over the phone (n = 61) (Table 40A, Figure 29B). Several respondents from the Seattle MSA grouping reported that they utilized print media (n = 20) and fishing organizations (n = 16) to get information (Table 40B, Figure 29C).

Gulf of Alaska groundfish trawl management perspectives

Section D focused on the new bycatch management program under development by the NPFMC. Question D1 gauged the ways in which people may participate in the NPFMC management process. For the support service business respondents, the majority reported that they do not participate in the Council process at all (56.2%, n = 41) (Table 41A, Figure 30B). There were some respondents who reported that they read the Council newsletter as a mode of participation (24.7%, n = 18) and some reported attending Council meetings in person (n = 13). Regionally, 80% of item respondents from the All Other Washington grouping stated that they attend Council meetings in person (n = 4) (Table 41B, Figure 30C).

Respondents were asked in Question D2 to rate how well informed they perceived themselves to be on the discussions of the developing bycatch management program for the Gulf of Alaska groundfish trawl fishery. Support service sector respondents most often rated themselves as somewhat informed (41.7%, n = 30) (Table 42A, Figure 31B). Looking at the regional breakdown of responses, support service sector respondents from Kodiak most frequently rated themselves as reasonably informed (46.7%, n = 7) (Table 42B, Figure 31C).

Question D3 asked respondents about any plans they may have for the next 5 years regarding their participation in various fishing industry sectors. Of the support service industry respondents, 33.3% (n = 24) indicated that they planned to keep their current activity levels relative to the Gulf of Alaska groundfish trawl fishery the same (Table 43A, Figure 32B). And 26.4% of item respondents reported that they were planning to increase their current activity levels in the Gulf (n = 19). This subset of people who indicated that they plan on increasing their Gulf activity levels was concentrated in the Seattle MSA geographic grouping (n = 13) (Table 43B, Figure 32C).

Respondents were asked whether they support the development of a bycatch management program for the Gulf of Alaska groundfish trawl fishery that includes a catch share element (Question D4). For the respondents from the support service business sector, 50% reported that they support a catch share type program (n = 26), while 21.2% said they do not support a catch share type program (n = 11). However,

some respondents provided responses that indicated “I don’t know” as well as a negative or positive response. Respondents were also asked to more specifically indicate whether they thought a harvest or bycatch privilege should be allocated to individuals, cooperatives, or communities. Of the item respondents, 34.6% believed privileges should be allocated to individuals (n = 18), 28.8% stated they believed privileges should be allocated to cooperatives (n = 15), and 17.3% (n = 9) believed they should be allocated to communities (Table 44A, Figure 33B). Respondents from the Seattle MSA area most frequently reported that cooperatives should be allocated privileges (47.4%, n = 9) (Table 44B, Figure 33C).

Question D5 followed up on Question D4 and asked respondents to select reasons from a list as to why they do or do not support a catch share type bycatch management program. Many support service business respondents did not respond to the question (n = 23). For those that did respond, the most prevalent response was that they expected that a bycatch management program or catch share program would reduce bycatch in the Gulf of Alaska groundfish trawl fishery (30.7% of sector respondents, n = 23) (Table 45A, Figure 34B). Additionally, 29.3% reported that they expected that a new program would result in more stable income (n = 22). And 28.0% (n = 21) reported that there would be fewer jobs as a result, that there would be an increase in individual vessel accountability, and that there would be an increase in safety. A subset of Seattle MSA based support service respondents reported that they believed a new program would increase cooperation between vessels (21.2%, n = 11) (Table 45B, Figure 34C).

In Question D6, respondents were asked to rate their support or opposition to possible program elements for a bycatch management or catch share program for the Gulf of Alaska groundfish trawl fishery on a scale of strongly oppose, somewhat oppose, neutral, somewhat favor, to strongly favor. For the support service business respondents, approximately one third did not respond to the question because they did not feel they were informed enough to give an opinion. For those that did respond, 58.8% were strongly opposed to a program element that would allocate quota to communities only (n = 30) (Table 46A, Figure 35B). And 32.1% somewhat favored a limit on the duration of privileges (e.g. number of years) (n = 17). The second part of Question D6 asked respondents to rate more program elements on the same 5 point scale. For support service respondents, 29.2% strongly favored allocating quota shares based on catch history (n = 14) (Table 46A, Figure 35B). A full 38.0% were strongly opposed to allowing catcher processor vessels to purchase quota from catcher vessels (n = 19). Of the support service sector respondents, 41.7% were strongly opposed to the auction of annual quota pounds (n = 20). Another 40.4% were strongly in favor of active participation requirements (e.g. owner on board) as a possible element of a bycatch management or catch share program for the Gulf of Alaska groundfish trawl fishery (n = 21). When asked whether the program should include longline and pot gears, 36.0% of support service respondents were somewhat in favor of that (n = 18).

Conclusion

This report detailed the development, implementation and preliminary results of the Gulf of Alaska Groundfish Trawl Social Survey data collection. The data collection was intended to collect information from active participants in the fishery about their demographics, individual participation in commercial fishing and/or processing, connections with others in the fishery, and opinions on the current status of bycatch management, as well as specifics related to the fishing practices of vessel owners, skippers and crew and specific information related to how processing plants operate and the processing workers who are employed in them. Respondents were offered multiple methods for completing the survey, including in-person, online, telephone and mail approaches. In order to be considered part of the target population for the survey, an individual or business must have participated in the GOA groundfish trawl fishery in some capacity between 2008 and 2013.

A non-response analysis was conducted to reveal any potential sources of bias in the survey results based on characteristics of the target populations that did and did not respond to the survey. The non-response analysis revealed a bias towards individuals that are more heavily involved in the fishery, which can be expected. The data presented in this report have not been adjusted for these potential sources of bias. Subsequent publications of this data may seek to address this issue.

In general, the responses to the survey were analyzed by sector and by geographic location. A total of nine individual sectors were identified as involved in the fishery, including: catcher vessel owners, catcher vessel skippers and crew, catcher processor owners, catcher processor skippers and crew, inshore processing plants (including both shoreside and inshore floating processing operations), inshore processing plant workers (including both shoreside and inshore floating processing operations), tender owners, fishery support businesses and industry organization representatives whose constituents are in part or wholly involved in the GOA groundfish trawl fishery. Following the sector breakdown, responses were divided among seven geographic groupings, including: Kodiak, All Other Alaska, the Seattle MSA, All Other Washington, Oregon, All Other U.S. States and All Other Countries. These groupings were created in order to protect the confidentiality and anonymity of responses at the community level.

For most sectors, the response rate was relatively high with an overall response rate of 50% (catcher vessel owners = 56%, catcher vessel skippers and crew = 34%, catcher processor owners = 13%, catcher processor skippers and crew = 2%, inshore processing plant managers (including both shoreside and inshore floating processing operations) = 77%, inshore processing plant workers (including both shoreside and inshore floating processing operations) = 72%, tender owners = 14%, fishery support businesses = 46%, and industry organization representatives = unknown; see Table 5 for the full set of response rates). A significant contributor to the success of this study was the immense cooperation that we received from the fishing and processing industry. Many industry organization representatives helped distribute information about the survey and assisted in garnering support for the survey across sectors. In addition, the shoreside processing sector was especially helpful with organizing their workers to participate in the survey.

However, throughout the implementation process a few difficulties were encountered. The survey instrument used for this study was based on a survey instrument that had been designed for use in the West Coast groundfish trawl fishery in the year before a new catch share program was implemented

for that fishery. The original intent was to make the Gulf of Alaska groundfish trawl survey as similar as possible to the West Coast survey in order to allow for a cross regional comparison. However, through implementation, we found a number of questions that were not worded appropriately for the Gulf of Alaska groundfish trawl fishery or were too complex for respondents to adequately respond. In addition, the survey structure was difficult to implement through modes other than in person. A single survey instrument was used where a subset of the questions were expected to be answered by each respondent based on the sector with which they self identified. However, we found that it would have been easier to have created separate versions of the survey for each sector ahead of time. Finally, the survey was initially translated into Tagalog and Spanish to accommodate non-English speakers. We found that the only sectors where a translated version of the survey was needed was with processing workers and that future iterations of this study should include additional translations in Vietnamese and Arabic for use by Vietnamese and East African (e.g., Somali, Eritrean, Sudanese) respondents.

