

Appendix 1

Secretarial Review Draft Social Impact Assessment: Catcher/Processor Mothership Restrictions in the Bering Sea and Aleutian Islands and the Gulf of Alaska when taking Directed Non-CDQ Pacific Cod Deliveries from Trawl Catcher Vessels

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Acronyms and Abbreviations

ADFG	Alaska Department of Fish and Game
AEB	Aleutians East Borough
AFA	American Fisheries Act
AFSC	Alaska Fisheries Science Center
AKFIN	Alaska Fisheries Information Network
ANCSA	Alaska Native Claims Settlement Act
APIA	Aleutian Pribilof Islands Association
BSAI	Bering Sea/Aleutian Islands
BSIA	best scientific information available
CAS	Catch Accounting System
CDQ	Community Development Quota
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CFEC	Alaska Commercial Fisheries Entry Commission
COAR	Commercial Operator Annual Report
CP	catcher/processor
CQE	Community Quota Entity
CV	catcher vessel
EDR	Economic Data Report
EO	Executive Order
FMP	Fishery Management Plan
FR	Federal Register
GOA	Gulf of Alaska
IFP	inshore floating processor
IFQ	individual fishing quota

ITAC	initial total allowable catch
LLP	License Limitation Program
LOA	length overall
MSA	Metropolitan Statistical Area
mt	metric ton
NEPA	National Environmental Policy Act
NOAA	National Oceanic and Atmospheric Administration
NPFMC	North Pacific Fishery Management Council
QS	quota share
RAM	Restricted Access Management
RIR	Regulatory Impact Review
SIA	Social Impact Assessment
TAC	total allowable catch

1 Overview

As noted in the Regulatory Impact Review (RIR) to which this Social Impact Assessment (SIA) is appended, in April 2017, the Council tasked staff with preparing a discussion paper that examines participation and effort in the Bering Sea trawl catcher vessel Pacific cod fishery in response to a potential need to limit entry and participation in the trawl catcher vessel sector and the sector's delivery of Bering Sea Pacific cod to Amendment 80 catcher/processor vessels acting as motherships. Starting in 2016, the number of Amendment 80 vessels acting as a mothership in the Bering Sea Pacific cod fishery, and the number of trawl catcher vessels delivering Bering Sea Pacific cod to those Amendment 80 catcher/processors, have increased. Some historical Pacific cod participants are concerned about the increased participation by Amendment 80 catcher/processors and their potential to negatively impact the distribution of historical harvest.

After reviewing that discussion paper during in December 2017, the preliminary review document in June 2018, and the initial review document in February 2019, the Council amended previous purpose and need statements by adopted the following purpose and need statement:

During development of Amendment 80 to the Bering Sea Aleutian Islands Fishery Management Plan, and associated rule making, the Council was silent on the ability of catcher/processors defined in Amendment 80 to act as motherships in limited access fisheries. Recent increases of Amendment 80 catcher/processors acting as motherships has resulted in an increase in the amount of Pacific cod delivered to Amendment 80 catcher/processors, an increase in the number of catcher vessels delivering Pacific cod to motherships, and a decrease in the amount of Pacific cod delivered to shoreside processing facilities. One American Fisheries Act catcher/processor has consistently operated as mothership in the directed BSAI Pacific cod fishery. The Council is concerned about the impacts of the recent increases and potential for future growth in offshore deliveries of Pacific cod to Amendment 80 vessels or other vessels operating as motherships, and the potential impacts those increases could have on shoreside processors, communities, and participating catcher vessels. The Council intends to address the activity of vessels acting as motherships.

The RIR to which this SIA is appended examines the benefits and costs of a proposed regulatory amendment to limit whether and how Amendment 80 catcher/processors and non-Amendment 80 catcher/processors are allowed to act as a mothership by receiving Bering Sea/Aleutian Islands (BSAI) non-Community Development Quota (CDQ) Pacific cod deliveries from trawl catcher vessels. The proposed amendment also considers limiting the amount of BSAI non-CDQ Pacific cod trawl catcher vessels may deliver to certain catcher/processors. The intent of this proposed action is to address the activity of vessels acting as motherships in the BSAI Pacific cod trawl catcher vessel fishery.

The current suite of alternatives includes:

- Alternative 1, which is the “No action” alternative. The existing trends noted in the purpose and need statement would not be addressed.
- Alternative 2, which would limit future participation of certain catcher/processors acting as motherships in the fishery to those with a history of participating in a greater or lesser number of years within a 2015-2017 qualifying period, with differing options for Amendment 80 and non-Amendment 80 catcher/processors.
 - Specifically, under Alternative 2, a catcher/processor may take directed fishery deliveries of Pacific cod from catcher vessels participating in BSAI non-CDQ Pacific cod trawl fishery if the catcher/processor acted as a mothership and received targeted Pacific cod deliveries as follows:
 - Option 1: Amendment 80 catcher/processors acting as motherships during 2015-2017

- Suboption 1.1 in any year
 - Suboption 1.2 in any two of the three years
 - Suboption 1.3 in all three years
 - Option 2: Non-Amendment 80 vessels acting as motherships during 2015-2017
- From a community impact perspective, it is important to note that while Alternative 2 would limit the number of certain catcher/processors acting as motherships, it would not limit the number of catcher vessels that could make BSAI non-CDQ directed Pacific cod trawl deliveries to those catcher/processors, nor does it limit the percentage of the BSAI non-CDQ directed Pacific cod catcher vessel trawl sector allocation that could be delivered to those catcher/processors (or other vessels that acted as motherships in the fishery). Option 1 would place limits on Amendment 80 vessels only; Option 2 would extend the limits to non-Amendment 80 vessels.
- Alternative 3, which would limit the percentage of total catcher vessel trawl allocation of Bering Sea Pacific cod that could be delivered to Amendment 80 catcher/processors acting as motherships in the future to the percentage that was delivered to catcher/processors acting as motherships in a greater or lesser number of specific years within a 2008-2017 qualifying period, with differing A- and B-season options.
 - Specifically, under Alternative 3, the total amount of Bering Sea subarea non-CDQ Pacific cod catcher vessel trawl sector A-season (Option: A- and B-season) allocation that can be delivered to catcher/processors limited by this action acting as a mothership is equal to the percentage of trawl catcher vessel sector's Bering Sea subarea BSAI Pacific cod delivered to catcher/processors acting as motherships relative to the total Bering Sea subarea catcher vessels trawl catch of non-CDQ Pacific cod between:
 - Option 1: 2015-2017
 - Option 2: 2016-2017
 - Option 3: 2008-2017
 - Option 4: 2008-2014
 - Only the catch of vessels delivering to qualified catcher/processors during the selected Alternative 3 qualifying period would be used as the numerator to determine the catcher/processor's mothership sideboard percentage.
 - Sub-option 1: A catcher/processor that received deliveries from the BSAI non-CDQ Pacific cod trawl catcher vessel sector allocation in seven or more years during 2008-2017 is not subject to the limitations on receiving deliveries under Alternative 3. Any history of vessels that qualify for this suboption will not count toward any limitation created under Alternative 3.
 - From a community impact perspective, it is important to note that while Alternative 3 would establish a maximum percentage of the Bering Sea portion of the BSAI non-CDQ directed Pacific cod catcher vessel trawl sector allocation that could be delivered to catcher/processors when acting as motherships (i.e., it would establish a single/common sideboard based on the aggregate histories of Amendment 80 and AFA catcher/processors receiving deliveries), it does not establish how much of that sideboard amount would actually be delivered to those vessels, nor would it limit the number of catcher vessels that could make BSAI non-CDQ directed Pacific cod trawl deliveries to those catcher/processors. Further, it does not limit the percentage of the BSAI non-CDQ directed Pacific cod catcher vessel trawl sector allocation that could be delivered to other processing vessels other than AFA and Amendment 80 catcher/processors, acting as motherships (i.e., it does not guarantee that a certain percentage of the BSAI non-CDQ directed Pacific cod catcher vessel trawl sector allocation would be delivered to shoreside processors).

- Alternative 4 would prohibit replaced Amendment 80 vessels from participating as motherships in the BSAI Pacific cod fishery and is designed to be selected in conjunction with Alternative 2 and/or Alternative 3 if the Council wishes to limit both active and replaced Amendment 80 vessels from acting as motherships in the BSAI Pacific cod trawl fishery. It is unique in that all other alternatives considered are specific to the BSAI; this alternative would limit Amendment 80 catcher/processors from acting as motherships for directed Pacific cod deliveries in both the BSAI and the Gulf of Alaska (GOA).
 - Specifically, under Alternative 4, all Amendment 80 vessels not designated on:
 - (1) An Amendment 80 quota share (QS) permit and an Amendment 80 LLP license; or
 - (2) An Amendment 80 LLP/QS license would be prohibited from receiving Pacific cod harvested in the Pacific cod directed fishery in the BSAI and GOA.
 - From a community impact perspective, Alternative 4 addresses an Amendment 80 replaced vessel issue limiting those vessels' ability to act as a mothership that was not directly addressed in Alternatives 2 and 3 and is not a stand-alone alternative.

Finally, the Council establishes a control date of December 31, 2017 that may be used as a reference date for a future management action to limit catcher/processor vessels from acting as motherships in the BSAI trawl catcher vessel Pacific cod fishery. The control date is specific to catcher/processors acting as a mothership. It does not apply to catcher vessels qualifying for Pacific cod endorsement on its LLP license.

The contentious nature of this action and its potential impacts have prompted the Council to conduct a social impact assessment of the alternatives being considered. This assessment is being completed in accordance Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) National Standard 8 and associated guidelines and is intended to provide information sufficient for the Council to adequately consider potential social and community impacts in its decision-making process, as outlined regulatory context discussion in the next section. Although it has been determined that the proposed action would not require preparation of an Environmental Assessment under National Environmental Policy Act (NEPA) nor an environmental justice analysis under Executive Order (EO) 12898, the information contained in this analysis is intended to help support such analyses should they later be deemed necessary, as also outlined in the next section.

2 Regulatory Context

This community-level social impact assessment of the proposed action is guided largely by National Standard 8 – Communities under the provisions of the Magnuson-Stevens Act; NEPA; and EO 12898, Federal Action to Address Environmental Justice in Minority Population and Low-Income Populations.

2.1 Magnuson-Stevens Act National Standard 8

National Standard 8 (50 CFR [Code of Federal Regulations] 600.345) specifies that conservation and management measures shall, consistent with the conservation requirements of the Magnuson-Stevens Act, take into account the importance of fishery resources to fishing communities by utilizing economic and social data that are based on the best scientific information available in order to (1) provide for the sustained participation of such communities, and (2) to the extent practicable, minimize adverse economic impacts to such communities. Per National Standard 8, the term “fishing community” means a community that is substantially dependent on or substantially engaged in the harvest or processing of fishery resources to meet social and economic needs, and includes fishing vessel owners, operators, and crew, and fish processors that are based in such communities. A fishing community is a social or economic group whose members reside in a specific location and share a common dependency on commercial, recreational, or subsistence fishing or directly related fisheries-dependent services and industries (for example, boatyards, ice suppliers, tackle shops). Also, per National Standard 8, the term “sustained participation” means continued access to the fishery within the constraints of the condition of the resource. Per the guidelines for National Standard 8:

FMPs [Fishery Management Plans] must examine the social and economic importance of fisheries to communities potentially affected by management measures. For example, severe reductions of harvests for conservation purposes may decrease employment opportunities for fishermen and processing plant workers, thereby adversely affecting their families and communities. Similarly, a management measure that results in the allocation of fishery resources among competing sectors of a fishery may benefit some communities at the expense of others (50 CFR 600.345).

2.2 Social and Economic Analysis Under NEPA

Under NEPA, “economic” and “social” effects are specific environmental consequences to be examined (40 CFR 1502.16 and 1508.8). Economic effects are examined primarily in the Regulatory Impact Review, a part of the main document to which this community analysis document is appended, while social effects (and community-level economic effects) are examined primarily in this section of the community analysis. Based on an initial screening, it has been determined that the proposed action would qualify for a Categorical Exclusion. This SIA has been designed to support in part a socioeconomic analysis that could be used in an Environmental Assessment, should one later be deemed necessary.

2.3 EO 12898 Environmental Justice

EO 12898 (59 FR 7629; February 16, 1994) directs Federal agencies “to make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations.” The EO directs the development of agency strategies to include identification of differential patterns of consumption of natural resources among minority populations and low-income populations; Council on Environmental Quality (CEQ) environmental justice guidance under NEPA also specifically calls for consideration of potential disproportionately high and

adverse impacts to Indian tribes¹ beyond a more general consideration of potential disproportionately high and adverse impacts to minority populations (Council on Environmental Quality 1997).² Given that the proposed action has been determined to qualify for a Categorical Exclusion, however, this SIA does not contain an environmental justice analysis. Demographic and economic information has, however, been provided that would help support such an analysis, should one later be deemed necessary.

¹ The term Indian tribe is retained due to its use in both the EO and CEQ guidance; the provisions of the EO and CEQ guidance are understood to apply to Alaska Native tribes in the region potentially affected by the proposed action alternatives.

² Per CEQ guidance on environmental justice, under NEPA, the identification of a disproportionately high and adverse human health or environmental effect (including interrelated social, cultural, and economic effects) on a low-income population, minority population, or Indian tribe does not preclude a proposed agency action from going forward, nor does it necessarily compel a conclusion that a proposed action is environmentally unsatisfactory. Rather, the identification of such an effect should heighten agency attention to alternatives, mitigation strategies, monitoring needs, and preferences expressed by the affected community or population. Further, per CEQ guidance, agencies should recognize the interrelated cultural, social, occupational, historical, or economic factors that may amplify the natural and physical environmental effects of the proposed agency action. The factors should include the physical sensitivity of the community or population to particular impacts; the effect of any disruption on the community structure associated with the proposed action; and the nature and degree of impact on the physical and social structure of the community.

3 Introduction and Methodology

3.1 General Approach

For the purposes of this social/community impact assessment, a two-pronged approach to analyzing the community or regional components the social and economic importance of changes associated with the implementation of a BSAI trawl catcher vessel Pacific cod mothership limitation management program was utilized. First, tables based on existing quantitative fishery information were developed to identify patterns of participation in the various relevant components of BSAI non-CDQ directed³ Pacific cod trawl fishery. This is consistent with consistent with the portion of the National Standard 8 guidelines that state:

To address the sustained participation of fishing communities that will be affected by management measures, the analysis should first identify affected fishing communities and then assess their differing levels of dependence on and engagement in the fishery being regulated (50 CFR 600.345⁴).

The second approach to producing this community analysis involved selecting a subset of Alaska communities engaged in the BSAI non-CDQ directed Pacific cod trawl fishery for characterization of the community context of the relevant fisheries to describe the range, direction, and order of magnitude of social- and community-level engagement and dependency on those fisheries. The approach of using a subset of communities rather than attempting characterization of all the communities in the region(s) involved was chosen due to the practicalities of time and resource constraints. This is consistent with the portion of the National Standard 8 guidelines that state:

The best available data on the history, extent, and type of participation in these fishing communities in the fishery should be incorporated into the social and economic information presented in the FMP. The analysis does not have to contain an exhaustive listing of all communities that might fit the definition; a judgment can be made as to which are primarily affected (50 CFR 600.345).

This characterization has been undertaken with existing information (as supplemented with phone and email contact with a limited number of individuals). Fieldwork has not been undertaken in any of the communities.

³ The terms directed fishery and target fishery are often used interchangeably but have slightly different meanings. A target fishery is not defined in regulation but is a flag that is applied to catch data to identify the species that comprised the majority of a landing. Directed fishing is defined at 50 CFR 679 as any fishing activity that results in the retention of an amount of a species or species group on board a vessel that is greater than the maximum retainable amount for that species or species group. In other words, the directed fishery definition is used to help in-season management manage fisheries and enforcement staff to determine if harvest limits are exceeded when a fishery is closed to directed fishing. Relevant to this SIA analysis, directed fishing activity is what would be limited by the proposed action alternatives, but qualification under Alternative 2 is based on the target definition that has been applied to the historical catch data. Similarly, the quantitative measures of fishing community engagement and dependency shown in this SIA are based on the target definition that has been applied to the historical catch data.