The main sectors where survey implementation became a problem included tender owners and catcher processors. In general, the data available that identifies which tendering vessels are participating in certain fisheries is poor. In many cases, the data identified vessels as tenders that subsequently told us that they in fact do not tender at all. Given this, a target population of tenders that assist vessels in the GOA groundfish trawl fishery could not be completely identified. Furthermore, given a lack in confidence of the survey data that was received from tender owners that were originally identified, we did not include the results from the tender sector in this report. The second sector where implementation was not feasible was the catcher processors. In general, we found through trying to implement the survey that the format of the survey instrument and many of the questions were not consistent with how the catcher processor fleet operates. As a result, we have been working with representatives from the catcher processor parent companies to design a new set of surveys that can address these issues and be comparable with the data collected through this data collection effort. The social baseline survey with the catcher processor fleet is expected to occur in 2015.

The current survey effort serves as a baseline for the social characteristics of the GOA groundfish trawl fishery. This survey serves as one of the first of its kind in terms of providing a social baseline in advance of a specific change in Alaskan fisheries management. The intention is that the data provided here will assist the NPFMC in its development the new bycatch management program in the GOA groundfish trawl fishery and in its assessment of the impacts of the program on fishing communities and sectors that have historically participated in the fishery. If final Council action and NOAA Fisheries implementation of the new bycatch management program are delayed beyond the beginning of 2016, we will seek funding undertake a second baseline survey of participants in the fishery in order to ensure that a baseline is available for the most current status of participation. In addition, in order to measure social changes among the fishery's participants, we will seek additional funding to undertake a follow up survey will be conducted two years after implementation of the program.

References

Babbie, E.R. 2007. *The practice of social research, 11th ed*. Belmont, CA: Wadsworth.

Borgatti, S.P., M. G. Everett, and L.C. Freeman. 2002. *Ucinet for Windows: Software for Social Network Analysis*. Analytic Technologies, Harvard, MA.

Dillman, Don A, Jolene D. Smyth, and Leah Melani Christian. 2000. *Internet, Mail, and Mixed-mode Surveys: The Tailored Design Method*. John Wiley & Sons. New York.

Dunham, G., E. Uchida and H. Uchida. 2013. *The Effect of Fishery Management on Information Sharing Networks and Social Capital*. Selected Paper prepared for presentation at the Agricultural & Applied Economics Association's 2013 AAEA & CAES Joint Annual Meeting, Washington, DC August 4-6, 2013.

Ernoul, L., and A. Wardell-Johnson. 2013. Governance in integrated coastal zone management: a social networks analysis of cross-scale collaboration. *Environ. Conserv*. 40(3): 231-240.

Fina, M. 2011. Evolution of Catch Share Management: Lessons from Catch Share Management in the North Pacific. *Fisheries*. 36(4): 164-177.

Hannenman, R., and J. Riddle. 2005. *Introduction to Social Network Methods*. University of California, Riverside, CA. 322 p.

McCay, B. 1995. Social and Ecological Implications of ITQs: An Overview. *Ocean &* Coastal Management 28(1-3):3-22.

National Research Council. 1999. Share the Fish: Toward a National Policy on Individual *Fishing Quotas*. National Academy Press. Washington D.C.

North Pacific Fishery Management Council (NPFMC) 2013a. *GOA Trawl Bycatch Management Program: February 9, 2013 Council Motion*. Retrieved July 29, 2014 from: http://www.npfmc.org/wp-content/PDFdocuments/catch_shares/GOAtrawl/GOAtrawlmotions213.pdf.

North Pacific Fishery Management Council (NPFMC) 2013b. *GOA Trawl Bycatch Management Program: February 9, 2013 Discussion Paper*. Retrieved July 29, 2014 from: http://www.npfmc.org/wp-content/PDFdocuments/catch_shares/CGOATrawlCatchShare213.pdf.

North Pacific Fishery Management Council (NPFMC) 2013c. *GOA Economic Data Collection: February 2013 Council Motion*. Retrieved July 29, 2014 from: http://www.npfmc.org/wp-content/PDFdocuments/catch_shares/GOAtrawl/GOAeconDataCollect_motion213.pdf

North Pacific Fishery Management Council (NPFMC) 2013d. *GOA Tendering Report*. Retrieved September 29, 2013 from: http://www.npfmc.org/wp-content/PDFdocuments/catch_shares/GOAtrawl/GOATenderingReport513.pdf

Palsson, G, and G. Petursdottir, editors. 1996. *Social Implications of Quota Systems in Fisheries.* Nordic Council of Ministers, Copenhagen.

Rea, L.M. and R.A. Parker, 1997. *Designing and Conducting Survey Research.* John Wiley & Sons, Inc. San Francisco, CA.

Robson, C., 2002. *Real World Research Second Edition.* Blackwell Publishing. Malden, MA

Russell, S.M. and M. Schneidler-Ruff. In prep. *The U.S. Whale Watching Industry of Greater Puget Sound: A Description and Baseline Analysis*. U.S. Dept. Commer., NOAA Tech. Memo. NMFS-NWFSC-12X.

Salant, P. and D. Dillman. 1994. *How to conduct your own survey*. New York: John Wiley & Sons.

Additional References

Adesoji, A, J. Menzo, and B. McCay. 1998. Market Power, Industrial Organization and Tradeable Quotas. Review of Industrial Organization 13: 589-601.

Dewees, C.M. 1998. Effects of Individual Quota Systems on New Zealand and British Columbia Fisheries. *Ecological Applications* 8 (1) Supplement: Ecosystem Management for Sustainable Marine Fisheries (Feb., 1998), S133-S138.

Government Accountability Office. 2004. Individual Fishing Quotas: Methods for Community Protection and New Entry Require Periodic Evaluation. GAO-04-277.

Huppert, D. 2005. An Overview of Fishing Rights. *Reviews in Fish Biology and Fisheries* 15:201-215.

Pew Oceans Commission. 2003. Socioeconomic Perspectives on Marine Fisheries in the United *States.* Pew Oceans Commission, Arlington, VA.

Appendix A

Survey Instrument

Gulf of Alaska Groundfish Trawl Fishery Social Survey

Sponsored by:

NOAA Fisheries (National Marine Fisheries Service)
Alaska Fisheries Science Center
Economics and Social Science Research Program

Questions?

Please Contact Stev Weidlich, NOAA Contractor
Phone: (907) 273-4540
Email: GOATrawlSurvey@gmail.com

OMB Control No.: 0648-0685 **EXPIRATION DATE: 12/31/2016**

This survey is voluntary. **ALL RESPONSES ARE CONFIDENTIAL**

SURVEY INFORMATION

WHAT IS THE PURPOSE OF THE STUDY? This study aims to collect social and cultural information from those participating in all aspects of the Gulf of Alaska (GOA) Groundfish Trawl Fishery. The study will collect baseline data in 2014 to generate a description of the people in the industry before the approval and implementation of a substantial change in the management of the GOA Groundfish Trawl Fishery. After implementation we will repeat the study at various intervals. We can then compare the results from each study to update the baseline data on the industry, and better understand any changes or social impacts that have occurred in the industry. In addition to this survey, the North Pacific Fishery Management Council is expected to collect economic data about the fishery through an economic data collection program.

WHO IS CONDUCTING THIS STUDY? This study is being conducted by the Economics and Social Science Research Program (ESSRP) at the Alaska Fisheries Science Center (AFSC), National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA). The primary mission of the ESSRP is to provide economic and socio-cultural information that will assist NMFS in meeting its stewardship responsibilities. This means we study human society as it relates to marine resources, inclusive of commercial fishing.

HOW IS THIS STUDY FUNDED? This project is funded by the NMFS.

HOW WILL THIS STUDY BE USED? The information collected in this study will be used to understand the impacts of fishery management measures, and to inform fishery management in the future. The aggregated results of the survey will be publically available, but individual survey responses are confidential. It will also improve the NMFS' ability to analyze the impacts of fishery management actions on fishing communities, consistent with Magnuson-Stevens Fishery Conservation Act National Standard 8 and Executive Order 12898 – the Environmental Justice Initiative.

HOW IS THIS SURVEY ORGANIZED? The survey is organized into seven parts; demographics, individual participation, connections, catch share perspectives, a section for fishermen/harvesters, a section for tenders and processors, and a section for processing plant employees. The questions allow us to better understand all of the components of the fishery, how they function, and are connected.

WHO DOES THIS STUDY INCLUDE? This study includes fishermen, vessel owners, vessel operators, groundfish license limitation program license holders, crew aboard groundfish vessels, catcher-processor operations, shoreside processors, inshore floating processors, processing crews from all types of processors, tender operations, and other individuals who are stakeholders in the GOA Groundfish Trawl fishery such as industry suppliers, and support businesses.

HOW LONG WILL IT TAKE? This survey takes most people an hour to complete.

ARE MY ANSWERS CONFIDENTIAL? This is a confidential survey. Analysis of the survey results will be anonymous. Some of the information will be aggregated as well. Information in this survey will be subject to the confidentiality requirements of the National Marine Fisheries Service per MSA Sec. 402(b) and the NOAA Administrative Order NAO 216-100, and will not be provided or presented in any way as to identify individual respondents. Please see next page for more information.

DO I HAVE TO PARTICIPATE? Your participation and input is **VERY** important and will help us to better understand the unique opportunities and challenges of this fishery and its impact on your community. However, this is a **voluntary** survey and you may choose to skip any question or end at any point in the survey.

HOW WAS MY NAME OBTAINED? Depending on your role in the industry, your name was obtained through ownership of a vessel, websites, through your employer, or through third party referrals.

Thank you for your participation!

Please contact Stev Weidlich, NOAA Contractor for more information.

Contact information: GOATrawlSurvey@gmail.com, or by phone: (907) 273-4540

Code number: _____ Name of survey administrator: _____

Survey Location: _____ Date: _____

Research Community:_____Trawl/Fixed/Other_____

Notes: _____

SURVEY INSTRUCTIONS

All answers given in this survey should reflect *YOUR OWN* perception of the commercial fishing industry based on your personal experience and knowledge.

- Please ask questions at any time. Feel free to ask the researcher who is working with you or contact Stev Weidlich at GOATrawlSurvey@gmail.com or (907) 273-4540.
- Please follow directions carefully.
- Please **DO NOT** write your name anywhere on this survey, only on the blue form provided.
- Please mark one answer per question unless otherwise specified. Please write clearly.
- If you are unable to answer the question or it does not apply to you, please make sure to select the '*do not know*' or '*NOT APPLICABLE*' box from the options provided.
- If you chose to ***not*** answer a question for any reason, please write a notation next to the question in the margin if an appropriate option (ex. NOT APPLICABLE) is not provided in the question.
- Please mark boxes clearly.

In electronic survey versions, check boxes can be selected and unselected with a click of the mouse.

If you mark an answer incorrectly, please draw a horizontal line through the incorrect answer and check the correct answer.

THANK YOU FOR YOUR TIME AND PARTICIPATION

EXPLANATION OF CONFIDENTIALITY

The information you provide will be kept confidential to the extent possible per the Magnuson-Stevens Fishery Conservation and Management Act (as amended) Sec 402(b) and NOAA Administrative Order NAO 216-100, Protection of Confidential Fisheries Statistics. In addition, in the event of a Freedom of Information Act (FOIA) request, we will protect the confidentiality to the extent possible under the Exemption 4 of the FOIA. To support the confidentiality of this research the following processes are in place:

- Your name will not be included on the survey document. It will be tracked in an alternate document to reduce duplication, to account for your participation in the survey, and code your name as needed for the data analysis. Access to this document will be limited to researchers working on this study and protected via confidentiality agreements.
- All personal names provided on the survey document as answers to questions, will be viewed only by the study researchers. The names will either be coded with a descriptor such as 'X Community Fisherman' or assigned a code such as 'A1' as an identifier. The type of code that will be applied to the data for each applicable question may vary based on the question itself or the associated analysis of question.
- As researchers write final reports and publish the findings of this research, your responses will be combined with responses from other participants so that no single individual may be identified.

Section Completion Guide

Please see the following table for guidance on which survey sections to complete. Anyone can complete any of the survey sections; this information is simply provided for your assistance.

■ = Please complete all sections that are marked with this symbol
□ = Sections marked with this symbol are optional based on your knowledge of the subject.

	Sections						
Industry Role	A	B	C	D	E	F	G
Fisherman	■	■	■	■	■		
At-sea catcher processor plant manager and/or operator	■	■	■	■	■	■	
At-sea catcher processor employee – fisherman	■	■	■	■	■		
At-sea catcher processor employee – processing role	■	■	■	□		□	■
At-sea catcher processor employee – other role	■	■	■	□			■
Shoreside or floating processor plant manager and/or operator	■	■	■	■		■	
Shoreside or floating processor employee	■	■	■	□		□	■
Tender owner and/or operator	■	■	■	■		■	
Industry supplier of goods or services	■	■	■	□			
Other business operations	■	■	■	□			

For further clarification, the following table is provided to define the terms used in the table above.

Industry Role	Description
Fisherman	Groundfish License Limitation Program License Holders Vessel Owners Captains/Operators Crew
Shoreside Processor	Those working for processors permanently fixed on land or stationary floating processors.
Industry Supplier of Goods or Services	Net suppliers, gear suppliers, equipment suppliers, fuel, shipyards, various repair services, etc.
Tender	Tender owners, operators, and crew members.
Other Business Operations	Any individual who participates in other activities that provide services or other support utilized by fishery participants, such as harbormasters, accounting, business management, etc., but does not clearly fall into the other roles identified. For example: a business partner who may not be an owner.

SURVEY DEFINITIONS

The following definitions are for the application of this survey only. Where possible, these definitions have been derived from definitions found in associated fishery management documents[4].

AT-SEA PROCESSOR (At-sea operation): A catcher/processor or mothership that is receiving and/or processing fish in State waters and/or waters of the EEZ off the coast of Alaska.

BYCATCH: The term "bycatch" is defined in the Magnuson-Stevens Fishery Conservation and Management Act (MSA) as fish which are harvested in a fishery, but which are not sold or kept for personal use. Bycatch includes economic discards and regulatory discards, but does not include fish released under a recreational catch and release program.

CATCH SHARE PROGRAM: Not defined in the MSA. A generic term used to describe fishery management programs that allocate a specific percentage of the total allowable fishery catch or a specific fishing area to individuals, cooperatives, communities, or other entities. Each recipient of a catch share is directly accountable to stop fishing when its exclusive allocation is reached. Examples of catch share programs defined in statute include the Limited Access Privilege Program (LAPP), Individual Fishing Quotas (IFQ) such as the halibut and sablefish IFQ program and the Central Gulf of Alaska Rockfish Program, and Territorial Use Rights Fisheries (TURFs) that grant an exclusive privilege to fish in a geographically designated fishing ground.[5] The North Pacific Fishery Management Council's (NPFMC) proposed Gulf of Alaska Trawl Bycatch Management Plan may be considered a catch share program if target species quota, bycatch species quota, or prohibited species catch quota is allocated to individuals, cooperatives, communities, or other entities.

COMMERCIAL FISHING: The resulting catch of fish which either is, or is intended to be, sold or bartered, but does not include subsistence fishing.

GULF OF ALASKA (GOA) TRAWL GROUNDFISH: GOA groundfish Fisheries Management Plan (FMP) species caught using pelagic or non-pelagic trawl gear in the GOA region off Alaska.[6]

GULF OF ALASKA (GOA) NON-TRAWL GROUNDFISH: GOA groundfish FMP species caught using any other gear except pelagic or non-pelagic trawl gear in the Gulf of Alaska region off Alaska.

LICENSE HOLDER: A person who is named on a currently valid groundfish Federal License Limitation Program (LLP) license, crab species LLP license, or scallop LLP license.

OWNER OF A VESSEL OR VESSEL OWNER: A person identified as the current owner in the Certificate of Documentation (CG–1270) issued by the United States Coast Guard (USCG) for a documented vessel, or in a registration certificate issued by a state or the USCG for an undocumented vessel.