⁴The National Standard 8 guidelines referenced in this SIA, current as of December 20, 2018, are from the Electronic Code of Federal Regulations (CFR) Title 50, Chapter VI, Part 600, Subpart D, Section 600.345 (cited as 50 CFR 600.345) are available at https://www.ecfr.gov/cgi-bin/retrieveECFR?gp=&SID=6b0acea089174af8594db02314f26914&mc=true&r=SECTION&n=se50.12.600_1345 accessed 12/31/18.

3.2 Quantitative Measures of Fishing Community Engagement and Dependency

Summary tables, typically including time series data indicative of fishery engagement and/or fishery economic dependence from 2008 through 2018, are presented in Section 4.0, along with accompanying narrative. This analysis focuses on the distribution of relevant fishery sectors (primarily catcher vessels and associated ex-vessel gross revenues, catcher/processors and associated first wholesale gross revenues, and/or shoreside processors and associated first wholesale gross revenues) across regions and communities and follows annual and average participation indicators.

Within this quantitative characterization of fishery participation, several simplifying assumptions were made. For the purposes of this analysis, assignment of catcher vessels (and catcher/processors) to a region or community has been made based upon ownership address information as listed in the Alaska Commercial Fisheries Entry Commission (CFEC) vessel registration files. Thus, some caution in the interpretation of this information is warranted. It is not unusual for vessels to have complex ownership structures involving more than one entity in more than one region. Further, the community of ownership address does not directly indicate where a vessel spends most of its time, purchases services, or hires its crew as, for example, some of the vessels owned by residents of the Pacific Northwest spend a great deal of time in Alaska ports and hire at least some crew members from these ports. The region or community of ownership, however, does provide a rough indicator of the direction or nature of ownership ties (and a proxy for associated economic activity, as no existing datasets provide information on where BSAI trawl catcher vessel earnings are spent), especially when patterns are viewed at the sector or vessel class level. Ownership location has further been chosen for this analysis as the link of vessels to communities rather than other indicators, such as vessel homeport information, based on previous NPFMC FMP social impact assessment experience (e.g., AECOM 2010) that indicated the problematic nature of existing homeport data. Similarly, LLP licenses have been assigned to communities based on license ownership address as it appears in the Alaska Regional Office Restricted Access Management (RAM) Program LLP license database used for this analysis.⁵

For shoreside processors, regional or community designation was based on the operating location of the plant (rather than ownership address) to provide a relative indicator of the local volume of fishery-related economic activity, which can also serve as a rough proxy for the relative level of associated employment and local government revenues. This is also consistent with established NPFMC FMP social impact assessment practice.

There are, however, considerable limitations on the data that can be utilized for these purposes, based on confidentiality restrictions. A prime example of this is where a community is the site of one or two shoreside processors active in a community in a given year. No information can be disclosed about the volume and/or value of landings in those communities. This, obviously, severely limits quantitative discussions of the potential impacts of the management alternatives being analyzed. In short, the frame of reference or unit of analysis for the discussion in this section is the individual sector, and the analysis looks at how engagement in the fishery most likely to be directly affected by the proposed management actions has been differentially distributed across communities and regions within this framework. The practicalities of data limitations, however, serve to restrict this discussion.

⁵ A later section of the document (Section 5.4) provides a set of cross-walk tables showing the correspondence of community of vessel ownership address and homeport, community of vessel ownership address and community of LLP license ownership address, and the like for the most recent year for which data are available.

3.3 The Community Context of Fishery Engagement and Dependency

The communities engaged in the fishery are numerous and far-flung. Communities (and types of potential impacts) vary based upon the type of engagement of the individual community in the fishery, whether it is through being a community of ownership of a portion of the catcher vessel fleet; being the location of shoreside processing; being the base of catcher/processor or inshore floating processor ownership or activity; or being the location of fishery support sector businesses. In short, this second approach uses the community or region as the frame of reference or unit of analysis (as opposed to the fishery sector as in the first approach). This approach examines, within the community or region, the local nature of engagement or dependence on the fishery in terms of the various sectors present in the community and the relationship of those sectors (in terms of size and composition, among other factors) to the rest of the local social and economic context. This approach then qualitatively provides a context for potential community impacts that may occur because of fishery management-associated changes to the locally present sectors in combination with other community-specific attributes and socioeconomic characteristics.

Simplifying assumptions also needed to be made as to which communities to include in the profiles, given the large number of communities participating in the fisheries, the desire to focus on the communities most clearly substantially engaged in and/or substantially dependent on the fishery (and therefore most likely to be directly affected by proposed management actions), a recognition that communities with multi-sector activity may be more or less vulnerable to potential adverse impacts related to the proposed fishery management changes based on the particular sectors present specific communities,⁶ and, most importantly based on the purpose and need statement, those specific communities that would likely be primarily be affected due to their being substantially engaged in and/or substantially dependent upon shoreside processing of Bering Sea non-CDQ directed Pacific cod fishery catcher vessel trawl-caught deliveries. Importantly, the communities substantially engaged in and substantially dependent on shoreside processing of *Bering Sea* non-CDQ directed Pacific cod fishery catcher vessel trawl-caught deliveries (and therefore potentially directly affected by the proposed action) are not the same as the communities substantially engaged in and substantially dependent on shoreside processing of *Aleutian Islands* non-CDQ directed Pacific cod fishery catcher vessel trawl-caught deliveries (and therefore not potentially directly affected by the proposed action, although potentially subject to indirect effects).

Thus, the communities selected for inclusion in the set of community profiles that appear in Section 5 of this SIA were those three Alaska communities that had, on average, more than 0.5 shoreside processors engaged in the processing of Bering Sea non-CDQ directed Pacific cod fishery catcher vessel trawl-caught deliveries annually over the period 2008-2018: Unalaska/Dutch Harbor, Akutan, and King Cove. Unalaska/Dutch Harbor averaged 3.4 processors engaged in the fishery annually (if the entities listed in the data as operating in Anchorage but known to have operated in Unalaska/Dutch Harbor are included in the community tally), while Akutan had one processor engaged in the fishery each year and King Cove had one processor engaged in the fishery 9 out of 11 years in the period.⁷ Additionally, Unalaska/Dutch

⁶ For example, if multiple fishery sectors present in a community were all adversely affected by a proposed management action, then those combined impacts, at the community level, may be greater than the sum of individual sector impacts as, for example, direct fishery support sector businesses or municipal services are, in turn, adversely affected. Alternatively, if some locally present fishery sectors were adversely affected and some locally present fishery sectors were beneficially affected, then those combined impacts, when aggregated at the community level, may in whole or in part cancel one another out, with the beneficial impacts to some sector or sectors effectively minimizing or offsetting the adverse impacts to another sector or sectors.

⁷ Two other communities appear in the data as having shoreside processing *BSAI* non-CDQ directed Pacific cod fishery catcher vessel trawl-caught deliveries in 2008-2018: Adak and Sand Point. The shoreside processor in Adak, however, accepted deliveries of *Aleutian Islands* non-CDQ directed Pacific cod fishery catcher vessel trawl-caught deliveries in 7 out of the 11 years during this period, but no *Bering Sea* non-CDQ directed Pacific cod fishery

Harbor is a center of multi-sector activity given its functioning as the primary Alaska port supporting multiple sectors operating in the Bering Sea non-CDQ directed Pacific cod trawl fishery. The summary profiles of each of these communities presented in Section 5.0 are largely derived from earlier detailed community profiling efforts, the results of which are in part included in this analysis and in part included in other documents incorporated by reference. These summary profiles have also been supplemented with newly developed fishery engagement and dependency information relevant to the present analysis.

Additionally, several other groupings of communities are described in less detail in Section 5. These include two groupings of Alaska communities and two groupings of Pacific Northwest communities, based on specific types of engagement in and dependency on the BSAI non-CDQ directed Pacific cod trawl fishery. These (and their reasons for inclusion) are:

- Kodiak and Sand Point
 - Kodiak is the Alaska community most substantially engaged in the fishery through local ownership of participating catcher vessels.
 - Sand Point is the only Alaska community outside of the three communities that are profiled in greater detail that has been the location of fishery engagement through shoreside processing of Bering Sea non-CDQ directed Pacific cod fishery catcher vessel trawl-caught deliveries
- Adak and Atka
 - Adak is the only community that to date has directly benefitted from Aleutian Islands non-CDQ directed Pacific cod fishery shoreside processing-oriented community protection measures under Amendments 92 and 113.
 - Atka as the only community other than Adak that has the potential to directly benefit from Aleutian Islands non-CDQ directed Pacific cod fishery community protection measures under Amendments 92 and 113.
- Pacific Northwest Communities/Aggregations of Communities
 - Seattle Metropolitan Area (Seattle MSA⁸) as the center of catcher vessel ownership, catcher/processor ownership, and inshore floating processor ownership in the fishery and the major support service supplier for multiple sectors in the fishery.
 - Newport, Oregon as a center of catcher vessel ownership in the fishery.

The level of detail provided in the community profiles varies by nature and relative order of magnitude of community engagement in the fishery and, therefore, the likelihood that these communities could experience community-level social impacts because of the implementation of one or more of the proposed management alternatives. The more detailed community descriptions for the communities of Unalaska/Dutch Harbor, Akutan, and King Cove, include summary information on local demographics, the local economy and socioeconomic context, commercial fisheries engagement through the harvest and

catcher vessel trawl-caught deliveries in any of the years, with the exception a delivery or deliveries from one catcher vessel in one year (2008). The shoreside processor in Sand Point accepted deliveries of **Bering Sea** non-CDQ directed Pacific cod fishery catcher vessel trawl-caught deliveries in 6 out of the 11 years during this period but no **Aleutian Islands** non-CDQ directed Pacific cod fishery catcher vessel trawl-caught deliveries in any of the years during this period.

⁸ The Seattle-Tacoma-Bellevue Metropolitan Statistical Area, referred to as the “Seattle MSA” in this document, is a U.S. Census Bureau defined region used to tabulate the metropolitan area in and around Seattle, Washington. It includes of King, Pierce, and Snohomish counties.

processing sectors, subsistence fishing engagement, local fishing support services, and public revenues. For the communities described in less detail, relevant information is presented in more abbreviated form, and then only to the extent necessary to contextualize the community's specific type of limited involvement in relevant aspects of the BSAI non-CDQ directed Pacific cod trawl fishery.

With respect to public revenues that derive from fish taxes in Alaska, general information is provided in Section 9.3.1 (in Attachment C). Specific information on revenues accruing to communities from shared state fish taxes (the Fisheries Business Tax and the Resource Landing Tax) is available from the State of Alaska Division of Revenue Tax Division⁹, while information on municipal landing taxes may be found in annual budget documents available from the State of Alaska Department of Commerce, Community, and Economic Development.¹⁰ Because of different reporting periods and the time differences in when taxes are collected by the state and received by the communities, the tables of fishery related revenues that appear in the community profiles use local budget documents as their primary sources for comparability within any given year.¹¹

The location of the Alaska communities listed above and their proximity to the BSAI management areas and the halibut regulatory areas in the BSAI may be seen in Figure 1. This figure also includes other Alaska communities mentioned in the text and tables of this SIA as having at least minimal direct involvement in the BSAI non-CDQ directed Pacific cod trawl fishery through being the community of ownership address of relevant catcher vessels, catcher/processors, or LLP licenses; the homeport of relevant catcher vessels and/or catcher/processors; and/or the community of residence of crew members aboard relevant catcher vessels or catcher/processors for which such data exist during the period 2008-2018 or the most recent data year, depending on the variable. This total group of communities includes three communities (Akutan, Atka, and False Pass) that belong to the Aleutian Pribilof Island Community Development Association (APICDA) CDQ group. One community from each of the other CDQ groups has been added to the figure for general orientation purposes: Nome (Norton Sound Economic Development Corporation), Mountain Village (Yukon Delta Fisheries Development Association), Chevak (Coastal Villages Region Fund), St. Paul (Central Bering Sea Fishermen's Association), and Dillingham (Bristol Bay Economic Development Corporation).¹²

The location of the Seattle MSA and Newport, Oregon may be seen in Figure 2. This figure also includes other Washington and Oregon communities mentioned in the text and tables of this SIA as being at least minimally directly engaged in the BSAI non-CDQ directed Pacific cod trawl fishery through being the community of ownership address of relevant catcher vessels, catcher/processors, or LLP licenses; and/or the homeport of relevant catcher vessels and/or catcher/processors during the period 2008-2018 or the most recent data year, depending on the variable. It does not include the communities of residence of crew members aboard relevant catcher vessels or catcher/processors.

⁹ <http://tax.alaska.gov/programs/sourcebook/index.aspx> Accessed 1/6/2019.

¹⁰ <https://www.commerce.alaska.gov/dcra/dcrarepoext/Pages/FinancialDocumentsLibrary.aspx> Accessed 1/6/2019.

¹¹ The challenges inherent using time series revenue information to track impacts of specific fishery management actions was noted in the crab rationalization 3-year program review SIA (EDAW 2008b) and is provided for illustrative purposes in Section 9.3.3 (in Attachment C).

¹² Some of these CDQ groups may be involved as owners of or partners in entities that were direct participants in the BSAI non-CDQ directed Pacific cod fishery sectors that would be impacted by one or more of the proposed management alternatives analyzed in this SIA. For example, it is common knowledge that NSEDC was directly engaged in the shoreside processing sector as a partner in a processing entity with a facility that operated in Unalaska/Dutch Harbor and accepted BSAI non-CDQ directed Pacific cod fishery trawl-caught deliveries in at least some years in or around 2011-2014.

Figure 1. Map of Selected Alaska Communities and Adjacent Federal and International Pacific Halibut Commission Fisheries Regulatory Areas

<< PLACEHOLDER >>

Figure 2. Map of Selected Washington and Oregon Communities

<< PLACEHOLDER >>

3.4 Analysis of Alternatives

Section 6.0 provides a summary of potential community-level impacts by alternative. The analysis in that section is driven by the following components of the National Standard 8 guidelines:

- *The analysis should discuss each alternative’s likely effect on the sustained participation of these fishing communities in the fishery.*
- *The analysis should assess the likely positive and negative social and economic impacts of the alternative management measures, over both the short and the long term, on fishing communities. Any particular management measure may economically benefit some communities while adversely affecting others. Economic impacts should be considered both for individual communities and for the group of all affected communities identified in the FMP.¹³*
- *A discussion of social and economic impacts should identify those alternatives that would minimize adverse impacts on these fishing communities within the constraints of conservation and management goals of the FMP, other national standards, and other applicable law (50 CFR 600.345).*

With respect to environmental justice foundational data presented by community in Section 5, for a minority population to be identified as one of potential concern, the proportion of minority residents in the geography being analyzed would need to be meaningfully greater than that of the general population and/or greater than 50 percent of the total population in the geography being analyzed. For a low-income population to be identified as of potential concern with respect to environmental justice analysis, the proportion of low-income residents in the geography being analyzed would need to be meaningfully greater than that of the general population. For analysis of Alaska communities, the general population used as a benchmark is that of the state of Alaska itself.

- Census figures from 2010 show that 66.5 percent of the residents of Alaska identified themselves as White, 14.1 percent as American Indian or Alaska Native, 3.5 percent as Black/African American, 5.6 percent as Asian, 1.1 percent as Pacific Islander, and 9.2 percent as “some other race” or “two or more races.” Finally, 6.2 percent of the residents of any race in Alaska identified themselves as Hispanic. Based on race and ethnicity combined, 37.1 percent of Alaska’s total population was composed of minority residents (that is, all residents other than those identified as White/non-Hispanic [race/ethnicity]).
- The latest employment estimate based on the 2013-2017 U.S. Census American Community Survey suggests that 354,045 were employed in the state of Alaska with an unemployment rate of 7.7 percent. Per capita income for people in Alaska was estimated at \$35,065, median household income was \$76,114, and median family income was \$88,949. An estimated 10.2 percent of Alaska’s residents were considered low-income, defined as those individuals living below the poverty level threshold (U.S. Census Bureau 2018).

For analysis of the Seattle MSA, where the demographics of individual sectors are known, the general population used as a benchmark is that of the state of Washington itself.

¹³ This portion of the National Standard 8 guidelines also includes the following: “*Impacts of both consumptive and non-consumptive uses of fishery resources should be considered.*” There are no known non-consumptive uses of BSAI non-CDQ directed trawl fishery Pacific cod that would be relevant to this analysis. This topic is not considered further in this SIA.

- Census figures from 2010 show that 77.3 percent of the residents of Washington identified themselves as White, 1.5 percent as American Indian or Alaska Native, 3.6 percent as Black/African American, 7.2 percent as Asian, 0.6 percent as Pacific Islander, and 9.9 percent as “some other race” or “two or more races.” Finally, 11.2 percent of the residents of any race in Washington identified themselves as Hispanic. Based on race and ethnicity combined, 27.5 percent of Washington’s total population was composed of minority residents (that is, all residents other than those identified as White/non-Hispanic [race/ethnicity]) (U.S. Census Bureau 2011).
- The latest employment estimate based on the 2013-2017 U.S. Census American Community Survey suggests that 3,418,123 were employed in the state of Washington with an unemployment rate of 6.0 percent. Per capita income for people in Washington was estimated at \$34,869, median household income was \$66,174, and median family income was \$80,233. An estimated 12.2 percent of Washington’s residents were considered low-income, defined as those individuals living below the poverty level threshold (U.S. Census Bureau 2018).

Similarly, for analysis of the Newport, where the demographics of individual sectors are known, the general population used as a benchmark is that of the state of Oregon itself.

- Census figures from 2010 show that 83.6 percent of the residents of Oregon identified themselves as White, 1.4 percent as American Indian or Alaska Native, 1.8 percent as Black/African American, 3.7 percent as Asian, 0.3 percent as Pacific Islander, and 9.1 percent as “some other race” or “two or more races.” Finally, 11.7 percent of the residents of any race in Oregon identified themselves as Hispanic. Based on race and ethnicity combined, 21.5 percent of Oregon’s total population was composed of minority residents (that is, all residents other than those identified as White/non-Hispanic [race/ethnicity]) (U.S. Census Bureau 2011).
- The latest employment estimate based on the 2013-2017 U.S. Census American Community Survey suggests that 1,885,983 were employed in the state of Oregon with an unemployment rate of 6.8 percent. Per capita income for people in Oregon was estimated at \$30,410, median household income was \$56,119, and median family income was \$69,031. An estimated 14.9 percent of Oregon’s residents were considered low-income, defined as those individuals living below the poverty level threshold (U.S. Census Bureau 2018).

3.5 Data that would have been Useful but was Not Available

3.5.1 Location of Operation Data for Inshore Floating Processors

Inshore floating processors, if their location of operation is known to be within the municipal boundaries of an Alaska community, are attributed as shoreside processors operating in that community, as their operations are taxed in the same manner as shore-based processing plants, they may use utilities and port and harbor services like other processors, buy goods and services from the local support service sector, and generally may be more or less functionally equivalent to shore-based processing facilities. Location of operation, however, is not specified in some of the key data used for this analysis. The shoreside processing activity attributed to Seattle in this SIA, as noted in Section 4.4 is actually activity associated with inshore floating processors with Seattle ownership addresses operating in Alaska waters but for which good operation location data are not available.

Also, as noted in Section 4.4, from a community impact perspective, inshore floating processors operating outside of a community’s municipal boundaries have a different type of engagement with

even nearby Alaska communities than do shoreside processors, including inshore floating processors, operating in those communities. For example, while not shown in the data, one inshore floating processor is known to have operated in Unalaska Island’s Beaver Inlet, outside of the municipal boundaries of the City of Unalaska, during multiple years 2008-2018. While Unalaska/Dutch Harbor derived a level of benefit from support activities for this operation that occurred in the community, it was a different order of magnitude than the benefits that accrued from the activities of shoreside processors operating within the community during this same period that, among others, included accepting commercial fisheries landings on a regular basis that generated substantial public revenue in the form of payment of city fish taxes. This same processing platform is known to have permanently moved inside city boundaries in late 2017 (McDowell Group, 2018), but is not shown in the available data as doing so.

3.5.2 EDR Data for BSAI Crew Employment and Earnings

In the absence of Economic Data Report (EDR) data for BSAI trawl catcher vessel crew employment and earnings, GOA EDR data for crew on trawl catcher vessels that reported EDR data for the GOA and operated in the both the BSAI and GOA in 2016 (the most recent year for which data are available) were used. As shown in Table 1, the available data were limited.

Table 1: BSAI Non-CDQ Directed Pacific Cod Trawl Fishery Catcher Vessels that Filed GOA EDR Report, 2016

Community of Ownership Address of CV (most current data year)	CVs Active in BSAI Non- CDQ Directed Pacific Cod Trawl Fishery 2016	CVs Active in BSAI Non-CDQ Directed Pacific Cod Trawl Fishery 2016 that filed GOA EDR 2016 (number)	CVs Active in BSAI BSAI Non- CDQ Directed Pacific Cod Trawl Fishery 2016 that filed GOA EDR 2016 (percent)	CVs Active in BSAI Non- CDQ Directed Pacific Cod Trawl Fishery any year 2009-2018	CVs Active in BSAI Non-CDQ Directed Pacific Cod Trawl Fishery any year 2009-2018 that filed GOA EDR 2016 (percent)
Kodiak	2	2	100.0%	7	28.6%
Oregon	9	3	33.3%	12	25.0%
Washington	45	18	40.0%	62	29.0%
ALL COMMUNITIES	56	23	41.1%	81	28.4%

Source: GOA Catcher Vessel EDRs.

It was assumed that these data were still useful for rough numbers of crew members for the limited number of vessels for which data exist, as vessels likely had similar crews for both the BSAI and GOA trawl groundfish fisheries, but no crew earnings data were applicable to the Bering Sea fisheries. Overall, the unavailability of BSAI-specific data in combination of the total unavailability of data for a substantial number of catcher vessels that participated in the BSAI non-CDQ directed Pacific cod trawl fishery is a substantive obstacle to a comprehensive analysis of the human dimensions of the fishery and the community footprint of potential social impacts associated with the proposed management actions.

No EDR deck or processing crew employment and earnings data were available for non-Amendment 80 catcher/processors that acted as motherships in accepting BSAI non-CDQ directed Pacific cod trawl fishery catcher vessel deliveries. No EDR processing crew employment and earnings data similar to those available for GOA groundfish shore-based processors were available for Bering Sea groundfish shoreside processors. Overall, the unavailability of these data is also a substantive obstacle to a comprehensive analysis of the human dimensions of the fishery and the community footprint of potential social impacts associated with the proposed management actions.

3.5.3 First Wholesale Value of Products Produced by BSAI Shoreside Processors for Species Other Than Groundfish

Alaska Fisheries Information Network (AKFIN) staff have provided data to show the relative economic importance of species (and single species harvested in different area and gear fisheries) processed by shoreside processing firms that take deliveries of BSAI Pacific cod. This shoreside processor “diversity” information is intended, in part, to provide quantitatively based insight into the level of engagement in and/or dependency on a particular fishery by shoreside processors operating in a given community or group of communities, as measured by gross or, better, net revenues.

Ideally, these comparisons of relative engagement/dependency would be made at the first wholesale level and reflect net income to the effected processors. However, at least two limitations in the available data prevent that approach. The first limitation is the lack of complete fixed cost and variable cost information to deduct from the gross revenue to calculate the gross margin. If only variable cost data were available, the contribution margin, or dollar contribution per unit, could be calculated. The lack of both types of cost data prevent the calculation of any measure of economic efficiency within or between sectors.

The second limitation results from a lack of comparable first wholesale gross revenue values across all species. AKFIN has reliable estimates of first wholesale gross revenues for groundfish species, but first wholesale gross revenue estimates for halibut, crab, herring, and salmon are less reliable. To generate the latter estimates, AKFIN staff must use value data from Commercial Operator Annual Report (COAR) forms and landings data from the Catch Accounting System (CAS) data. Previous attempts to generate comparable information by species have not provided results deemed sufficiently reliable for routine use in the analysis of management actions. Therefore, AKFIN staff provide comparisons of ex-vessel expenditures by species/fishery for shoreside processors processor diversification comparisons in the absence of more useful data. Comparing ex-vessel value at the processor level, however, reflects a cost to the processor and not income. As a result, the comparison should be considered a very rough proxy for the analysis of the importance of each species or species group to the economic viability of processing firms and, by extension, to the communities in which they operate.

3.5.4 Systematically Collected Time Series Data on Fisheries Support Service Sector Entities and Community Patterns of Catcher Vessel, Catcher/Processor, and Shoreside Processor Expenditures

No systematically collected time series data are available support services in the relevant fishing communities. While comprehensive fishing community profiles of the key communities of Adak, Unalaska/Dutch Harbor, Akutan, King Cove, Sand Point, and Kodiak are available and contain detailed information on fishery support service businesses, these profiles are now dated to varying degrees. Compiled in part using ethnographic research in each community, these profiles include operational profiles and qualitative employment information for attempted 100 percent samples of known direct fishery support service businesses in all communities except Kodiak, where representative samples were sought.

If systematically collected time series data on catcher vessel, catcher/processor, and shoreside processor support service expenditures by community and type of service provider were available, more accurate social and economic analyses of sector and community impacts would be possible, including a more accurate picture of local multipliers for fishery related expenditures. Additionally, this type of information would help in associating vessels with particular communities based on

quantitative data for the purposes of social impact assessment as a supplement to, if not a replacement for, assigning vessels to communities based on for example, ownership address, homeport, or LLP license ownership address as proxies for revenue flows.

3.5.5 Current Data on Subsistence Harvest and Use of Pacific Cod

Subsistence use of Pacific cod has deep roots and remain important parts of the social, cultural, and economic fabric of life in the communities of the greater Aleutian region. Pacific cod shows up as a resource in the archaeological record and patterns of use continue to evolve. In the communities of central focus of this analysis (Unalaska/Dutch Harbor, Akutan, and King Cove), commercial and subsistence fisheries are intertwined. For example, while Pacific cod is still retained for subsistence or personal use from commercial catch, recent work (Reedy-Maschner and Maschner 2012) finds a significant amount of wild foods formerly harvested are now purchased or increasingly purchased. Pacific cod in particular is often purchased from processors after being de-wormed (Reedy 2016). Some of these purchases are from processors operating in the community, while others are not. While there are no direct, significant impacts anticipated to subsistence as a result of this action, indirect and/or cumulative impacts could occur. Further, information on subsistence harvest and use of BSAI Pacific cod in some of the key commercial fishing communities relevant to this analysis of the proposed management actions is dated. This limits the ability to fully analyze potential interactive commercial and subsistence fishery impacts.

3.5.6 Local Knowledge and Traditional Knowledge

Per National Standard 2 – Scientific Information (a)(6)(ii)(C):

Relevant local and traditional knowledge (e.g., fishermen’s empirical knowledge about the behavior and distribution of fish stocks) should be obtained, where appropriate, and considered when evaluating the BSIA [best scientific information available] (50 CFR 600.315¹⁴)

There are no known documented sources of traditional knowledge or local knowledge that would directly inform the analysis of the management actions being analyzed in this document, based in part on the nature of the proposed management action(s). Specifically, the proposed management alternatives are a range of highly specified approaches directed toward a geographically broad-ranging allocation issue (the destination of BSAI non-CDQ directed Pacific cod fishery catcher vessel trawl-caught deliveries, i.e., limitations on what proportion of the trawl catcher vessel sector allocation may be delivered to certain catcher/processors acting as motherships versus what proportion of the trawl catcher vessel sector allocation would be delivered to other processors). This mixture of highly specified detail in alternatives about a fairly broad issue makes determining the appropriate potential sources of traditional knowledge or local knowledge to inform management not possible at this time.

That is not to say that traditional knowledge and/or local knowledge that could inform the analysis of impacts of the proposed management actions on specific communities or sets of communities does not exist. Rather, that information is not currently known to have been documented or have been otherwise readily available to or accessible by the study team.

¹⁴ The National Standard 2 guidelines referenced in this SIA, current as of December 20, 2018, are from the Electronic Code of Federal Regulations (CFR) Title 50, Chapter VI, Part 600, Subpart D, Section 600.315 (cited as 50 CFR 600.315) are available at https://www.ecfr.gov/cgi-bin/retrieveECFR?gp=&SID=6b0acea089174af8594db02314f26914&mc=true&r=SECTION&n=se50.12.600_13_15 accessed 12/31/18.

Further, it is relevant to note that Action Module 4 of the Bering Sea Fishery Ecosystem Plan (FEP) aims to develop protocols for using local knowledge and traditional knowledge¹⁵ in management and understanding potential impacts of Council decisions on subsistence use. The Bering Sea FEP Core document was approved by the Council in December 2018. Action Module 4 from the Bering Sea FEP was prioritized at that time and progress is expected to be made during 2019. Thus, in the near future, it is likely the Council will be increasingly receiving information from local knowledge and traditional knowledge sources in management action analyses.

¹⁵ See Section 9.1 (Attachment A): Defining Local Knowledge and Traditional Knowledge (excerpted from the Draft Bering Sea FEP, November 2018) for additional definitional detail.

4 Quantitative Indicators of Community Fishery Engagement and Dependency

The sections below provide quantitative participation information, within the bounds of confidentiality restrictions, for the communities most directly engaged in and dependent on the BSAI non-CDQ directed Pacific cod trawl fishery. Specifically, each section includes a series of tables containing a range of quantitative information describing the distribution of sector-specific community engagement (or participation) in and dependency (or reliance) on the BSAI Pacific cod trawl fishery for the following sectors:

- BSAI non-CDQ directed Pacific cod trawl fishery catcher vessels (Section 4.1)
- Vessels with catcher/processor endorsed LLP licenses functioning as catcher vessels in the BSAI non-CDQ directed Pacific cod trawl fishery (Section 4.2)
- Catcher/processors that accepted BSAI non-CDQ directed Pacific cod trawl fishery catcher vessel deliveries (i.e., catcher/processors that acted as motherships in this fishery) (Section 4.3)
- Shoreside processors accepting BSAI non-CDQ directed Pacific cod fishery trawl-caught deliveries (Section 4.4)

This information is summarized, on a community-by-community basis, in the community specific discussions in Section 5 of this document.

4.1 BSAI Non-CDQ Directed Pacific Cod Trawl Fishery Catcher Vessels

Table 2 provides a count of catcher vessels engaged in the BSAI non-CDQ directed Pacific cod trawl fishery by community of vessel historic ownership¹⁶ address, by year (2008-2018), for all Alaska, Washington, and Oregon communities, along with state totals for Alaska, Oregon, Washington, and all other states combined. This count includes any vessel active (i.e., a vessel that made landings) in the non-CDQ directed BSAI Pacific cod trawl fishery in at least one year during this time period. As shown, the largest component of fleet ownership during any given year is typically in Washington, followed by Oregon, Alaska, and all other states combined, except for the first two years when the positions of Alaska and all other states combined were reversed. Within Alaska, vessels have been exclusively concentrated in Kodiak, except for the first two years when a Sand Point vessel was active.

Table 3 provides BSAI non-CDQ directed Pacific cod trawl fishery catcher vessel ex-vessel gross revenue information (from Pacific cod caught in the BSAI non-CDQ directed Pacific cod fishery only) by community of historic vessel ownership address and year (2008-2018) to the extent possible within data confidentiality restrictions. As shown, within Alaska, only information for Kodiak can be disclosed on an individual community basis, and then for not all years, but clearly apparent is the economic importance of the Kodiak fleet for this fishery relative to the other communities within the state of Alaska. Overall, the economic importance of the Washington and Oregon fleets to the overall fishery are also readily apparent.

¹⁶ Historic ownership address is defined as the vessel ownership address in the year that relevant landings were made (as opposed to the current ownership address of that same vessel, if different).

Table 4 provides information on BSAI non-CDQ directed Pacific cod trawl fishery catcher vessels ex-vessel gross revenue diversification by community of vessel historic ownership address 2008-2017.¹⁷ This shows relative dependency of BSAI non-CDQ directed Pacific cod trawl fishery catcher vessels on that specific fishery compared to all other areas, gear types, and species fisheries pursued by those same vessels, as measured in the proportion of total ex-vessel gross revenues on an annual average basis. As shown, ex-vessel gross revenues from the BSAI non-CDQ directed Pacific cod trawl fishery itself are roughly seven percent of all ex-vessel gross revenues for Kodiak vessels that participate in the BSAI non-CDQ directed Pacific cod trawl fishery. As also shown, relative dependency is substantially higher for vessels with Oregon and Washington ownership addresses.