PARTICIPANT'S SPOUSE/PARTNER: The partner or spouse of an individual engaged in any aspect of fishing or processing of GOA trawl-caught groundfish.

STATIONARY FLOATING PROCESSOR (SFP): (1) A vessel of the United States operating as a processor in Alaska State waters that remains anchored or otherwise remains stationary in a single geographic location while receiving or processing groundfish harvested in the GOA or Bering Sea and Aleutian Islands (BSAI); and (2) In the Western and Central GOA Federal reporting areas 610, 620, or 630, a vessel that has not operated as a catcher/processor, Community Quota Entity floating processor, or mothership in the GOA during the same fishing year; however, an SFP can operate as catcher/processor or mothership in the BSAI and an SFP in the Western and Central GOA during the same fishing year.

SHORESIDE PROCESSOR: Any person or vessel that receives, purchases, or arranges to purchase, unprocessed groundfish, except catcher/processors, motherships, buying stations, restaurants, or persons receiving groundfish for personal consumption or bait.

TENDER: Any vessel that receives unprocessed fish from a vessel for trans-shipping or delivery to a shoreside processor or mothership and that does not process those fish.

---

[4] Source: Federal Fishing Regulations. Fisheries of the Exclusive Economic Zone Off Alaska. 50 CFR 679.2 Definitions, accessed 08/26/2013: http://alaskafisheries.noaa.gov/regs/part679_all.pdf.

[5] Source: NOAA Catch Shares Policy. NOAA Fisheries Catch Share Policy, accessed 6/12/2012: http://www.nmfs.noaa.gov/sfa/domes_fish/catchshare/docs/noaa_cs_policy.pdf

[6] For a full list of species included in the Gulf of Alaska Fisheries Management Plan (FMP), see the FMP located online here: http://alaskafisheries.noaa.gov/npfmc/PDFdocuments/fmp/GOA/GOAfmp613.pdf.

Section A: DEMOGRAPHIC INFORMATION

Demographic questions help us to better understand the unique characteristics of people. They are standard questions in social science and can be compared to the U.S. Census data to better describe a specific population such as fishermen

A1 What is your gender?

- ❑ Male
- ❑ Female

A2 How old are you?

YEARS: ☐

A3 What is the highest level of education you have attained?

- ❑ Elementary or some secondary education
- ❑ High school diploma or equivalent
- ❑ Some college or vocational, no degree
- ❑ Associates degree
- ❑ Bachelor's degree
- ❑ Graduate or professional degree

A4 Are you Hispanic or Latino?

- ❑ **Yes,** Hispanic or Latino
- ❑ **No,** Not Hispanic or Latino

A5 What is your race? *Please mark all that apply.*

- ❑ American Indian or Alaska Native
- ❑ Asian (including the Philippines)
- ❑ Black or African American
- ❑ Native Hawaiian or Other Pacific Islander
- ❑ White/Caucasian
- ❑ Other (Specify) _____

A6 What is your ancestry (ethnic origin)? *Please mark all that apply.*

- ❑ Aleut
- ❑ American Indian
- ❑ Athabaskan
- ❑ Chinese
- ❑ English
- ❑ Eyak
- ❑ Other (Specify)
- ❑ Filipino
- ❑ German
- ❑ Haida
- ❑ Inupiaq
- ❑ Italian
- ❑ Japanese
- ❑ Korean
- ❑ Mexican
- ❑ Norwegian
- ❑ Portuguese
- ❑ Russian
- ❑ Scottish
- ❑ Tlingit
- ❑ Tsimshian
- ❑ Vietnamese
- ❑ Yup'ik

_____

A7 What is your current marital status?

- ❑ Single
- ❑ Married ➡ **Go to A7a**
- ❑ Partner
- ❑ Divorced
- ❑ Widowed
- ❑ Other (Specify):

_____

A7a If married, does your spouse participate in any aspect of the commercial fishing industry?

- ❑ Yes
- ❑ No

Section A: DEMOGRAPHIC INFORMATION Cont'd

A8 What best describes your living arrangements?

- ❑ I live in a housing unit by myself or with others. ➡ **Go to A9a and A9b**
  (*U.S. Census Bureau defines a 'housing unit' as a house, an apartment, a mobile home, a group of rooms or a single room that is occupied - or, if vacant, intended for occupancy - as separate living quarters.*[7])
- ❑ I live in group housing provided by a processing plant. ➡ **Go to A10**
- ❑ Other. ➡ **Go to A10**

A9a How many people live in your household (including yourself)?
(U.S. Census Bureau defines a 'household' as all the people related and unrelated that occupy a housing unit.[8])

NUMBER: [ ] ❑

A9b What best describes your relationship to the housing unit and any others living in it? *Please mark all that apply.*

- ❑ I own the residence.
- ❑ I rent the residence.
- ❑ I live with relatives at the unit.
- ❑ Other (please specify)
  _____

A10 What percentage of your combined family income comes from your participation in commercial fishing or processing activities? *(Include both GOA trawl groundfish and other fisheries.)*

- ❑ 0-9% of combined family income.
- ❑ 10-25% of combined family income.
- ❑ 26-50% of combined family income.
- ❑ 51-75% of combined family income.
- ❑ 76-100% of combined family income.
- ❑ I prefer not to answer this question.

A11 How are you paid for your work in the commercial fishing industry? *Please mark all that apply.*

- ❑ By trip
- ❑ By percentage of value of catch
- ❑ By days at sea
- ❑ Other (Specify)_____
- ❑ Hourly
- ❑ Salary
- ❑ Owner Share

A12 Please indicate your permanent residence (where you are registered to vote and/or receive important mail) and your most current residence (where you currently live), if different.

	City/Town	State	Zip Code	Country
Permanent Residence:				
Current Residence (if different):				

A12a How long have you lived at your current and permanent residences?

	Years	Months
Current residence:		
Permanent residence (if different from current residence):		

[7] U.S. Census Current Population Survey Definitions U.S. Census Definitions, accessed 10/28/2013.
[8] Ibid.

END Section A: DEMOGRAPHIC INFORMATION

Section B: INDIVIDUAL PARTICIPATION

Questions in this section help us better understand additional characteristics of the people in the industry, beyond the demographic information provided in the previous section. In this section, we want to better understand how you participate in commercial fishing or processing

B1 Please indicate your role and any role your spouse/partner may have in any aspect of the commercial fishing industry. *Please mark all that apply.*
** Please complete this question from your perspective not your spouse's/partner's.*

Self	Spouse/ Partner	Role/Description
❑	❑	Groundfish LLP license holder
❑	❑	Catcher vessel owner
❑	❑	Catcher vessel co-owner
❑	❑	Catcher vessel captain/operator
❑	❑	Fishing crew
❑	❑	Non-fishing vessel crew
❑	❑	At-sea catcher processor plant manager or operator
❑	❑	At-sea catcher processor employee – fisherman
❑	❑	At-sea catcher processor employee – processing role
❑	❑	At-sea catcher processor employee – other role
❑	❑	Tender owner, operator, or crew
❑	❑	Shoreside processor plant manager or operator
❑	❑	Shoreside processor employee
❑	❑	Participant's spouse/partner
❑	❑	Cooperative manager
❑	❑	Stakeholder representative/policy advocate
❑	❑	Industry Supplier/Service Provider (Nets, Fuel, Shipyard, etc.)
❑	❑	Business Operations (accounting, law, etc.)
❑	❑	Other (Specify):
❑	❑	NOT APPLICABLE

B2 Has your family (*not your spouse's family*) historically participated in any commercial fishing or processing activities? (Including yourself)

❑ Yes ➡ **Go to B2a**

❑ No ➡ **Go to B3**

B2a For how many generations has your family (*not your spouse's family*) participated in any commercial fishing or processing activities? (Including yourself)

❑ NOT APPLICABLE

B3 How old were you when you started to work in any commercial fishing or processing activities?

❑ NOT APPLICABLE

B4 For how many total years have you worked in any commercial fishing or processing activities?

❑ NOT APPLICABLE

B5 How many total years have you worked in the Gulf of Alaska groundfish trawl fishery? *Processing workers, specify the number of years you have worked in a facility that processes groundfish from the GOA trawl fishery.*

❑ NOT APPLICABLE

Section B: INDIVIDUAL PARTICIPATION Cont'd

B6 Please list the top 5 cities/towns/harbors where you fish out of (if you work on a vessel) and/or where the processing facility(ies) you work at are located. For each city/town/harbor, please indicate whether you participate in the Gulf of Alaska (GOA) groundfish trawl fishery when working there.

City/Town/Harbor	State	GOA Groundfish Trawl (Yes/No)
		❑ Yes ❑ No
		❑ Yes ❑ No
		❑ Yes ❑ No
		❑ Yes ❑ No
		❑ Yes ❑ No

❑ NOT APPLICABLE

B7 Please indicate your level of employment for each category indicated below. For businesses, please indicate how your employees spend their time. *Please mark all that apply*. For seasonal or part time involvement, please also indicate how many months of the year you work in each category, or for businesses, what share of income is derived from each category. *(NOTE: We understand fishermen don't work on an hourly basis. Please select the option that best represents your situation.)*

	GOA Groundfish Trawl Fishery	GOA Groundfish Non-Trawl Fishery	All Other Fisheries	Processing Plant	Non-Fishing
Year round full-time (40 hours/week or more)					
Year round part-time (less than 40 hours/week)					
Seasonal full-time (part of the year 40 hours/week or more)					
Seasonal part-time (part of the year less than 40 hours/week)					
Self-employed (in business for yourself, etc.).					
Other (Specify)					

❑ NOT APPLICABLE

B8 What level of employment would you prefer?	GOA Groundfish Trawl Fishery	GOA Groundfish Non-Trawl Fishery	All Other Fisheries	Processing Plant	Non-Fishing
Year round full-time (40 hours/week or more)					
Year round part-time (less than 40 hours/week)					
Seasonal full-time (part of the year 40 hours/week or more)					
Seasonal part-time (part of the year less than 40 hours/week)					
Self-employed (in business for yourself, etc.).					
Other (Specify)					

❑ NOT APPLICABLE

Section B: INDIVIDUAL PARTICIPATION Cont'd

B9 Do you work multiple jobs? (In any combination of fishing, processing, or non-fishing related)

- ❑ Yes, multiple part-time jobs
- ❑ Yes, multiple full-time jobs
- ❑ Yes, both full and part-time jobs
- ❑ No, I work only one job.

B10 Do you maintain a job outside the commercial fishing or processing industry?

- ❑ Yes ➡ **Go to B10a and B10b**
- ❑ No ➡ **Go to B11**

B10a Please list any jobs you have outside the commercial fishing or processing industries.

Job description	City/Town/Harbor	State

B10b Please explain why you work outside the commercial fishing or processing industries.
For example: supplement income, personal interest, fishery only open seasonally, etc.

B11 How would you rate the following items in your role in the commercial fishing or processing industries? *Check a rating for each element.*

Description	Poor	Fair	Good	Excellent
Job satisfaction	❑	❑	❑	❑
Compensation/Pay (Amount)	❑	❑	❑	❑
Method of Compensation/Pay (How you are paid)	❑	❑	❑	❑
Job Stability	❑	❑	❑	❑
Standard of Living	❑	❑	❑	❑
Relationship with co-workers	❑	❑	❑	❑

B11a What would contribute to improving the above (B11) conditions? Please indicate how each item may be improved. *For example: Standard of Living would improve with increased income.*

Job satisfaction
Compensation/Pay (Amount)
Method of Compensation/Pay (How you are paid)
Job Stability
Standard of Living
Relationship with co-workers

END Section B: INDIVIDUAL PARTICIPATION

Section C: CONNECTIONS

Questions in this section help us understand how people in the industry are connected, how information and resources flow, and identify important resources to fishermen

C1 Who do you depend on for equipment and supplies you utilize while working in the commercial fishing or processing industry? Please list first and last names of people, companies, and/or organizations that provide that equipment and supplies. ***Please list the first 5 that come to mind.***
Personal names will be coded to protect identity, see page ii.
For example: net suppliers, fuel, bait, vessel parts, etc.

Name/Organization	Type of Equipment or Supply	City/Town/Harbor

❑ NOT APPLICABLE

C2 Who do you depend on for services you utilize while working in the commercial fishing or processing industry? Include where the service is located. Please list first and last names of people, companies, and/or organizations that provide those services. ***Please list the first 5 that come to mind.*** Personal names will be coded to protect identity, see page ii.
For example shipyards, equipment repairs, financial advice, accounting, legal, etc.

Name/Organization	Type of Service	City/Town/Harbor

❑ NOT APPLICABLE

C3 Who do you depend on for information about fisheries management*?* Please list the role or occupation of people and associated companies and/or organizations. ***Please list the first 5 that come to mind.*** Personal names will be coded to protect identity, see page ii.
For example: changes in regulations, fishery, area, or gear closures, observer requirements, etc.

Role/Organization	Type of Information	City/Town/Harbor

❑ NOT APPLICABLE

Section C: CONNECTIONS Cont'd

C4 Who do you depend on for other everyday information to assist you in your work in the commercial fishing and/or processing industries? Please list the role or occupation of people and associated companies and/or organizations that provide the information. *Please list the first 5 that come to mind*.
Personal names will be coded to protect identity, see page ii.
For example: status of fishing grounds, weather, etc.

Role/Organization	Type of Information	City/Town/Harbor

❑ NOT APPLICABLE

C5 How do you get information related to your work in the fishery? *Select all that apply.*

- ❑ Telephone/Cell Phone
- ❑ Radio
- ❑ Verbal/Word of Mouth
- ❑ Internet
- ❑ ADF&G website
- ❑ Fishing organizations
- ❑ NMFS website
- ❑ Social Networking Sites (Facebook, Twitter, etc.)
- ❑ Print Media (Newspaper, Magazines, Newsletters)
- ❑ Processing Plant Shift Manager
- ❑ Bulletin Board at Processing Plant
- ❑ Other (Specify): _____
- ❑ NOT APPLICABLE

C6 Please list any organizations or associations you are a member of that relate(s) to your participation in any aspect of the commercial fishing or processing industries.

❑ NOT APPLICABLE

END Section C: CONNECTIONS

Section D: GULF OF ALASKA GROUNDFISH TRAWL MANAGEMENT PERSPECTIVES

Questions in this section will help us understand your ideas and opinions about how best to structure any new bycatch management or catch share program for the Gulf of Alaska

D1 How do you participate in the North Pacific Fishery Management Council process? *Please mark all that apply.*

- ❑ Attend Council meetings in person
- ❑ Listen to Council meetings via the web
- ❑ Provide written public testimony
- ❑ Provide oral public testimony
- ❑ Provide written comments
- ❑ Read the Council's newsletter
- ❑ I do not participate in the Council process at all.
- ❑ Other (Specify): _____

D2 Please rate how well informed you are in the discussions about developing a bycatch management program for the Gulf of Alaska groundfish trawl fishery.

❑ Highly informed ❑ Reasonably informed ❑ Somewhat informed ❑ Not informed

D3 Please indicate your plans *over the next 5 years* for participation in the fishing industry sectors described below. *Please mark all that apply.*

- ❑ Keep current activity levels in the GOA groundfish trawl fishery
- ❑ Increase current activity levels in the GOA groundfish trawl fishery
- ❑ Decrease current activity levels in the GOA groundfish trawl fishery
- ❑ Exit the GOA groundfish trawl fishery
- ❑ I do not know
- ❑ NOT APPLICABLE
- ❑ Keep current activity levels in all other fisheries
- ❑ Increase current activity levels in all other fisheries
- ❑ Decrease current activity levels in all other fisheries
- ❑ Exit some but not all other fisheries
- ❑ Exit all other fisheries
- ❑ Other (Specify):

D4 Do you support the development of a bycatch management program for the GOA Groundfish Trawl fishery that includes a catch share element where harvest (or bycatch) privileges are allocated to individuals, cooperatives, or communities? *Please mark all that apply.*

- ❑ Yes: To Individuals
- ❑ Yes: To Cooperatives
- ❑ Yes: To Communities
- ❑ No: I do not support catch shares
- ❑ I do not know
- ❑ Other (Specify):

Section D: GULF OF ALASKA GROUNDFISH TRAWL MANAGEMENT PERSPECTIVES Cont'd

D5 Please select the reasons for your response in the previous question (D4). What do you think a bycatch management or catch share program would change in the Gulf of Alaska groundfish trawl fishery?
Please mark all that apply.