Table 5 provides information on BSAI non-CDQ directed Pacific cod fishery trawl catcher vessel and all catcher vessel ex-vessel gross revenue diversification by community of vessel historic ownership address, 2008-2017. This shows overall community catcher vessel fleet relative dependency on BSAI non-CDQ directed fishery trawl-caught Pacific cod (i.e., the aggregated dependency of all locally owned commercial fishing catcher vessels [the “community CV fleet”], not just catcher vessels with local ownership addresses that participated in the BSAI non-CDQ directed Pacific cod trawl fishery 2008-2018) compared to all other areas, gear types, and species fished by the overall community CV fleet, as measured by percentage of total ex-vessel gross revenues, to the extent possible given data confidentiality restrictions. As shown, the BSAI non-CDQ directed Pacific cod trawl fishery accounted for about one-half of one percent of the total ex-vessel gross revenues for the Kodiak community CV fleet as a whole, roughly 14 percent of total ex-vessel gross revenues for the Newport community CV fleet as a whole, and about four percent for the Seattle MSA community CV fleet as a whole.

Table 6 provides information on the AFA program derived status of BSAI non-CDQ directed Pacific cod trawl fishery catcher vessel LLP license by community and region of license current ownership address. All else being equal, AFA-derived LLP licenses used by vessels in an AFA co-op are likely less vulnerable to proposed actions in this amendment than LLP licenses used on vessels that are not associated with an AFA co-op. Potential adverse impacts of the proposed alternatives that result from limiting offshore markets, limiting the amount of Pacific cod that could be delivered to certain catcher/processors, or issuing endorsements that could reduce the ability of the LLP holder to participate in the directed BSAI non-CDQ Pacific cod trawl fishery could be addressed through co-op or other internal vessel class compensation mechanisms (thereby insulating these vessels somewhat from adverse consequences of actions of vessels outside of their restricted class over which they have very little influence or control). Division of Pacific cod sideboard limits within AFA cooperatives is already reported to occur. Similar methods could be used to distribute Pacific cod available to the co-op members as a result of this action. Persons not in a co-op that delivered to catcher/processors impacted by this action would potentially need to compete for a new market at the same time when markets could be more limited. As shown, among Alaska LLP license ownership address communities, Kodiak has both AFA-derived and non-AFA-derived licenses, while the single Homer ownership address LLP license is not AFA-derived. While all Oregon ownership address LLP licenses are AFA-derived, the pattern for Washington is more complex with LLP licenses with ownership addresses in the Seattle MSA tending to be AFA-derived and LLP licenses with ownership addresses elsewhere in Washington tending to be non-AFA-derived.

¹⁷ Unlike vessel participation information, vessel revenue information is not yet available for 2018. This is true for all of the tables in this and the other sections of this SIA document.

Table 2. BSAI Non-CDQ Directed Pacific Cod Trawl Fishery Catcher Vessels by Community of Historic Vessel Ownership Address, 2008-2018 (number of vessels)

Geography	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Annual Average 2008-2018 (number)	Annual Average 2008-2018 (percent)	Total Unique CVs 2008-2018 (number)
Kodiak	1	0	1	6	7	5	2	3	3	6	6	3.6	7.10%	9
Sand Point	1	1	0	0	0	0	0	0	0	0	0	0.2	0.36%	1
Alaska Total	2	1	1	6	7	5	2	3	3	6	6	3.8	7.46%	9
Newport	10	8	7	8	8	8	6	6	7	7	6	7.4	14.39%	13
Portland	0	0	0	0	1	1	1	1	1	1	1	0.6	1.24%	1
Siletz	1	0	1	0	0	0	0	0	0	0	1	0.3	0.53%	2
Oregon Total	11	8	8	8	9	9	7	7	8	8	8	8.3	16.16%	15
Anacortes	1	0	0	0	0	0	0	0	0	0	0	0.1	0.18%	1
Bellingham	1	1	1	2	1	1	1	1	1	1	1	1.1	2.13%	2
Chinook	1	1	1	1	0	0	0	0	0	0	0	0.4	0.71%	1
Camas	0	0	0	1	0	1	1	1	0	0	0	0.4	0.71%	1
Seattle MSA*	38	30	29	28	33	34	36	34	41	42	45	35.5	69.27%	54
South Bend	0	0	0	0	0	1	0	0	1	1	0	0.3	0.53%	1
Washington Total	41	32	31	32	34	37	38	36	43	44	46	37.6	73.53%	59
All Other States	2	2	2	2	2	1	1	1	1	1	1	1.5	2.84%	2
Grand Total	56	43	42	48	52	52	48	47	55	59	61	51.2	100.00%	76
*Seattle MSA includes all communities in King, Pierce, and Snohomish counties (Edmonds, Issaquah, Lakewood, Shoreline, Seattle, and Woodinville are represented as active in the 2008-2018 data).														
Note: Due to CV ownership movement between communities over the years shown, total unique CVs per community may not sum to state or grand totals.														
Source: ADFG/CFEC Fish Tickets, data compiled by AKFIN in Comprehensive_FT														

Table 3. BSAI Non-CDQ Directed Pacific Cod Trawl Fishery Catcher Vessel Ex-Vessel Gross Revenues (from Pacific cod caught in the BSAI Non-CDQ directed Pacific cod trawl fishery only) by Community of Historic Vessel Ownership Address, 2008-2017 (real 2010 millions of dollars)

Geography	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Annual Average 2008-2017 (number)	Annual Average 2008-2017 (percent)
Kodiak	*	0	*	\$0.54	\$1.52	\$0.99	*	\$0.15	\$0.33	\$1.00	na	\$0.62	2.97%
All Other Alaska	*	*	0	0	0	0	0	0	0	0	na	*	*
Alaska Total	*	*	*	\$0.54	\$1.52	\$0.99	*	\$0.15	\$0.33	\$1.00	na	*	*
Newport	\$5.82	\$2.76	\$2.91	\$5.54	\$6.59	\$4.40	\$3.87	\$3.01	\$4.07	\$3.52	na	\$4.25	20.39%
All Other OR	*	*	*	0	*	*	*	*	*	*	na	*	*
Oregon Total	*	*	*	\$5.54	*	*	*	*	*	*	na	*	*
Seattle MSA	\$27.66	\$9.98	\$9.57	\$12.73	\$17.93	\$11.19	\$13.02	\$9.77	\$13.68	\$12.79	na	\$13.83	66.35%
All Other WA	*	*	*	*	*	*	*	*	*	*	na	1.504	7.22%
Washington Total	*	*	*	*	*	*	*	*	*	*	na	\$15.34	73.56%
All Other States	*	*	*	*	*	*	*	*	*	*	na	*	*
Grand Total	\$39.17	\$14.49	\$14.56	\$21.93	\$29.58	\$18.50	\$18.08	\$14.43	\$19.61	\$18.13	na	\$20.85	100.00%
*Denotes confidential data.													
Source: ADFG/CFEC Fish Tickets, data compiled by AKFIN in Comprehensive_FT													

Table 4. BSAI Non-CDQ Directed Pacific Cod Trawl Fishery Catcher Vessels Ex-Vessel Gross Revenue Diversification by Community of Vessel Historic Ownership Address, All Communities, 2008-2017 (real 2010 millions of dollars)

Geography	Annual Average Number of BSAI Pacific Cod Trawl CVs 2008-2017	BSAI Pacific Cod Trawl CVs Annual Average Ex-Vessel Gross Revenues from BSAI Trawl-Caught Pacific Cod Only 2008-2017 (\$ millions)	BSAI Pacific Cod Trawl CVs Annual Average Total Ex-Vessel Gross Revenues from All Areas, Gears, and Species Fisheries 2008-2017 (\$ millions)	BSAI Pacific Cod Trawl CVs BSAI Trawl-Caught Pacific Cod Ex-Vessel Value as a Percentage of Total Ex-Vessel Gross Revenue Annual Average 2008-2017
Kodiak	3.4	\$0.62	\$8.90	6.95%
All Other Alaska	0.2	*	*	*
Alaska Total	3.6	*	*	*
Newport	7.5	\$4.25	\$11.44	37.14%
All Other OR	0.8	*	*	*
Oregon Total	8.3	*	*	*
Seattle MSA	34.5	\$13.83	\$78.44	17.63%
All Other WA	2.3	\$1.50	\$4.11	36.63%
Washington Total	36.8	\$15.34	\$82.55	18.58%
Other States	1.5	*	*	*
Grand Total	50.2	\$20.85	\$105.46	19.77%
*Denotes confidential data.				
Source: ADFG/CFEC Fish Tickets, data compiled by AKFIN in Comprehensive_FT				

Table 5. BSAI Non-CDQ Directed Pacific Cod Fishery Trawl Catcher Vessel and All Catcher Vessel Ex-Vessel Gross Revenue Diversification by Community of Vessel Historic Ownership Address, 2008-2017 (real 2010 millions of dollars)

Geography	Annual Average Number of BSAI Pacific Cod Trawl CVs 2008-2017	Annual Average Number of All Commercial Fishing CVs in those Same Communities (the "Community CV Fleet") 2008-2017	BSAI Pacific Cod Trawl CVs Annual Average Ex-Vessel Gross Revenues from BSAI Trawl-Caught Pacific Cod Only 2008-2017 (\$ millions)	All Commercial Fishing CVs Annual Average Total Ex-Vessel Gross Revenues from All Areas, Gears, and Species Fisheries 2008-2017 (\$ millions)	All Commercial Fishing CVs BSAI Trawl-Caught Pacific Cod Ex-Vessel Gross Revenue as a Percentage of Total Ex-Vessel Gross Revenue Annual Average 2008-2017
Kodiak	3.4	258.0	\$0.62	\$122.08	0.51%
All Other Alaska	0.2	75.1	*	\$15.84	*
Alaska Total	3.6	333.1	*	\$137.93	*
Newport	7.5	16.8	\$4.25	\$29.71	14.31%
All Other OR	0.8	4.0	*	\$5.87	*
Oregon Total	8.3	20.8	*	*	*
Seattle MSA	34.5	261.2	\$13.83	\$364.94	3.79%
All Other WA	2.3	162.8	\$1.50	\$58.83	2.56%
Washington Total	36.8	424.0	\$15.34	\$423.77	3.62%
Grand Total	82	778	\$20.85	\$664.18	3.14%
*Denotes confidential data.					
Source: ADFG/CFEC Fish Tickets, data compiled by AKFIN in Comprehensive_FT					

Table 6. BSAI Non-CDQ Directed Pacific Cod Trawl Fishery Catcher Vessel LLP License AFA Program Derived Designation Status by Community of Current License Ownership Address, 2018

Geography	Number of BSAI Trawl LLP Licenses			Percent of BSAI Trawl LLP Licenses		
	Total Licenses	AFA Derived		Total Licenses	AFA Derived	
		Yes	No		Yes	No
Homer	1	0	1	100.00%	0.00%	100.00%
Kodiak	6	4	2	100.00%	66.67%	33.33%
Alaska Total	7	4	3	100.00%	57.14%	42.86%
Newport	6	6	0	100.00%	100.00%	0.00%
All Other OR	3	3	0	100.00%	100.00%	0.00%
Oregon Total	9	9	0	100.00%	100.00%	0.00%
Seattle MSA*	56	51	5	100.00%	91.07%	8.93%
All Other WA	4	1	3	100.00%	25.00%	75.00%
Washington Total	60	52	8	100.00%	86.67%	13.33%
Total	76	65	11	100.00%	85.53%	14.47%

*Seattle MSA includes all communities in King, Pierce, and Snohomish counties.

Source: AKFIN summary of NMFS CAS data and RAM LLP license files

4.2 Vessels with Catcher/Processor Endorsed LLP Licenses Functioning as Catcher Vessels in the BSAI Non-CDQ Directed Pacific Cod Trawl Fishery

Table 7 provides a count of vessels with catcher/processor endorsed LLP licenses that functioned as catcher vessels and were engaged in the BSAI non-CDQ directed Pacific cod trawl fishery by community of vessel historic ownership address, by year (2008-2018), for all Alaska, Washington, and Oregon communities, along with state totals for Alaska, Oregon, Washington, and all other states combined. This count includes any vessel active in the non-CDQ directed BSAI Pacific cod trawl fishery in at least one year during this time period. As shown, the fleet is highly concentrated in the Seattle MSA, with 11 unique vessels engaged in the fishery 2008-2018, ranging between seven and 10 vessels in any given year. Newport Oregon and Rockland Maine had a single unique vessel that was engaged in the fishery each year 2008-2018, while Half Moon Bay California had a single unique vessel that was engaged in the fishery each year 2008-2012 only.

Table 8 provides annual information (2008-2018) on ex-vessel gross revenues (from BSAI trawl-caught Pacific cod only) for vessels with catcher/processor endorsed LLP licenses that functioned as catcher vessels in the BSAI non-CDQ directed Pacific cod trawl fishery by community of vessel historic ownership address to the extent possible within data confidentiality restrictions. As shown, information must be combined for the entire fleet, which is due to the lack of a sufficient number of vessels with ownership addresses outside of the Seattle MSA for the most recent five of the 10 years for which data are available.

Table 9 provides information on ex-vessel gross revenue diversification for vessels with catcher/processor endorsed LLP licenses that functioned as catcher vessels in the BSAI non-CDQ directed Pacific cod trawl fishery by community of vessel historic ownership address for the period 2008-2018. This shows the relative dependency of these vessels on directed fishery trawl-caught

BSAI Pacific cod (as measured by the proportion of total ex-vessel gross revenues on an annual average basis) compared to all other areas, gear types, and species fished by those same vessels. As shown, ex-vessel gross revenues from the BSAI non-CDQ directed Pacific cod trawl fishery itself are roughly 23 percent of all ex-vessel gross revenues for the vessels with catcher/processor endorsed LLP licenses that functioned as catcher vessels in the BSAI non-CDQ directed Pacific cod trawl fishery.

Also shown in Table 9 is the overall community catcher vessel fleet relative dependency on BSAI non-CDQ directed fishery trawl-caught Pacific cod (i.e., the aggregated dependency of all locally owned commercial fishing catcher vessels [the “community CV fleet”], not just those vessels with local ownership addresses and catcher/processor endorsed LLP licenses that functioned as catcher vessels in the BSAI non-CDQ directed Pacific cod trawl fishery) compared to all other areas, gear types, and species fished by the overall community CV fleet, as measured by percentage of total ex-vessel gross revenues, to the extent possible given data confidentiality restrictions for 2008-2018. As shown, the BSAI non-CDQ directed Pacific cod trawl fishery accounted for about five percent of the total ex-vessel gross revenues for combined Seattle and Newport community CV fleets as a whole.

Table 10 provides information Amendment 80 and AFA program derived designation status of LLP licenses associated with vessels with catcher/processor endorsed LLP licenses that functioned as catcher vessels in the BSAI non-CDQ directed Pacific cod trawl fishery license by community of license current ownership address. All else being equal, inclusion of catcher/processor endorsed LLP licenses used on vessels in an Amendment 80 or AFA co-op would likely experience differing levels of vulnerability as a result of the proposed actions. As shown, only one LLP license with a current Rockland Maine ownership address has Amendment 80 status, while the single LLP license with a Newport Oregon ownership address has an AFA-derived status. LLP licenses with Seattle MSA addresses include the only LLP licenses in this group that are neither Amendment 80 or AFA-derived, along with others that are AFA-derived.

Table 7. Vessels with Catcher/Processor Endorsed LLP Licenses that Functioned as Catcher Vessels in the BSAI Non-CDQ Directed Pacific Cod Trawl Fishery by Community of Historic Vessel Ownership Address, 2008-2018 (number of vessels)

Geography	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Annual Average 2008-2018 (number)	Annual Average 2008-2018 (percent)	Total Unique CVs 2008-2018 (number)
Newport	1	1	1	1	1	1	1	1	1	1	1	1.00	9.65%	1
Oregon Total	1	1	1	1	1	1	1	1	1	1	1	1.00	9.65%	1
Seattle MSA*	7	7	7	7	8	8	10	6	9	9	9	7.91	76.32%	11
Washington Total	7	7	7	7	8	8	10	6	9	9	9	7.91	76.32%	11
Rockland ME	1	1	1	1	1	1	1	1	1	1	1	1.00	9.65%	1
Half Moon Bay CA	1	1	1	1	1	0	0	0	0	0	0	0.45	4.39%	1
Grand Total	10	10	10	10	11	10	12	8	11	11	11	10.36	100.00%	13

*Seattle MSA includes all communities in King, Pierce, and Snohomish counties (Shoreline and Seattle are represented in the data).