❑	More stable jobs	❑	Fewer jobs
❑	Increase in income	❑	Decrease in income
❑	More stable income	❑	Less stable income
❑	Increase in safety	❑	Decrease in safety
❑	Increase in business flexibility	❑	Management program difficult to understand
❑	Increase in competition among processors	❑	Increased cost to enter fishery and purchase quota
❑	Increase in market value	❑	Increased cost to remain in the fishery
❑	Increase in product quality	❑	Changes the structure of processing employment
❑	Increase cooperation between vessels	❑	Reduce cooperation between vessels
❑	Increase in secondary processing	❑	Processors leave the community and negatively impact the community
❑	Longer fishing seasons and eliminating the race for fish	❑	Vessels leave the fishery and negatively impact the community
❑	Increased flexibility in PSC (prohibited species catch, for example halibut and salmon) use	❑	Implicitly condones retaining PSC (prohibited species catch)
❑	Reduced bycatch	❑	Large vessels enter other fisheries with traditionally smaller vessels
❑	More businesses and better community infrastructure	❑	Loss of businesses and community infrastructure
❑	More stable delivery schedule	❑	Have to travel further to deliver catch to distant processors
❑	Decrease in processing costs	❑	Increased cost for raw product
❑	Increase access to markets for fishermen	❑	Impacts small vessels/small businesses (negatively)
❑	Benefits business planning	❑	Forces a shift to other fisheries
❑	Crew members can become owners	❑	Crew members are negatively affected
❑	Increase in observer coverage	❑	Increase the expense associated with the observer program
❑	Increase individual vessel accountability	❑	Decrease individual vessel accountability
❑	Greater incentive for gear innovation	❑	Smaller incentive for gear innovation
❑	Rewards vessels that have a history of low prohibited species catch (PSC)	❑	Rewards vessels that have a history of high prohibited species catch (PSC)
❑	Increase in bargaining power for fishermen	❑	Decrease in bargaining power for fishermen
❑	Increase in bargaining power for processors	❑	Decrease in bargaining power for processors
❑	Other (Specify):		

Section D: GULF OF ALASKA GROUNDFISH TRAWL MANAGEMENT PERSPECTIVES Cont'd

D6 Please rate how much you favor or oppose with each of the following possible elements of a bycatch management or catch share program for the Gulf of Alaska groundfish trawl fishery. *Check only one rating for each element.*

Possible program elements	Strongly oppose	Somewhat oppose	Neutral	Somewhat favor	Strongly favor
The program should be an individual fishing quota (IFQ) program.	❑	❑	❑	❑	❑
The program should be a cooperatives only program.	❑	❑	❑	❑	❑
The program should include a combination of IFQ and cooperatives	❑	❑	❑	❑	❑
The program should allocate quota to communities only.	❑	❑	❑	❑	❑
The program should allocate a portion of the total quota pool to communities.	❑	❑	❑	❑	❑
There should be a limit on the duration of privileges (e.g., certain number of years).	❑	❑	❑	❑	❑
The western and central GOA trawl fisheries should be combined in one program.	❑	❑	❑	❑	❑
The western and central GOA trawl fisheries should be managed separately.	❑	❑	❑	❑	❑
The Council should keep a set-aside (percentage of the TAC) for conservation, communities, and/or economic hardship.	❑	❑	❑	❑	❑

The program should …	Strongly oppose	Somewhat oppose	Neutral	Somewhat favor	Strongly favor
Include active participation requirements (e.g., owner on board)	❑	❑	❑	❑	❑
Include Skipper/crew shares	❑	❑	❑	❑	❑
Include processing quota that has to be matched with harvesting quota	❑	❑	❑	❑	❑
Include processing worker quota share	❑	❑	❑	❑	❑
Include caps on annual quota pound lease rates	❑	❑	❑	❑	❑
Include longline and pot gears	❑	❑	❑	❑	❑
Include sideboards in other non-catch share fisheries	❑	❑	❑	❑	❑
Only allocate PSC (prohibited species catch) quota shares	❑	❑	❑	❑	❑
Allocate quota shares based on catch history	❑	❑	❑	❑	❑
Allocate quota shares based on years of experience in the fishery	❑	❑	❑	❑	❑
Allocate quota shares based on investment	❑	❑	❑	❑	❑
Allocate quota share based on bycatch or (PSC) history	❑	❑	❑	❑	❑
Quota shares should be auctioned	❑	❑	❑	❑	❑
Annual quota pounds should be auctioned	❑	❑	❑	❑	❑
Allow quota shares to be freely transferable	❑	❑	❑	❑	❑
Allow the selling of quota shares the first two years of the program	❑	❑	❑	❑	❑
Allow the leasing of annual quota pounds the first two years of the program	❑	❑	❑	❑	❑
Allow catcher/processors to purchase quota from catcher vessels	❑	❑	❑	❑	❑
Include cost recovery up to 3% of landings value	❑	❑	❑	❑	❑

END Section D: GULF OF ALASKA GROUNDFISH TRAWL MANAGEMENT PERSPECTIVES

Section E: FISHERMEN

Questions in this section are specifically for fishermen. Information gathered will help us understand how fishermen are connected to each other and to processors, how fishermen move between the groundfish fishery and other fisheries, the relationships among people they work

Part 1: The first 10 questions in Section E relate to your participation in ALL fisheries, including the GOA Groundfish Trawl Fishery.

E1 Please *rank*, in order of importance, which fisheries you participate in on a regular basis (1 being the most important). BSAI: Bering Sea/Aleutian Island, GOA: Gulf of Alaska.

Rank	North Pacific Fisheries
	GOA groundfish - trawl
	GOA groundfish - fixed gear
	CGOA rockfish program
	Other GOA rockfish
	Sablefish/halibut IFQ
	Salmon
	GOA Tanner crab
	Dungeness crab
	BSAI King and Tanner crab
	BSAI pollock
	BSAI non-pollock Groundfish
	Scallop
	Other (Specify):

Rank	Pacific Coast Fisheries
	Pacific whiting
	Non-whiting groundfish - trawl
	Non-sablefish groundfish - fixed gear
	Sablefish
	Salmon
	Pacific halibut
	Dungeness crab
	Shrimp
	Highly Migratory Species *(For example: Tunas, Billfish/Swordfish, Sharks, Dorado, etc.)*
	Coastal Pelagic Species *(For example: Pacific sardine, Pacific mackerel, jack mackerel, northern anchovy, market squid, etc.)*
	Other (Specify):

E2 What are the most common species you have commercially fished in the last 5 years? *Please mark all that apply*.

Flatfish
- ❑ Shallow flatfish/Rock sole
- ❑ Yellowfin sole
- ❑ Arrowtooth flounder
- ❑ Kamchatka flounder
- ❑ Rex sole
- ❑ Flathead sole
- ❑ Alaska plaice
- ❑ Greenland turbot
- ❑ Deep flatfish
- ❑ Halibut
- ❑ Other flatfish

Sharks and Skates
- ❑ Big skates
- ❑ Longnose skates
- ❑ Other skates
- ❑ Spiny dogfish

Rockfish
- ❑ Pacific ocean perch
- ❑ Dusky rockfish
- ❑ Northern rockfish
- ❑ Shortraker/rougheye rockfish
- ❑ Thornyhead rockfish
- ❑ Other rockfish

Shellfish/Molluscs
- ❑ King crab
- ❑ Snow (opilio) crab
- ❑ Tanner (bairdi) crab
- ❑ Dungeness crab
- ❑ Scallops
- ❑ Shrimp
- ❑ Squid
- ❑ Octopus

Roundfish
- ❑ Pollock
- ❑ Pacific cod
- ❑ Sablefish
- ❑ Atka mackerel
- ❑ Pacific whiting
- ❑ Lingcod

Other
- ❑ Tuna
- ❑ Pacific coast trawl non-whiting groundfish
- ❑ Salmon
- ❑ Herring
- ❑ Other (Specify):

Section E: FISHERMEN Continued

E3 Have you changed the species you have targeted within the last 5 years?

❑ Yes ➡ **Go to E3a** ❑ No ➡ **Go to E4** ❑ NOT APPLICABLE ➡ **Go to E4**

E3a Why have you changed the species you target?

❑ NOT APPLICABLE

E4 What gear(s) have you fished with in the last 5 years? *Please mark all that apply*.

❑ Pelagic trawl	❑ Dredge	❑ Beach seine
❑ Non-pelagic trawl	❑ Mechanical jig	❑ Purse seine
❑ Longline	❑ Drift gillnet	❑ Herring gillnet
❑ Pot gear	❑ Set gillnet	
❑ Diving gear	❑ Hand line/jig/troll	

❑ Other(s) (Specify):

E5 Referring to your answers in E1, which of the fisheries you listed do you plan to CONTINUE participating in over the next 5 years? *(Please be sure to include the GOA Groundfish Trawl Fishery if applicable.)*

1) _____
2) _____
3) _____
4) _____
5) _____

❑ NONE ❑ NOT APPLICABLE

E6 Also referring to your answers in E1, which of the fisheries you listed do you plan to STOP participating in within the next 5 years? ➡ Go to E6a and E6b *(Please be sure to include the GOA Groundfish Trawl Fishery if applicable.)*

1) _____
2) _____
3) _____
4) _____
5) _____

❑ NONE ➡ **Go to E7** ❑ NOT APPLICABLE ➡ **Go to E7**

Section E: FISHERMEN Continued

E6a If you stated that you plan to STOP participating in the GOA groundfish trawl fishery in E6, please describe why you do not plan on continuing fishing in the GOA groundfish trawl fishery.

❑ NOT APPLICABLE

E6b For all other fisheries that you do not plan to continue fishing in over the next 5 years, please list the fisheries and describe why you do not plan on continuing fishing in those fisheries.

❑ NOT APPLICABLE

E7 Again referring to the list of fisheries in E1, are there any fisheries you intend to begin participating in within the next 5 years that you did not participate in the last 5 years?

❑ Yes ➡ **Go to E7a**

❑ No ➡ **Go to E8**

❑ NOT APPLICABLE ➡ **Go to E8**

E7a Please list any fisheries you plan to begin participating in within the next 5 years that you have not participated in during the last 5 years:

1)

2)

3)

4)

E8 Of the vessel(s) you commercially fish on, what is your relationship to others on the vessel(s)?
Note: Please include LLP license holders or owners not on board. Please mark all that apply.

❑ Related to at least one individual – Family

❑ All on vessel are family members

❑ Business Partners

❑ Friends

❑ Other (Specify):

Section E: FISHERMEN Continued

E9 Approximately how many people work with you on the most recent GOA groundfish trawl vessel you fished on? Please include yourself in the number.

NUMBER ☐

E10 Please complete the following table to help us understand more about the vessels you have owned and/or fished on *in the last 5 years*.

Own: Please check the box if you own or co-own the vessel listed.
Fished On: Please check the box if you have personally fished on the vessel listed.
Mooring Port(s): Please tell us the port(s) where the vessel most frequently moors (this may be different than where the vessel lands catch).
Trawl Participant: Please check whether or not the vessel actively participates in the GOA Groundfish Trawl Fishery, even if you are not onboard during that fishery.
Other Fisheries: Please list all the other fisheries the vessel(s) actively participates in. Please include both Alaska and West Coast Fisheries.
Do Not Know: If you do not know a piece of information please indicate Do Not Know in the corresponding space in the table.

☐ NOT APPLICABLE

No.	Own	Fished On	Vessel Name	Mooring Port(s)	Trawl Participant	Other Fisheries
Example	☒	☒	*Wandering Seas*	*Sand Point, AK*	☒ Y ☐ N	*BSAI Crab*
1	☐	☐			☐ Y ☐ N	
2	☐	☐			☐ Y ☐ N	
3	☐	☐			☐ Y ☐ N	
4	☐	☐			☐ Y ☐ N	
5	☐	☐			☐ Y ☐ N	
6	☐	☐			☐ Y ☐ N	
7	☐	☐			☐ Y ☐ N	
8	☐	☐			☐ Y ☐ N	

Section E: FISHERMEN Continued

Part 2: Questions E11 through E18 in Section E relate to your participation in the GOA groundfish trawl fishery only.

E11 Do you typically work with the same people in the GOA groundfish trawl fishery year after year? *Please mark all that apply.*

- ❑ Yes, same crew
- ❑ Yes, same group of vessels
- ❑ No, I do not typically work with the same people each year
- ❑ Yes, the same processor
- ❑ Yes, the same service businesses
- ❑ NOT APPLICABLE

E12 Please rate the quality of your relationships with the following people on the most recent groundfish trawl fishery vessel you have fished on or owned. Your answer to this question will help us to understand whether well-being and job satisfaction changes with the implementation of new management programs. *All of your responses will be kept confidential.*

Individual	Negative	Neutral	Positive	Self/NOT APPLICABLE
Vessel Owner	❑	❑	❑	❑
Captain/Operator	❑	❑	❑	❑
Crew	❑	❑	❑	❑
Observer	❑	❑	❑	❑
Other (Specify):	❑	❑	❑	❑

E13 To whom do you sell your GOA trawl-caught groundfish? Please consider the vessel you most recently fished on or owned when answering this question. Please list business(es) you sold to.

❑ I do not know ❑ NOT APPLICABLE

E14 What items are taken into consideration when deciding where to sell the catch? *Please mark all that apply.*

- ❑ Mutual agreement with processor/buyer
- ❑ Contract with processor/buyer
- ❑ Only processor/buyer available
- ❑ Vessel owned by processor/buyer
- ❑ Longstanding relationship with plant personnel
- ❑ Best price/market
- ❑ I do not know
- ❑ Other (Specify):

E15 How many processors/buyers are located in the port to which you typically deliver?

Number: ____ ❑ I do not know ❑ NOT APPLICABLE

Section E: FISHERMEN Continued

E16 Do you have a choice of where you sell your fish?

❑ Yes ➡ **Go to E17**
❑ No ➡ **Go to E16a**
❑ I do not know ➡ **Go to E17**
❑ NOT APPLICABLE ➡ **Go to E17**

E16a If you answered NO in question E16, please describe why you do not have a choice.

E17 What limits your choice of where you sell your GOA trawl-caught groundfish?

❑ Market
❑ Limited number of processors
❑ Location of processor
❑ Amount purchased by processor
❑ Amount paid for catch by processor
❑ Species purchased by processor
❑ NOT APPLICABLE
❑ Sell/deliver to a floating processor
❑ No limitations
❑ Vessel is owned by processor
❑ Processor will only purchase some species
❑ Contractual arrangement with processor
❑ Other (Specify):

E18 Please rate the quality of your relationships generally with people in the following categories related to the selling of trawl-caught GOA groundfish species. Your answer to this question will help us to understand whether well-being and job satisfaction changes with the implementation of new management programs. *All of your responses will be kept confidential.*

Individual	Negative	Neutral	Positive	Self/NOT APPLICABLE
Tender	❑	❑	❑	❑
Shoreside processor	❑	❑	❑	❑
Stationary floating processor	❑	❑	❑	❑
Catcher/processor	❑	❑	❑	❑
Other (Specify):	❑	❑	❑	❑

End Section E: FISHERMEN

Section F: PROCESSING PLANT MANAGERS AND/OR OPERATORS

Questions in Section F are specific to processors, including catcher/processors, shoreside processers, and stationary floating processors. Information gathered in this section will help us understand the connections between processors and fishermen, the flow of the product from the

F1 Please select below which option best describes the type of processor that you operate or work for (where the survey is being filled out). Please provide the name of the company next to the corresponding selection.

	Company Name
❑ Shoreside processor	
❑ Catcher/processor	
❑ Stationary floating processor	
❑ Other (Specify):	

F2 In which port / city is the processor you operate or work for physically located? For catcher/processors and stationary floating processors, please indicate the most common port(s) in the space below.

Port(s)/City(ies)	State(s)

F3 Is the processor you operate or work for part of a larger company? If yes, what are the company's other locations? (If the company has too many facilities to list, please list the top three locations in your region).