Note: Due to CV ownership movement between communities over the years shown, total unique CVs per community may not sum to state or grand totals.

Source: ADFG/CFEC Fish Tickets, data compiled by AKFIN in Comprehensive_FT

Table 8. Vessels with Catcher/Processor Endorsed LLP Licenses that Functioned as Catcher Vessels in the BSAI Non-CDQ Directed Pacific Cod Trawl Fishery Ex-Vessel Gross Revenues (from BSAI trawl-caught Pacific cod only) by Community of Historic Vessel Ownership Address, 2008-2017 (real 2010 millions of dollars)

Geography	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Annual Average 2008-2017 (number)	Annual Average 2008-2017 (percent)
All Geographies	\$10.59	\$5.41	\$4.68	\$5.99	\$6.79	\$4.80	\$5.86	\$3.73	\$4.86	\$3.80	na	\$5.65	100.00%

Source: ADFG/CFEC Fish Tickets, data compiled by AKFIN in Comprehensive_FT

Table 9. Vessels with Catcher/Processor Endorsed LLP Licenses that Functioned as Catcher Vessels in the BSAI Non-CDQ Directed Pacific Cod Trawl Fishery Ex-Vessel Gross Revenue Diversification, by Community of Historic Vessel Ownership Address, All Communities, 2008-2017 (real 2010 millions of dollars)

Geography	Annual Average Number of CVs 2008-2017	BSAI Pacific Cod Trawl CVs Annual Average Ex-Vessel Gross Revenues from BSAI Trawl-Caught Pacific Cod Only 2008-2017 (\$ millions)	BSAI Pacific Cod Trawl CVs Annual Average Total Ex-Vessel Gross Revenues from All Areas, Gears, and Species Fisheries 2008-2017 (\$ millions)	BSAI Pacific Cod Trawl CVs BSAI Trawl-Caught Pacific Cod Ex-Vessel Gross Revenue as a Percentage of Total Ex-Vessel Gross Revenue Annual Average 2008-2017
Vessels with CP LLP functioning as BSAI Pcod CVs	10.3	\$5.65	\$24.25	23.31%
All CVs with Ownership Addresses in the Same Communities* (the Catcher Vessel "Community Fleet")	278.0	\$18.08	\$394.65	4.58%
*Includes Seattle and Newport				
Source: ADFG/CFEC Fish Tickets, data compiled by AKFIN in Comprehensive_FT				

Table 10. Catcher/Processor Endorsed LLP Licenses Used on Vessels that Functioned as Catcher Vessels in the BSAI Non-CDQ Directed Pacific Cod Trawl Fishery License AFA Program Derived Designation Status by Community of Current License Ownership Address, 2018

Geography	Number of BSAI Pacific Cod Trawl CP LLP Licenses				Percent of BSAI Pacific Cod Trawl CP LLP Licenses			
	Total	Amendment 80	AFA Derived	Non-A80 and Non-AFA	Total	Amendment 80	AFA Derived	Non-A80 and Non-AFA
Newport OR	1	0	1	0	100.00%	0.00%	100.00%	0.00%
Seattle MSA*	13	0	7	6	100.00%	0.00%	53.85%	46.15%
Rockland ME	1	1	0	0	100.00%	100.00%	0.00%	0.00%
Grand Total	15	1	7	6	100.00%	6.67%	46.67%	40.00%
*Seattle MSA includes all communities in King, Pierce, and Snohomish counties (Shoreline and Seattle are represented in the data).								
Source: AKFIN summary of NMFS CAS data and RAM LLP license files								

4.3 Catcher/Processors that Accepted BSAI Non-CDQ Directed Pacific Cod Trawl Fishery Catcher Vessel Deliveries

Table 11 provides a count, by community and year (2008-2018), of catcher/processors acting as motherships that accepted BSAI non-CDQ directed Pacific cod trawl fishery catcher vessel deliveries, by community of catcher/processor historic ownership address, for all Alaska, Washington, and Oregon communities, along with state totals for Alaska, Oregon, Washington, and all other states combined. This count includes any catcher/processor that accepted such deliveries at least one year during this time period. As shown, for all years, ownership addresses are all within the Seattle MSA.

Table 12 provides information on first wholesale gross revenues from BSAI non-CDQ directed Pacific cod trawl fishery catcher vessel deliveries generated by catcher/processors that accepted such deliveries by community of catcher/processor historic ownership address, 2008-2018.

Table 13 provides information on first wholesale gross revenue diversification of catcher/processors that accepted BSAI non-CDQ directed Pacific cod trawl fishery catcher vessel deliveries by community of catcher/processor historic ownership address 2008-2017. This shows the relative dependency of the involved catcher/processors acting as motherships on those deliveries as measured by relative contribution to total first wholesale gross revenues produced by those same catcher/processors (i.e., the first wholesale gross revenues from all areas, gear types, and species fisheries participated in by those same catcher/processors). As shown, these first wholesale gross revenues account for approximately five percent of all first wholesale gross revenues for those catcher/processors.

Also provided in Table 13 is first wholesale revenue diversification information for all catcher/processors with historic ownership addresses in communities with at least one catcher/processor that acted as a mothership for at least one BSAI non-CDQ directed Pacific cod trawl fishery catcher vessel delivery in at least one year 2008-2018. This shows the relative dependency of this larger group catcher/processors (the “community CP fleet” of catcher/processors in the combined communities of Seattle and Kirkland) on first wholesale gross revenues generated by mothership activity in the BSAI non-CDQ directed Pacific cod trawl fishery compared to first wholesale gross revenues produced by all area, gear type, and species fisheries pursued by these catcher/processors. As shown, these first wholesale gross revenues account for less than one percent of the total first wholesale gross revenues of the combined “community CP fleet.”

Table 14 provides information on the Amendment 80 and AFA derived status designation of the LLP licenses associated with catcher/processors that accepted BSAI non-CDQ directed Pacific cod trawl fishery catcher vessel deliveries by community of license ownership address, 2008-2018. All else being equal, inclusion of catcher/processors in one or more of these classes would likely reduce the vulnerability of individual catcher/processors to adverse impacts that could result from the proposed alternatives through co-op or other internal vessel class compensation mechanisms (thereby insulating these catcher/processors somewhat from adverse consequences of actions of catcher/processors outside of their restricted class over which they have very little influence or control). As shown eight of the nine relevant LLP licenses are Amendment 80 and the remaining one is AFA-derived.

Table 11. Catcher/Processors that Accepted BSAI Non-CDQ Directed Pacific Cod Trawl Fishery Catcher Vessel Deliveries, by Community of Historic Catcher/Processor Ownership Address, 2008-2018 (number of vessels)

Geography	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Annual Average 2008-2018 (number)	Annual Average 2008-2018 (percent)	Total Unique CPs 2008-2018 (number)
Kirkland*	0	0	0	0	0	0	0	0	2	2	2	0.5	14.29%	2
Seattle*	3	2	2	3	3	2	2	2	5	6	6	3.3	85.71%	6
Washington Total	3	2	2	3	3	2	2	2	7	8	8	3.8	100.00%	8
Grand Total	3	2	2	3	3	2	2	2	7	8	8	3.8	100.00%	8

*Denotes communities in the Seattle MSA.

Note: Due to CP ownership movement between communities over the years shown, total unique CPs per community may not sum to state or grand totals.

Source: NMFS Alaska Region Catch Accounting System, data compiled by AKFIN in Comprehensive_BLEND_CA

Table 12. Catcher/Processors that Accepted BSAI Non-CDQ Directed Pacific Cod Trawl Fishery Catcher Vessel Deliveries First Wholesale Gross Revenues (from BSAI trawl-caught Pacific cod only) by Community of Historic Catcher/Processor Ownership Address, 2008-2017 (real 2010 millions of dollars)

Geography	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Annual Average 2008-2018 (number)	Annual Average 2008-2018 (percent)
Seattle MSA	\$9.85	*	*	\$13.92	\$8.62	\$3.52	\$7.79	\$7.39	\$9.90	\$11.78	na	\$8.81	100.00%

*Denotes confidential data.

Source: NMFS Alaska Region Catch Accounting System, data compiled by AKFIN in Comprehensive_BLEND_CA

Table 13 Catcher/Processors that Accepted BSAI Non-CDQ Directed Pacific Cod Trawl Fishery Catcher Vessel Deliveries and All Trawl Catcher/Processor Ex-Vessel Gross Revenue Diversification by Community of Historic Catcher/Processor Ownership Address, All Communities, 2008-2017 (real 2010 millions of dollars)

Catcher Processor Type	Annual Average Number of CPs 2008-2017	Annual Average First Wholesale	Annual Average Total First	BSAI Directed Pacific Cod Trawl
		Gross Revenues from BSAI Directed Pacific Cod Trawl Fishery CV Deliveries Only 2008-2017 (\$ millions)	Wholesale Gross Revenues from All Areas, Gears, and Species Fisheries 2008-2017 (\$ millions)	Fishery CV Deliveries First Wholesale Gross Revenue as a Percentage of Total First Wholesale Gross Revenues Annual Average 2008-2017
Catcher Processors Accepting Relevant CV BSAI Directed Pacific Cod Trawl Fishery Catcher Vessel Deliveries	3.4	\$8.81	\$166.26	5.30%
All Catcher Processors with Ownership Addresses in the Same Communities* (the "Community CP Fleet")	54.2	\$8.81	\$1,056.95	0.83%
*Includes Kirkland and Seattle				
Source: NMFS Alaska Region Catch Accounting System, data compiled by AKFIN in Comprehensive_BLEND_CA				

Table 14. Catcher/Processor Endorsed LLP Licenses Used on Vessels that Accepted BSAI Non-CDQ Directed Pacific Cod Trawl Fishery Catcher Vessel Deliveries (functioned as Motherships) LLP License Amendment 80 and AFA Program Status Designations by Community of Current License Ownership Address, 2018

Geography	Number of BSAI Pacific Cod Trawl CP LLP Licenses				Percentage of BSAI Pacific Cod Trawl CP LLP Licenses			
	Total Licenses	Amendment 80	AFA Derived	Non-A80 and Non-AFA	Total Licenses	Amendment 80	AFA Derived	Non-A80 and Non-AFA
Seattle MSA*	9	8	1	0	100.00%	88.89%	11.11%	0.00%
All Other	0	0	0	0	0.00%	0.00%	0.00%	0.00%
Total	9	8	1	0	100.00%	88.89%	11.11%	0.00%
*Seattle MSA includes all communities in King, Pierce, and Snohomish counties (Kirkland and Seattle are represented in the data).								
Source: AKFIN summary of NMFS CAS data and RAM LLP license files								

4.4 Shoreside Processors Accepting BSAI non-CDQ Directed Pacific Cod Trawl-Caught Deliveries

Table 15 shows provides information on the distribution of shoreside processors accepting BSAI non-CDQ directed Pacific cod fishery trawl-caught deliveries by community of shoreside processor operation, 2008-2018.¹⁸ For the purposes of this analysis, shoreside processors are defined as those entities (as identified by F_ID [intent to operate] and SBPR [shore-based processor] or IFP [inshore floating processor] codes in AKFIN [Alaska Fisheries Information Network] data) accepting BSAI non-CDQ directed Pacific cod trawl-caught deliveries from vessels with catcher vessel endorsed LLP licenses or catcher/processor endorsed LLP licenses. The shoreside processing activity attributed to Seattle in this section (and related tables in other sections of this social impact assessment) is actually activity associated with inshore floating processors with Seattle ownership addresses operating in Alaska waters but for which good operation location data are not available.

As shown, among Alaska communities, the only community with multiple shoreside processors engaged any year was Unalaska/Dutch Harbor (which also had multiple processors engaged in the fishery every year), and the only other community that had at least one shoreside processor engaged in the fishery every year was Akutan. Also, among Alaska communities, Adak and King Cove were the only other communities that annually averaged above 0.5 shoreside processors engaged in the fishery over this period.

It is important to note, however, that shoreside processors differ widely by community of operation in their history of accepting and dependency on *Bering Sea* non-CDQ directed Pacific cod fishery trawl-caught deliveries versus *Aleutian Islands* non-CDQ directed Pacific cod fishery trawl-caught deliveries. Per the recent Aleutian Islands Pacific Cod Harvest Set-Aside Adjustment RIR (December 2018), the primary shoreside processor in Adak has been substantially engaged in and substantially dependent on the directed *Aleutian Islands* Pacific cod fishery (during the years when the plant was operational between 2002 and 2017). In contrast, the Adak shoreside plant in that analysis as only have received a delivery or deliveries of *Bering Sea* Pacific cod from one vessel in each of two years during this period (2008 and 2011), with the volume or value of those deliveries being confidential.¹⁹

More recent data developed for this project are consistent in general with the data from the earlier analysis, showing within overall BSAI Pacific cod deliveries a virtually exclusive focus of the Adak shoreside plant on *Aleutian Islands* as opposed to *Bering Sea* non-CDQ directed Pacific cod fishery

¹⁸ From a community impact perspective, inshore floating processors operating outside of a community's municipal boundaries have a different type of engagement with even nearby Alaska communities than do shoreside processors, including inshore floating processors, operating in those communities. For example, while not shown in the data, one inshore floating processor is known anecdotally to have operated in Unalaska Island's Beaver Inlet, outside of the municipal boundaries of the City of Unalaska, during multiple years in this period. While Unalaska/Dutch Harbor derived a level of benefit from support activities for this operation that occurred in the community, it was a different order of magnitude than the benefits that accrued from the activities of shoreside processors operating within the community during this same period that, among others, included accepting commercial fisheries landings on a regular basis that generated substantial public revenue in the form of payment of city fish taxes. This particular floating processor permanently relocated to a site within the municipal boundaries within the City of Unalaska in late 2017 (McDowell Group 2018) and, because of this move, the community now benefits from this processor in the same manner as it does from shore-based processors.

¹⁹ During the 2002-2017 period, the only BSAI Pacific cod included in deliveries to the shoreside plant in the relatively nearby community of Atka, the only other community in western Aleutians region as defined for the purposes of NPFMC community protection measures (i.e., west of 170 longitude), were incidentally caught Aleutian Islands Pacific cod.

trawl-caught deliveries, a pattern that continued into 2018.²⁰ These more recent data also shed light on the earlier reported **Bering Sea** non-CDQ directed Pacific cod fishery trawl-caught deliveries to Adak. The earlier reported delivery or deliveries attributed to Adak in 2011 do not appear in more recently developed dataset (and are likely attributable to noise in the data). The earlier reported delivery or deliveries that occurred in 2008, on the other hand, do appear in the more recently developed dataset, are associated with a single vessel, and represent the only known/confirmed deliveries of **Bering Sea** non-CDQ directed Pacific cod fishery trawl-caught deliveries to an Adak shoreside processor over the years 2008-2018 considered for this analysis (as well as the longer 2012-2018 period covered by the combined earlier and present analyses).

The pattern in King Cove and Sand Point is the reverse of that seen in Adak. Of the BSAI non-CDQ directed Pacific cod fishery trawl-caught deliveries that were accepted by shoreside processors operating in King Cove and Sand Point over the period 2008-2018, all without exception were **Bering Sea** non-CDQ directed Pacific cod fishery trawl-caught deliveries.

Unalaska/Dutch Harbor and Akutan shoreside processors²¹ showed yet a different pattern. Some, but not all, shoreside processors operating in Unalaska/Dutch Harbor and Akutan took both **Bering Sea** and **Aleutian Islands** non-CDQ directed Pacific cod fishery trawl-caught deliveries during some, but not all, of the years during the 2008-2018 period.

- Of the three Unalaska/Dutch Harbor and Akutan shoreside processors that took BSAI non-CDQ directed Pacific cod fishery trawl-caught deliveries each year 2008-2018, all took **Bering Sea** non-CDQ directed Pacific cod fishery trawl-caught deliveries each year. Similarly, the one Unalaska/Dutch Harbor or Akutan shoreside processor that took BSAI non-CDQ directed Pacific cod fishery trawl-caught deliveries 10 out of 11 of the years 2008-2018 took **Bering Sea** non-CDQ directed Pacific cod fishery trawl-caught deliveries each of those years.
 - Three of those four shoreside processors also took **Aleutian Islands** non-CDQ directed Pacific cod fishery trawl-caught deliveries in one, two, or three years each during the period.
 - In the five unique calendar years in the period 2008-2018 when one or more Unalaska/Dutch Harbor and Akutan shoreside processors took both **Bering Sea** and **Aleutian Islands** non-CDQ directed Pacific cod fishery trawl-caught deliveries, the **Bering Sea** deliveries accounted for between 84.9 percent and 99.0 percent of the combined volume of BSAI non-CDQ directed Pacific cod fishery trawl-caught deliveries at any individual processor in any one of those years, and 94.8 percent of the combined volume of BSAI non-CDQ directed Pacific cod fishery trawl-caught deliveries at all three unique involved shoreside processors in all five of those years combined.
 -
- Of the three Unalaska/Dutch Harbor and Akutan shoreside processors that took BSAI non-CDQ directed Pacific cod fishery trawl-caught deliveries in less than 10 of the 11 years 2008-2018, all without exception were **Bering Sea** non-CDQ directed Pacific cod fishery trawl-caught deliveries.

²⁰ A lack of participation of the Atka shoreside plant in the BSAI non-CDQ directed Pacific cod trawl fishery is shown as having continued into 2018 as well.

²¹ Including the two entities shown in the data as operating in Anchorage but that are known to have operated in Unalaska/Dutch Harbor.

Table 16 provides information on the ex-vessel value paid by shoreside processors by species by community of processor operation (2009-2017), to the extent possible within data confidentiality restrictions, to show the relative economic importance of species (and single species harvested in different area and gear fisheries) processed by shoreside processing firms that take deliveries of BSAI Pacific cod. This shoreside processor “diversity” information is intended, in part, to provide quantitatively based insight into the level of engagement in and/or dependency on a particular fishery by shoreside processors operating in a given community or group of communities.²²

As shown, ex-vessel values paid by shoreside processors varies substantially year-to-year within and between groups of communities. For example, for shoreside plants in Unalaska/Dutch Harbor and Akutan combined, ex-vessel value paid for groundfish ranged between approximately \$133 million and \$200 million (and accounted for between 61 and 75 percent of total ex-vessel value paid for all species) in any given year; for those same plants, ex-vessel value paid for BSAI trawl-caught Pacific cod ranged between \$2.2 million and \$15.4 million (and accounted for between approximately 1.0 and 5.2 percent of total ex-vessel value paid for all species) in any given year. In contrast, for the Adak, Sand Point, and King Cove shoreside plants combined, for the years that can be disclosed, analogous groundfish ex-vessel values paid ranged between approximately \$29 million and \$39 million (accounting for between 33 and 45 percent of total ex-vessel values paid for all species) and analogous BSAI trawl-caught Pacific cod ranged between approximately \$0.18 million and \$5.1 million (accounting for between approximately 0.2 percent and 6.9 percent of total ex-vessel value paid for all species)

²² As discussed in Section 3.5.3, ideally these comparisons of relative engagement/dependency would be made at the first wholesale level and reflect net income to the effected processors, but the data required to do so are not available. Instead, AKFIN staff have provided comparisons of ex-vessel expenditures by species/fishery for shoreside processors processor diversification comparisons in the absence of more useful data. Comparing ex-vessel value at the processor level, however, reflects a cost to the processor and not income. As a result, the comparison should be considered a very rough proxy for the analysis of the importance of each species or species group to the economic viability of processing firms and, by extension, to the communities in which they operate.

Table 15. Shoreside Processors Accepting BSAI Non-CDQ Directed Pacific Cod Fishery Trawl-Caught Deliveries by Community of Shoreside Processor Operation, 2008-2018 (number)

Geography	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Average 2008-2018 (number)	Average 2008-2018 (percent)	Unique Shoreside Processors 2008-2018 (number)
Adak*	1	1	1	0	1	1	1	0	0	0	1	0.6	7.22%	1
Akutan	1	1	1	1	1	1	1	1	1	1	1	1.0	11.34%	1
Anchorage**	0	0	0	1	0	1	1	0	0	0	0	0.3	3.09%	2
King Cove	1	1	0	1	1	1	0	1	1	1	1	0.8	9.28%	1
Sand Point	1	1	0	1	0	1	0	1	0	0	1	0.5	6.19%	1
Unalaska/Dutch Harbor	4	2	3	3	3	3	3	3	4	3	3	3.1	35.05%	5
Alaska Total	8	6	5	7	6	8	6	6	6	5	7	6.4	72.16%	11
Seattle/IFPs***	3	2	2	3	2	2	2	2	3	3	3	2.5	27.84%	5
Grand Total	11	8	7	10	8	10	8	8	9	8	10	8.8	100.00%	16
*Adak is shown as 1 processor however 4 entities have operated from the same plant														
**The two entities shown in the dataset as operating in Anchorage are known to have operated in Unalaska/Dutch Harbor.														
***Seattle is shown as the operating community for Inshore Floating Processors when the actual area of operation is not specified in the available dataset.														

Table 16. Ex-Vessel Value Paid by Shoreside Processors by Species by Community of Processor Operation, 2009-2017 (millions of real 2010 dollars)

Year	Community Grouping	Ex-vessel value in real 2010 dollars				Number of processors	Percent			
		Groundfish*	BSAI trawl Pacific cod	Other	Total		Groundfish	BSAI trawl Pacific cod	Other	Total
2009	Adak/Sand Point/King Cove	\$28.63	\$5.05	\$44.87	\$73.51	3	39%	6.9%	61%	100%
	Akutan/Unalaska/Dutch Harbor	\$143.91	\$2.20	\$69.56	\$213.47	3	67%	1.0%	33%	100%
	Seattle/Inshore Floating Processors**	\$18.09	\$4.96	\$34.97	\$53.06	5	34%	9.3%	66%	100%
2010	Adak/Sand Point/King Cove	\$29.53	\$0.18	\$41.44	\$70.97	3	42%	0.2%	58%	100%
	Akutan/Unalaska/Dutch Harbor	\$132.76	\$6.17	\$83.67	\$216.43	4	61%	2.9%	39%	100%
	Seattle/Inshore Floating Processors**	\$17.14	\$4.99	\$39.58	\$56.72	5	30%	8.8%	70%	100%
2011	Adak/Sand Point/King Cove	\$35.41	\$0.23	\$72.92	\$108.33	3	33%	0.2%	67%	100%
	Akutan/Unalaska/Dutch Harbor/Anchorage***	\$195.93	\$9.94	\$110.10	\$306.03	5	64%	3.2%	36%	100%
	Seattle/Inshore Floating Processors**	\$29.72	\$7.33	\$44.56	\$74.28	5	40%	9.9%	60%	100%
2012	Adak/Sand Point/King Cove	\$38.93	\$3.30	\$60.77	\$99.70	3	39%	3.3%	61%	100%
	Akutan/Unalaska/Dutch Harbor/Anchorage***	\$200.32	\$15.39	\$97.97	\$298.29	4	67%	5.2%	33%	100%
	Seattle/Inshore Floating Processors**	\$34.29	\$8.29	\$47.74	\$82.03	5	42%	10.1%	58%	100%
2013	Adak/Sand Point/King Cove	\$29.54	\$2.51	\$57.04	\$86.58	3	34%	2.9%	66%	100%
	Akutan/Unalaska/Dutch Harbor/Anchorage***	\$174.08	\$10.48	\$78.14	\$252.22	5	69%	4.2%	31%	100%
	Seattle/Inshore Floating Processors**	\$30.51	\$6.88	\$47.36	\$77.88	4	39%	8.8%	61%	100%
2014	Adak/Sand Point/King Cove	\$31.97	\$1.82	\$39.58	\$71.55	3	45%	2.6%	55%	100%
	Akutan/Unalaska/Dutch Harbor/Anchorage***	\$185.87	\$11.23	\$81.13	\$267.00	5	70%	4.2%	30%	100%
	Seattle/Inshore Floating Processors**	\$31.51	\$6.19	\$47.90	\$79.41	4	40%	7.8%	60%	100%
2015	Adak/Sand Point/King Cove	c	c	c	c	2	c	c	c	c
	Akutan/Unalaska/Dutch Harbor	\$179.91	\$10.52	\$88.76	\$268.67	4	67%	3.9%	33%	100%
	Seattle/Inshore Floating Processors**	\$30.84	\$3.88	\$29.15	\$59.99	4	51%	6.5%	49%	100%
2016	Adak/Sand Point/King Cove	c	c	c	c	2	c	c	c	c
	Akutan/Unalaska/Dutch Harbor	\$171.17	\$10.23	\$81.25	\$252.42	5	68%	4.1%	32%	100%
	Seattle/Inshore Floating Processors**	\$37.57	\$8.49	\$21.70	\$59.27	4	63%	14.3%	37%	100%
2017	Adak/Sand Point/King Cove	c	c	c	c	2	c	c	c	c
	Akutan/Unalaska/Dutch Harbor	\$151.45	\$8.60	\$50.91	\$202.36	4	75%	4.3%	25%	100%
	Seattle/Inshore Floating Processors**	\$52.00	\$9.48	\$3.26	\$55.26	4	94%	17.1%	6%	100%

Note: "c" denotes confidential data.

*BSAI cod trawl Pacific cod ex-vessel values (shown in the next column) are also included in the groundfish ex-vessel values shown in this column.

**Inshore floating processors without operating location shown in the data have been grouped with Seattle.

***The entities shown in the data as operating in Anchorage 2011-2014 are known to have operated in Unalaska/Dutch Harbor.

Source: AKFIN summary of ex-vessel value data (BSAI_TW_PROC_DIV (9_22_18))

5 Community Context of the Fisheries

5.1 Overview

This section contains a set of profiles of communities selected due to a desire to focus on the communities most clearly and directly substantially engaged in and/or substantially dependent on the BSAI non-CDQ directed Pacific cod catcher vessel trawl fishery (and therefore most likely to be directly affected by proposed management actions); a recognition that communities with multi-sector activity may be more or less vulnerable to potential adverse impacts related to the proposed fishery management changes based on the particular sectors present specific communities;²³ and, most importantly based on the purpose and need statement, those specific communities that would likely be primarily be affected due to their being substantially engaged in and/or substantially dependent upon shoreside processing of Bering Sea non-CDQ directed Pacific cod fishery catcher vessel trawl-caught deliveries.

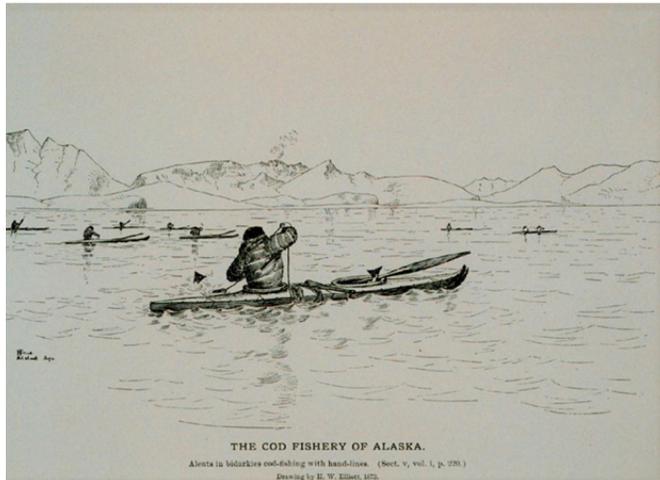
The latter category includes three Alaska communities that had, on average, more than 0.5 shoreside processors engaged in the processing of Bering Sea non-CDQ directed Pacific cod fishery catcher vessel trawl-caught deliveries annually over the period 2008-2018: Unalaska/Dutch Harbor, Akutan, and King Cove. Additionally, Unalaska/Dutch Harbor is a center of multi-sector activity given its functioning as the primary Alaska port supporting multiple sectors operating in the Bering Sea non-CDQ directed Pacific cod trawl fishery.

It is important to note that Pacific cod has been an important resource for inhabitants of the region in the vicinity of the contemporary communities of Unalaska, Akutan, and King Cove (and other regional communities) for thousands of years. Archaeological data indicate that Aleuts have occupied the Sanak Island area²⁴ (near King Cove) for 6,000-7,000 years and Pacific cod bones dominate the matrices of all preserved midden deposits from over 120 prehistoric village sites found on the island (Maschner et al., 2008). Pacific cod was the most important fish species to the Unangan people during the time period 3500-2500 BP, with about 85 percent of the fish bone in archaeological sites attributable to Pacific cod (Crockford et al., 2004). The basic composition of species harvested by the Aleut has been dominated by sea lions, seals, cod, salmon, and a variety of birds and shellfish throughout prehistory (Tews, 2005). Both commercial and subsistence use of Pacific cod have deep roots and remain important parts of the social, cultural, and economic fabric of life in each of these communities.

²³ For example, if multiple fishery sectors present in a community were all adversely affected by a proposed management action, then those combined impacts, at the community level, may be greater than the sum of individual sector impacts as, for example, direct fishery support sector businesses or municipal services are, in turn, adversely affected. Alternatively, if some locally present fishery sectors were adversely affected and some locally present fishery sectors were beneficially affected, then those combined impacts, when aggregated at the community level, may in whole or in part cancel one another out, with the beneficial impacts to some sector or sectors effectively minimizing or offsetting the adverse impacts to another sector or sectors.

²⁴ The fishing banks around Sanak are considered to be some of the richest in Alaska.

Figure 3. Aleuts in bidarkies cod-fishing with hand-lines, 1872



Source: <https://www.photolib.noaa.gov/htmls/figb0037.htm>

The summary profiles of Unalaska, Akutan, and King Cove are largely derived from earlier detailed community profiling efforts, the results of which are in part included in this analysis and in part included in other documents incorporated by reference. These summary profiles have also been supplemented with newly developed fishery engagement and dependency information relevant to the present analysis, as well as updated demographic, socioeconomic information, subsistence, and public revenue information.

Additionally, two other groupings of Alaska communities are described in less detail in this section. These (and their reasons for inclusion) are:

- Kodiak and Sand Point (that represent, respectively, the Alaska community most substantially engaged in the fishery through local ownership of participating catcher vessels and the only Alaska community outside of Unalaska/Dutch Harbor, Akutan, and King Cove that has been the location of fishery engagement through shoreside processing of Bering Sea non-CDQ directed Pacific cod fishery catcher vessel trawl-caught deliveries).
- Adak and Atka (that represent, respectively, the only community that to date has directly benefitted from Aleutian Islands non-CDQ directed Pacific cod fishery shoreside processing-oriented community protection measures under Amendments 92 and 113 and the only other community that has the potential to directly benefit from those same community protection measures).

Finally, two Pacific Northwest communities or groupings of communities were chosen for inclusion in the series of community profiles based on substantial engagement in the fishery through one or more sectors relative to other participating communities in either the Alaska or Pacific Northwest regions:

- The Seattle Metropolitan Area (i.e., the Seattle MSA,²⁵ which is center of catcher vessel ownership, catcher/processor ownership, and inshore floating processor ownership in the fishery and the major support service supplier for multiple sectors in the fishery).

²⁵ The Seattle-Tacoma-Bellevue Metropolitan Statistical Area, referred to as the “Seattle MSA” in this document, is a U.S. Census Bureau defined region used to tabulate the metropolitan area in and around Seattle, Washington. It includes of King, Pierce, and Snohomish counties.

- Newport, Oregon (which has the second largest concentration of catcher vessel ownership in the fishery).

The level of detail provided in the following community profiles varies by nature and relative order of magnitude of community engagement in the fishery and, therefore, the likelihood that these communities could experience community-level social impacts because of the implementation of one or more of the proposed management alternatives. More detailed community descriptions are provided for the communities of Unalaska/Dutch Harbor, Akutan, and King Cove, covering in summary form local demographics, the local economy and socioeconomic context, commercial fisheries engagement through the harvest and processing sectors, subsistence fishing engagement, local fishing support services, and public revenues. For the communities described in less detail, relevant information is presented in more abbreviated form, and then only to the extent necessary to contextualize the community's specific type of limited involvement in relevant aspects of the BSAI non-CDQ directed Pacific cod trawl fishery.