	Port/City	State
❑ Yes ➡		
➡		
➡		

❑ No ❑ I do not know

F4 From how many vessels does your processing facility *purchase* GOA trawl-caught groundfish from during a typical season? *Please include all vessels from which you make purchases at least once* per season.

NUMBER ☐

❑ We do not purchase catch from other vessels

❑ I do not know

❑ NOT APPLICABLE

Section F: PROCESSING PLANT MANAGERS AND OPERATORS Cont'd

F5 Please list, in order of importance, the *top 10 species* of fish that are processed and/or purchased by the processing facility you operate or work for. Please also explain why these species are important relative to others. *For example: market value is higher, available when other fish are not, provides income stability for crew, etc.* Please refer to question **E2** for a list of species examples.

Species	Explanation
1)	
2)	
3)	
4)	
5)	
6)	
7)	
8)	
9)	
10)	

❑ I do not know

F6 Please rate the quality of your relationships with the following people associated with the purchasing of GOA trawl-caught groundfish. Your answer to this question will help us to understand whether well-being and job satisfaction changes with the implementation of new management programs. *All of your responses will be kept confidential*.

Individual	Negative	Neutral	Positive	Self/NOT APPLICABLE
Vessel owners	❑	❑	❑	❑
Vessel captains/operators	❑	❑	❑	❑
Vessel crew members	❑	❑	❑	❑
People that buy groundfish from you	❑	❑	❑	❑
People that distribute the groundfish that you process	❑	❑	❑	❑
People that market the groundfish that you process	❑	❑	❑	❑
Your plant workers	❑	❑	❑	❑
Other (Specify):	❑	❑	❑	❑

Section F: PROCESSING PLANT MANAGERS AND OPERATORS Cont'd.

F7 Is the GOA trawl-caught groundfish that you purchase typically processed in the same port where it is purchased?

- ❑ Yes ➡ **Go to F8**
- ❑ No ➡ **Go to F7a**
- ❑ Depends on the species ➡ **Go to F7a**
- ❑ I do not know
- ❑ NOT APPLICABLE
- ❑ Other (Specify)

F7a Please clarify why GOA trawl-caught groundfish purchased in one port is processed in another location.

Species	Location	Reason for different location

❑ I do not know

F8 What items does your company take into consideration when deciding where to *sell* GOA trawl-caught groundfish product(s)? *Please mark all that apply*.

- ❑ Contract with wholesaler(s)
- ❑ Contract with distributor(s)
- ❑ Contract with restaurant(s)
- ❑ Contract with retailer(s)
- ❑ Best markets
- ❑ I do not know
- ❑ Agreement with wholesaler(s)
- ❑ Agreement with distributor(s)
- ❑ Agreement with restaurant(s)
- ❑ Agreement with retailer(s)
- ❑ Longstanding relationships
- ❑ Exchange rates
- ❑ Other (Specify): _____

F9 Where do you market your GOA trawl-caught groundfish product(s)?
Please mark all that apply and list locations. (For example: Seattle, WA).

- ❑ Local _____
- ❑ Regional _____
- ❑ National _____
- ❑ International _____
- ❑ I do not know

Section F: PROCESSING PLANT MANAGERS AND OPERATORS Cont'd.

F10 How is/are the GOA trawl-caught groundfish product(s) transported to the final distributor or company distribution location? *Please mark all that apply.*

❑ Ship ❑ Truck ❑ Air ❑ I do not know

❑ Other (Specify):

F11 What other businesses do you depend on for the complete purchase, processing, and sale of your company's GOA trawl-caught groundfish product(s)?
For example: trucking company, broker, etc.

❑ I do not know

F12 To help us better understand what happens to GOA trawl-caught groundfish after it is purchased from a vessel, please describe the path of your primary GOA trawl-caught groundfish product(s) takes from purchase to final consumption. *For example:*

Vessel → Shoreside Processor → Chinese re-processor → Japanese distributor → Final consumer market in Korea

❑ I do not know

End Section F: PROCESSING PLANT MANAGERS AND OPERATORS

Section G: PROCESSING PLANT EMPLOYEES

G1 Are you a U.S. citizen?

- ❑ Yes ➡ **Go to G2**
- ❑ No ➡ **Go to G1a and G1b**
- ❑ Currently undergoing the naturalization process

G1a What type of foreign worker status do you have?

- ❑ Temporary nonimmigrant worker (H-2 visa)
- ❑ Student or exchange visitor (J-1 visa)
- ❑ Permanent immigrant worker
- ❑ Other (Specify):

G2 Does your immediate family (spouse, kids) live in the U.S.?

- ❑ Yes ➡ **Go to G3**
- ❑ No ➡ **Go to G2a**

G1b Do you plan to seek long term residence in the U.S.?

❑ Yes ❑ No ❑ Undecided

G2a If not, where do they live?

G3 Does your family receive social assistance from any government in the United States?

❑ Yes ➡ **Go to G3a** ❑ No ➡ **Go to G4**

G3a If you answered yes on G4, what types of social assistance does your family receive? *Please mark all that apply.*

- ❑ Food stamps
- ❑ Social security
- ❑ Housing financial assistance
- ❑ General utilities financial assistance
- ❑ Child care financial assistance
- ❑ Health care
- ❑ Job placement assistance
- ❑ Other (Specify):

G4 What type of processor do you currently work for? *Please mark all that apply*.

- ❑ Shoreside processing plant
- ❑ Stationary floating processor
- ❑ Catcher processor vessel

G5 How did you get your current job as a processing employee?

- ❑ I saw the job advertised and applied for it.
- ❑ I was living in the United States and was recruited by a family member or friend that worked in the processing plant.
- ❑ I was recruited by the processing plant.
- ❑ I was living in another country and was recruited by my family members that worked in the processing plant.
- ❑ Other (Specify): _____

G6: When I was hired, I was living outside the United States.

- ❑ Yes ➡ **Go to G6a**
- ❑ No ➡ **Go to G7**

G6a: Which country were you living in at the time you were hired?

Section G: PROCESSING PLANT EMPLOYEES Cont'd

G7 How many members of your household work as processing employees?
(If you live in group housing, please check NOT APPLICABLE.)

NUMBER: ☐ ❑ NOT APPLICABLE

G8 How many months a year do you work as a processing employee?

❑ 0 to 3 months ❑ 4 to 6 months ❑ 7 to 9 months ❑ 10 to 12 months

G9 If your processing plant was no longer able to employ you for all of the months you currently work, which of the following options would you consider? *Please mark all that apply*.

- ❑ Seek employment in another processing plant for the months your current job is not available.
- ❑ Seek employment at another processing plant permanently.
- ❑ Seek employment in another role in the fishing industry (for example, crew or skipper of a vessel or another role within the processing industry).
- ❑ Seek employment outside of the fishing industry.
- ❑ Leave Alaska and return to your home State (if you are from the continental U.S.).
- ❑ Leave Alaska and return to your home country (if you are not from the U.S.).
- ❑ Leave Alaska and move to another State in the U.S. where you did not live before.
- ❑ Move to another city or town in Alaska.
- ❑ Retire.
- ❑ I would not be affected.
- ❑ I do not know.
- ❑ Other (Specify)

_____

G10 What type of work do you do during the months that you are not working at your current processor?
Please mark all that apply.

❑ Unemployed ❑ Crew of a fishing vessel ❑ NOT APPLICABLE

❑ Employee at a different processor ❑ Skipper of a fishing vessel ❑ Other (Specify)

_____

G11 How many people do you support financially with the money you earn as a processing employee?

NUMBER: ☐

G12 What percentage of your salary do you send to family members living in the United States?

❑ 0% ❑ 1-25% ❑ 26-50%
❑ 51-75% ❑ 76-100%

G13 What percentage of your salary do you send to family members that currently live in another country?

❑ 0% ❑ 1-25% ❑ 26-50%
❑ 51-75% ❑ 76-100%

END SURVEY
THANK YOU FOR YOUR PARTICIPATION

The following space is left blank for notes or comments

THANK YOU FOR YOUR PARTICIPATION

Please address any questions or comments to:
Stev Weidlich
1420 Kettner Blvd., Suite 500
San Diego, CA 92102
GOATrawlSurvey@gmail.com
(907) 273-4540