5.2 Alaska Communities

5.2.1 Unalaska/Dutch Harbor

5.2.1.1 Introduction, Location, and History

Unalaska is located on Unalaska Bay on the northern side of Unalaska Island, one of the Fox Islands group of the eastern Aleutian Islands, approximately 800 miles southwest of Anchorage. A portion of the community is located on Unalaska Island, while another portion, connected to Unalaska Island by bridge, is located on Amaknak Island. The city's port, the International Port of Dutch Harbor, and the geographic feature of Dutch Harbor itself is part of/adjacent to the Amaknak Island portion of the community. Amaknak Island, including Dutch Harbor, is fully contained within the municipal boundaries of the city of Unalaska, which encompasses 115.8 square miles of land and 98.6 square miles of water.²⁶

Unalaska incorporated as a First Class City in 1942, is not a part of an organized borough, and is within the Aleutians West Census Area. The community is only accessible by air and sea and is served seasonally by ferry on the Aleutian Chain route of the Alaska Marine Highway system. Like Akutan, Unalaska/Dutch Harbor is typically considered a Bering Sea community (e.g., it is an ex-officio member of the Aleutian Pribilof Island Development Association CDQ group), but (again like Akutan) it is also adjacent to the Western GOA Regulatory Area (610), as well as halibut regulatory area 4A, which straddles the GOA and the Bering Sea sides of the eastern portion of the Aleutian Chain.

Archaeological sites on Anangula Island have been used to estimate the earliest occupation of the area as occurring approximately 8,000 years ago (National Oceanic and Atmospheric Administration 2013). Following European contact, multiple Unalaska and Amaknak Island villages were decimated by multiple factors, including disease. Following an initial period of Russian occupation during which Unalaska became fur-trading port, in 1825 a forerunner of the contemporary Russian Orthodox Church of the Holy Ascension was built at the present village site; following the abandonment of local commercial operations by the Russians in 1850, development related to the community becoming a coaling station and commercial trade center occurred in the 1880s. By the turn of the 20th

²⁶ The name "Dutch Harbor" is frequently applied to the entire portion of the community that is on Amaknak Island. There is a separate Dutch Harbor post office on Amaknak Island with a zip code (99692) distinct from that of the rest of Unalaska (99685). The airport serving Unalaska, Tom Madsen Airport, is located on Amaknak Island, has the airport code of DUT, and a Dutch Harbor address.

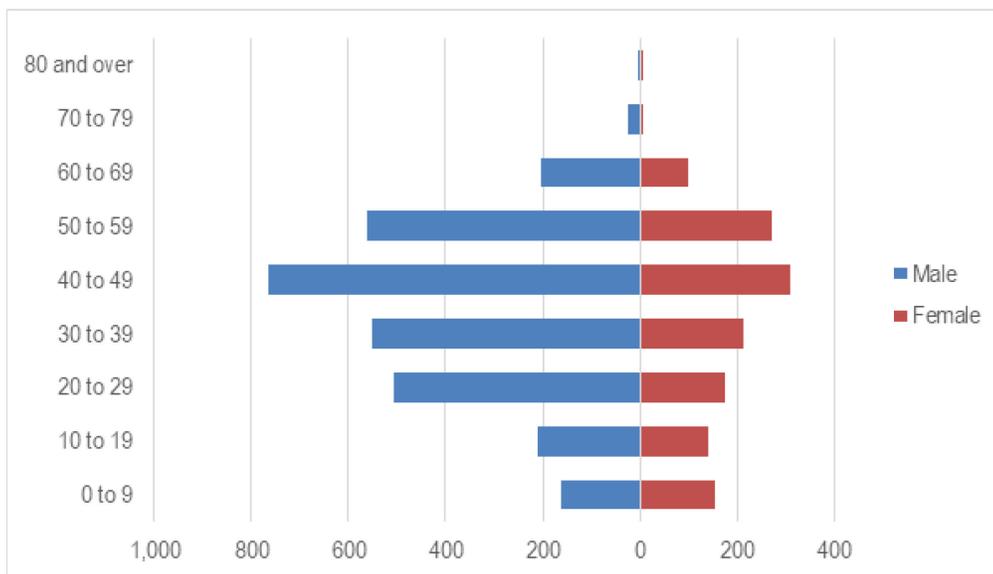
century several seafood processors may have been operating locally and, following substantial military development and use of the community immediately before, during, and after World War II, interest in local commercial fishing operations was revived in the 1950s (National Oceanic and Atmospheric Administration 2013).

In a recently updated curriculum prepared by the Aleutian Pribilof Islands Association (APIA 2017), it is noted that in Unalaska and the other APIA communities: *Fish are a central part of the Unangan/Unangas diet. Some of the more popular fish eaten in the Aleutian and Pribilof Islands Region include: halibut, salmon, Pacific cod, dolly varden, sculpin, pogy or greenling, rockfish, and herring. In the Unangan/Unangas language, Pacific cod are called “Atxidaŕ”.*²⁷

5.2.1.2 Community Demographics

According to U.S. Census figures from 2010, a total of 4,376 people reside in Unalaska. There were proportionally more males in the population than in less industrialized communities, as demonstrated in Figure 4, and the largest cohort of residents consisted of individuals aged 40 to 49. The gender composition of Unalaska varies widely from state and national averages as it is heavily influenced by the large multi-species shoreside seafood plants that operate in the community, which in demographic terms may be described as operating in industrial enclave type of developments, with their workforces drawn virtually exclusively from outside the community (AECOM 2013).

Figure 4. Unalaska 2010 Population Structure



Source: U.S. Census Bureau 2011

Census figures from 2010 show that 39.2 percent of the residents of Unalaska identified themselves as White, which was the largest racial group. The second-largest racial group was Asian at 32.6 percent. Approximately 6.9 percent identified themselves as Black/African American, 6.1 percent as American Indian or Alaska Native, 2.2 percent as Pacific Islander, and 13.0 percent as “some other race” or “two or more races.” Finally, 15.2 percent of the residents of any race in Unalaska identified themselves as Hispanic. Based on race and ethnicity combined, 66.3 percent of Unalaska’s total population was composed of minority residents (that is, all residents other than those identified as

²⁷ <https://www.apiai.org/community-services/traditional-foods-program/glossary-vocabulary/>

White/non-Hispanic [race/ethnicity]). Unalaska’s population is similar to several other regional communities in that it has a proportionately large population associated with seafood processing in combination with a small historic Alaska Native community. On the other hand, Unalaska is unusual in the region in that it also has an established commercial fishing support service industry that has influenced the racial and ethnic composition of the population. The relatively large Asian/Pacific Islander/Other population segment is emblematic of larger multi-species seafood processing operations in the community, in the nearby Aleutians East Borough (AEB), and the Aleutian/Pribilof Islands region in general, that draw a proportionately large number of workers from a non-local labor pool (AECOM 2013).

Housing data from the U.S. Census, as shown in Table 17, indicate that 52.0 percent of all Unalaska residents lived in non-group quarters housing, with total housing units in Unalaska numbering 1,106. Of those housing units, approximately 83.8 percent were occupied. Family households numbered 533, with an average household size of 2.46 persons. The large proportion of residents living in group quarters is indicative of a relatively transient population segment living in group housing associated with a large local seafood processing operation (AECOM 2013).

Table 17. Unalaska 2010 Housing Information

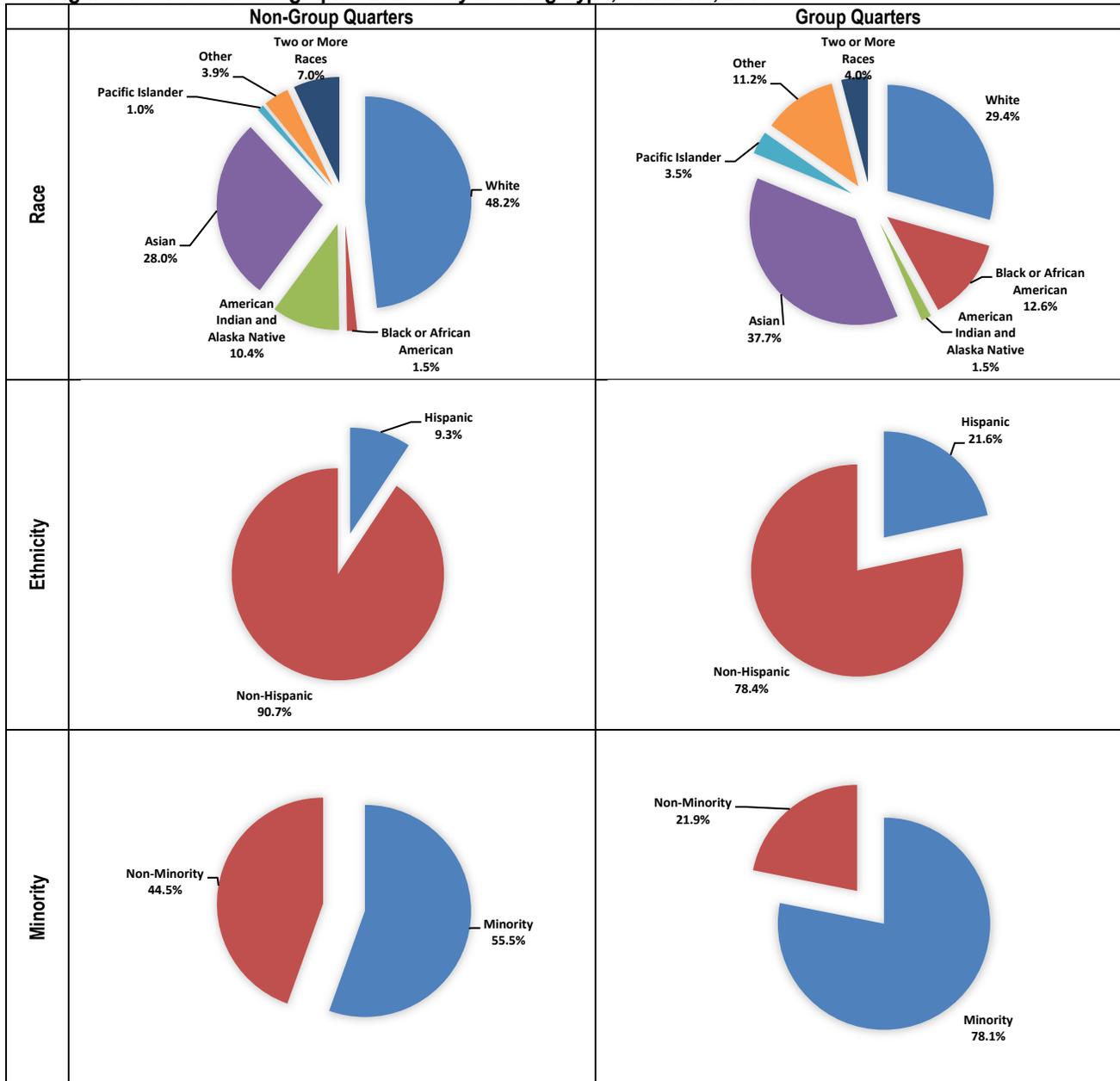
Category	Number	Percent
Total Population	4,376	100%
Living in Non-Group Quarters	2,277	52.0%
Living in Group Quarters	2,099	48.0%
Total Housing Units	1,106	100%
Occupied Housing (Households)	927	83.8%
Vacant Housing	179	16.2%
Family Households	533	57.5%
Average Household Size	2.46	na

na = not applicable

Source: U.S. Census Bureau 2011

Figure 5 provides a comparison of selected demographic indices for race, ethnicity, and minority status by housing type for Unalaska. As shown, the demographics of the portion of the population living in non-group quarters is quite different from the portion of the population living in group quarters. Alaska Native residents make up a relatively large proportion of the non-group quarters population and a relatively small proportion of the group quarters population, with the opposite being essentially true for persons of Black or African American/Pacific Islander/Other descent. Group quarter housing in Unalaska, with its large processing capacity, is primarily processor housing that, in turn, houses a substantial number of persons relative to the total population of the community.

Figure 5. Selected Demographic Indices by Housing Type, Unalaska, 2010



Source: U.S. Census Bureau 2011

5.2.1.3 Local Economy and Socioeconomic Context

As described in AECOM (2010), Unalaska is in a unique position with respect to BSAI fisheries. It is the site of both the most intense direct and indirect fishery economic sector activity among all the communities in the region. More BSAI crab and groundfish are processed in Unalaska than in any other port, and the support service sector is developed to a greater degree in Unalaska than any other community on the Bering Sea. As a result, Unalaska is a community whose economy is strongly tied to Bering Sea commercial fisheries in general, as well as to several individual fisheries.

As fishing seasons cycle throughout the year, employment rates fluctuate. The latest employment estimate based on the 2013-2017 U.S. Census American Community Survey suggests that 3,406 people were employed in Unalaska, with an unemployment rate of 1.6 percent. Per capita income for

people in Unalaska was estimated at \$36,514, median household income was \$91,635, and median family income was \$101,563. An estimated 6.2 percent of Unalaska’s residents were considered low-income, defined as those individuals living below the poverty level threshold (Alaska Department of Labor and Workforce Development 2018). Table 18 displays the top five occupations in Unalaska.

Table 18. Unalaska Top Five Occupations, 2016

Rank	Occupation
1	Meat, Poultry, and Fish Cutters and Trimmers
2	Material Moving Workers, All Other
3	Laborers and Freight, Stock, and Material Movers (Hand)
4	Stock Clerks and Order Fillers
5	Office Clerks, General

Source: Alaska Department of Labor and Workforce Development 2018

5.2.1.4 Commercial Fisheries Engagement

Overview

As described in AECOM (2010), in the late 1970s and early 1980s Unalaska prospered from the king crab fishery. The crab boom resulted in a dramatic increase in both the volume of landings and the number of processors in town. In the mid-1970s there were from 90 to 100 commercial vessels regularly fishing the Bering Sea. By 1979 the number had jumped to between 250 and 280, an increase so dramatic that it was difficult for skippers to find crew members. The king crab fishery subsequently declined precipitously, and fishermen and processors alike diversified their businesses to survive economically. One of the avenues of diversification was the pollock fishery, which proved an economic mainstay for the community in subsequent years. A detailed description of the growing community engagement in and dependency on the groundfish fishery is available AECOM (2010).

While truly local vessels are comparatively few and of a relatively small scale, local processing plants are large and receive landings from vessels from elsewhere in Alaska and from the Pacific Northwest (and at least a few from further afield). Economic activity in the community is cyclic, with busy periods coinciding with major fishery openings and closings.

Unalaska did not qualify as a CDQ community, but it is an ex-officio member of the APICDA CDQ group. This group partners with both an onshore and offshore entity and offers training programs in Unalaska. Though Unalaska is not formally a CDQ community, according to interview data it is in fact where multiple APICDA training and other programs are run because of the size of the population it services in the community (AECOM 2010).

Harvest Sector

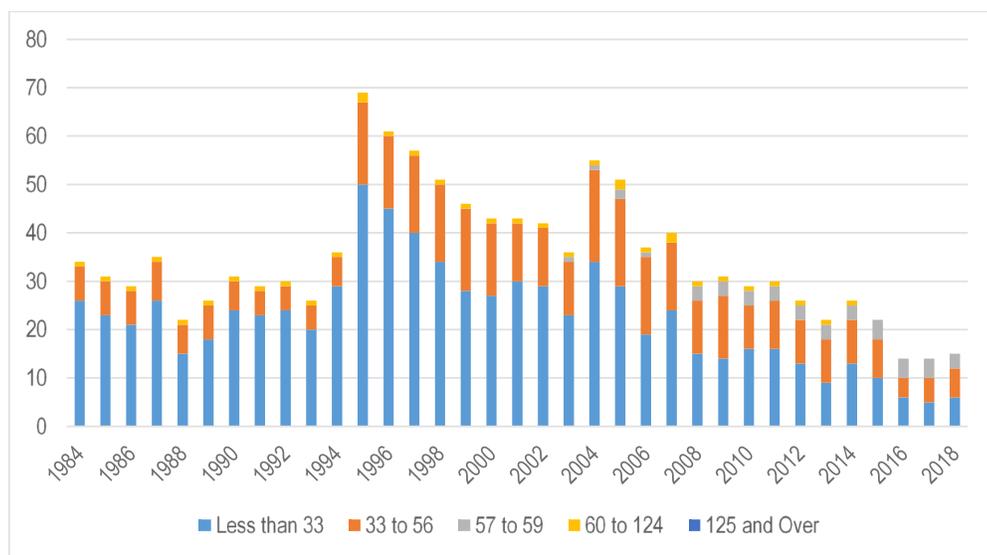
General

Figure 6 shows the changes in the number of locally owned commercial fishing vessels, by size class, for the period 1984 through 2018.²⁸ As shown, there were relatively few vessels in the community in the 1980s and early 1990s. In 1995, the number of vessels increased to nearly 70. Since then, the

²⁸ The data in this figure, and the analogous figure in the other community profiles, are from a different CFEC source than the CFEC data incorporated into primary dataset used for the analysis in this SIA (and represent a count of vessel registrations in a given community, not just vessels active in particular fisheries or even all fisheries with an ownership address in the community). As a result, there are some limitations on comparability between this figure series and other figures and tables in this SIA. However, these differences do not impact any of the conclusions reached in this document.

number of locally owned commercial fishing vessels has decreased (aside from a modest, temporary spike in 2004 and 2005). The last three years of the data (2006-2018) have the lowest total number of locally owned commercial fishing vessels seen in the data. Detailed, if now somewhat dated, overviews of the Unalaska fleet, including types of vessels and their associated annual rounds, distribution of permit holders, catch and earnings estimates, and landings inside and outside of the community, along with an analysis of the spatial distribution of the fishing effort of the local fleet are available in earlier NPFMC community profiles (AECOM 2010; EDAW 2005). As updating this information is effort intensive and not central to the current BSAI non-CDQ directed Pacific cod trawl fishery-oriented community analysis, this overarching characterization has not been updated here. Rather, a brief BSAI non-CDQ directed Pacific cod trawl fishery-focused discussion has been provided below.

Figure 6. Number of Commercial Fishing Vessels Owned by Unalaska Residents, by Length Category, 1984-2018.



Source: Commercial Fisheries Entry Commission 2018

From 2008 through 2017, the annual number of active commercial fishing vessels with Unalaska/Dutch Harbor ownership addresses participating in all fisheries, using all gear types in all areas combined (i.e., the community commercial fishing fleet), varied from 25 (in 2009) to 10 (in 2017 [the most recent year for which data are available]), with an annual average of 18.1 active commercial fishing vessels with Unalaska/Dutch Harbor ownership addresses over this time span. The annual ex-vessel gross revenues (in real 2010 dollars) for these vessels ranged from \$7.78 million (in 2008) to \$3.85 million (in 2017), with an annual average of \$4.50 million in ex-vessel gross revenues over this period (Source: Alaska Department of Fish and Game (ADFG)/CFEC Fish Tickets, data compiled by AKFIN in Comprehensive_FT). (See Table 64 [in Attachment B] for more detail.)

In 2016, the Qawalangin Tribe and the Unalaska Native Fishermen’s Association submitted a proposal to the Alaska Board of Fisheries to permanently close Unalaska Bay to commercial trawl fishing. In 2018, the small boat Dutch Harbor Pacific pot cod state waters fishery got an increased fish allocation, when the Alaska Board of Fisheries raised the catch limit from 6.4 percent to 8 percent of the overall Bering Sea quota.

BSAI non-CDQ Directed Pacific Cod Trawl Fishery Catcher Vessels

No catcher vessels with Unalaska/Dutch Harbor ownership addresses participated in the BSAI non-CDQ directed Pacific cod trawl fishery during the years 2008-2018. Similarly, no catcher vessels using LLP licenses with Unalaska/Dutch Harbor ownership addresses participated in the BSAI non-CDQ directed Pacific cod trawl fishery during the years 2008-2018.

BSAI non-CDQ Directed Pacific Cod Trawl Fishery Catcher Vessel Crew

The limited available data on the number of crew positions on BSAI non-CDQ directed Pacific cod trawl catcher vessels (i.e., the crew data for GOA trawl catcher vessels that filed an EDR report in 2016 and also participated in the BSAI non-CDQ directed Pacific cod trawl fishery that same year) do not show any crew members with Unalaska/Dutch Harbor addresses participating in the fishery that year. These data are, however, substantially incomplete as discussed in Section 3.5.2.

BSAI non-CDQ Directed Pacific Cod Trawl Fishery Catcher Vessels Homeported

In the most recent year for which data are available (2018), Unalaska/Dutch Harbor was listed as the homeport of seven catcher vessels active in the BSAI non-CDQ directed Pacific cod trawl fishery that year, six with Seattle WA ownership addresses and one with a Shoreline WA ownership address (Table 48). No Alaska community other than Kodiak was listed as homeport for more vessels in this class active in this fishery in 2018.

Catcher/Processor Sector

As noted in the support services discussion below, although Unalaska/Dutch Harbor is not the community of ownership address of any of the catcher/processors operating in the BSAI non-CDQ directed Pacific cod trawl fishery, it is the major Bering Sea support port for the BSAI catcher/processor fleet. Additionally:

- In the most recent year for which data are available (2018), Unalaska/Dutch Harbor was also listed as the homeport of five vessels with catcher/processor endorsed LLP licenses that functioned as active catcher vessels in the BSAI non-CDQ directed Pacific cod trawl fishery that year, four with Seattle WA ownership addresses and one with a Shoreline WA ownership address (Table 50). No other Alaska community was listed as homeport for any vessels in this class active in this fishery in 2018.
- In the most recent year for which data are available (2018), Unalaska/Dutch Harbor was also listed as the homeport of two catcher/processors that accepted BSAI non-CDQ directed Pacific cod fishery trawl-caught that year, both of which had Seattle WA ownership addresses (Table 51). No other Alaska community was listed as homeport for any vessels in this class active in this fishery in 2018.

Shoreside Processing Sector

General

From 2008 through 2017, the annual number of active Unalaska/Dutch Harbor shoreside processors accepting deliveries from all species, area, and gear fisheries varied from 5 (in 2010 and 2017 [the most recent year for which data are available]) to 7 (in 2014), with an annual average of 5.9 shoreside processors operating over this time span. Based on a count of intent to operate codes, a total of 8

unique shoreside processing entities operated in Unalaska/Dutch Harbor during this period²⁹ (Source: ADFG/CFEC Fish Tickets, data compiled by AKFIN in Comprehensive_FT).

The annual ex-vessel value (real 2010 dollars) paid for all species, area, and gear fisheries at all active shoreside processors operating in Unalaska/Dutch Harbor combined during 2008-2018 ranged from \$166 million (in 2010) to \$250 million (in 2008), with an annual average of \$203 million ex-vessel value paid by all active shoreside processors over this period (Source: ADFG/CFEC Fish Tickets, data compiled by AKFIN in Comprehensive_FT). (See Table 65 [in Attachment B] for more detail.)

An earlier NPRB/NPFMC-funded community profile effort, *Comprehensive Baseline Commercial Fishing Community Profiles: Unalaska, Akutan, King Cove, and Kodiak, Alaska* (EDAW 2005), included a quantitative characterization of the Unalaska local commercial processing sector, including detailed information on an annual basis of the number of active processors, species processed, pounds purchased, ex-vessel values, and wholesale values by species, processing value added, and relative dependency by species. This information was partially updated for the BSAI crab rationalization five-year program review (AECOM 2010) that included a history of local processors and annual operational profiles that in turn included annual activity cycles and employment patterns by major fishery, among other types of data. This information, while now dated, still represents the best available information of this type and is included by reference in this analysis.

Processors that Accepted BSAI non-CDQ Directed Pacific Cod Fishery Trawl-Caught Deliveries

A total of five unique shoreside processors in Unalaska/Dutch Harbor accepted BSAI non-CDQ directed Pacific cod fishery trawl-caught deliveries over the years 2008-2018, averaging 3.2 processors participating per year, with three processors participating in 2008-2010, 2012, 2015, and 2017-2018, and four processors participating in 2011, 2013-2014, and 2016. These processors accrued a total of 36 shoreside processor participation years over this 12-year span, with the participation of individual processors ranging from one to 11 years:

- *Unalaska Processor A*, 2008-2018 (11 years [BS Pcod 11 years, AI Pcod 1 year])³⁰
- *Unalaska Processor B*, 2008-2018 (11 years [BS Pcod 11 years])³¹
- *Unalaska Processor C*, 2008 and 2010-2018 (10 years [BS Pcod 10 years, AI Pcod 2 years])³²
- *Unalaska Processor D*, 2016 (1 year [BS Pcod 1 year])
- *Unalaska Processor E*, 2011 and 2013-2014 (3 years [BS Pcod 3 years])³³

Unalaska Processors A, B, and C are all large, multi-species plants and were included in the shoreside processor operational profiles presented in the BSAI crab rationalization five-year program review SIA (AECOM 2010). Each of these processors are located on parcels of land that were in private

²⁹ The number of “intent to operate” codes may or may not closely correspond with physical processing plants in any given community, for a number of reasons. For example, a processing entity may use the physical plant of another processing entity to have its product custom processed or, as another example, one processing entity may purchase another in whole or in part and continue to retain two distinct intent to operate codes based on the retention/creation of different units within the corporate organization of the successor entity. In other cases, it is not apparent why what looks to be the same entity would have more than one intent to operate code.

³⁰ This processor accepted AI non-CDQ directed Pacific cod fishery trawl-caught deliveries in 2018.

³¹ This processor did not take any AI non-CDQ directed Pacific cod fishery trawl-caught deliveries during the period 2008-2018.

³² This processor accepted AI non-CDQ directed Pacific cod fishery trawl-caught deliveries in 2008 and 2012.

³³ This processor is shown in the primary dataset as operating in the Anchorage, but it is known to have operated in Unalaska/Dutch Harbor. It is shown as having two different names in the primary dataset (one in 2011 and another in 2013-2014), but it shown as operating under a single ITO code.

hands before the passage of the Alaska Native Claims Settlement Act (ANCSA) and therefore are directly subject to the Unalaska's property tax. Unalaska Processor E was also included in the shoreside processor operational profiles in that same document but is no longer in business and the facility, located on Ounalashka Corporation (the local ANCSA corporation) owned land, has been repurposed for other uses. Unalaska Processor D is a small, specialty operation and has not been profiled in previous NPFMC documents. It is located in a facility previously occupied by a different (and now defunct) small, specialty processor on land leased from the Ounalashka Corporation.

While not appearing in the data used for this analysis, Unalaska/Dutch Harbor is the location of operation of two inshore floating processors. One of these is now permanently moored in the community, having moved there from a moorage in Beaver Inlet (outside of the city boundaries in the fall of 2017). This inshore floating processor, which now leases land from the Ounalashka Corporation, was included in the included in the shoreside processor operational profiles presented in the BSAI crab rationalization five-year program review SIA (AECOM 2010), which described the platform as primarily pollock-focused, although Pacific cod was also processed on occasion. A second inshore floating processor, owned and operated by the same firm that owns and operates the inshore floating processor now permanently moored in the community, is seasonally present and actively processes at a moorage in Wide Bay within city boundaries of Unalaska. This second inshore floating processing platform has not been operationally profiled in previous NPFMC SIAs. Interview information from industry, however, suggests that while the first of these inshore floating processors remains primarily focused on pollock and takes relatively few BSAI non-CDQ directed Pacific cod trawl-caught deliveries in any given year, the second inshore floating processor is much more highly engaged in/dependent on that Pacific cod fishery.

Given the limited number of processors participating in the fishery, all first wholesale gross revenue information related to the processing of BSAI non-CDQ directed Pacific cod fishery trawl-caught deliveries to Unalaska/Dutch Harbor is confidential. While they would otherwise not be confidential, those revenues having been grouped with those of the single shoreside processor in Akutan (see Table 15), itself a large multi-species plant similar to those found in Unalaska/Dutch Harbor (and nowhere else in the region) to allow a more complete discussion of this sector. A general knowledge of the industry and previous community analyses would suggest, however, that during the 2008-2018, these revenues were likely a relatively modest proportion of overall processing first wholesale gross revenues for Unalaska/Dutch Harbor shoreside processors as a group, although it is important to note that (1) these revenues likely varied considerably from year to year and may have been substantial in absolute terms at least some years, (2) the timing of this processing may have been important to the operational flow of the plant and provided an important source of labor hours for processing staff, and (3) the processing of BSAI non-CDQ directed Pacific cod fishery trawl-caught deliveries in Unalaska/Dutch Harbor may have been strategically important to the overall operations of at least one processor looking to continuing access, or potential future access, to BSAI non-CDQ directed Pacific cod fishery trawl-caught deliveries as important to maintaining a desired flexibility and diversity of operations and to maintaining mutually beneficial relationships with some of its delivery fleet that participated in other fisheries with the plant.

Table 19 provides information on the “community footprint” of the catcher vessels that made BSAI non-CDQ directed Pacific cod fishery trawl-caught deliveries to Unalaska/Dutch Harbor shoreside processors 2008-2018, based on catcher vessel ownership address. As shown, of the 42 unique vessels that made BSAI non-CDQ directed Pacific cod fishery trawl-caught deliveries to Unalaska/Dutch Harbor shoreside processors during this period, 32 had Seattle MSA ownership addresses. Further, the importance of the Seattle MSA catcher vessel connection may be seen in the fact that no fewer than 6 and as many as 21 catcher vessels with Seattle MSA ownership addresses made BSAI non-CDQ directed Pacific cod fishery trawl-caught deliveries to Unalaska/Dutch Harbor shoreside processors in each year covered by the dataset (2008-2018). Among other catcher vessels making

BSAI non-CDQ directed Pacific cod fishery trawl-caught deliveries to Unalaska/Dutch Harbor shoreside processors during the period 2008-2018 was at least one catcher vessel each year with a Newport ownership address. A total of 9 unique vessels with Kodiak ownership addresses made BSAI non-CDQ directed Pacific cod fishery trawl-caught deliveries to Unalaska/Dutch Harbor shoreside processors over this time, with none doing so in three years and between 1 and 4 doing so in other years.

No EDR data on processor employment or payments to labor are available for Unalaska/Dutch Harbor shoreside processors.

Table 19. Community of Ownership of Catcher Vessels Making Bering Sea Non-CDQ Directed Pacific Cod Fishery Trawl-Caught Deliveries to Unalaska/Dutch Harbor (and Anchorage) Shoreside Processors, 2008-2018 (number of vessels)

Geography	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Annual Average 2008-2018 (number)	Annual Average 2008-2018 (percent)	Total Unique CVs 2008-2018 (number)
Kodiak	0	0	1	3	1	2	1	1	0	2	4	1.4	9.49%	9
Newport	1	1	2	1	1	1	1	1	1	1	1	1.1	7.59%	2
Seattle MSA*	12	6	8	9	10	14	14	10	10	11	21	11.4	79.11%	32
Other**	2	0	1	1	1	0	0	0	1	0	0	0.5	3.80%	3
Grand Total	15	7	12	14	13	17	16	12	12	14	26	14.4	100.00%	42
*Seattle MSA includes all communities in King, Pierce, and Snohomish counties.														
**Location suppressed to retain confidentiality.														
Note: Due to CV ownership movement between communities over the years shown, total unique CVs per community may not sum to state or grand totals.														
Source: NMFS Alaska Region Catch Accounting System, data compiled by AKFIN in Comprehensive_BLEND_CA														

5.2.1.5 Subsistence Fisheries Engagement

According to a survey conducted by ADFG in 1994 (Alaska Department of Fish and Game 2018), which is the most recent, most comprehensive, and considered to be the most representative survey available, subsistence harvesting in Unalaska is an important aspect of the local economy and social life. The ADFG survey was able to solicit responses from 15.1 percent of the households present in Unalaska at the time, which was calculated as 298 total people out of an estimated total population of 1,825. The results showed that 96.8 percent of the households used wild subsistence resources in one form or another, and 93.5 percent of all households actively harvested subsistence resources. The estimated Unalaska harvest per capita was 194.5 pounds of useable weight of wild resources, 27.7 percent of which were salmon, 41.6 percent were fish other than salmon, 15.4 percent were land mammals, 2.8 percent were feral animals, and 14.1 percent were marine invertebrates. The breakdown in the use of non-salmon subsistence species in 1994, which is still considered to be the most representative year, show that 90.8 percent of households used halibut, while other used species included Pacific cod (49.8 percent), char (39.0 percent), and Dolly Varden (39.0 percent). Data on marine mammal subsistence harvesting from the 1994 report that an estimated 54 harbor seals were harvested for subsistence, and that 12.0 percent of all households used harbor seals for subsistence. More recent harvest figures suggest that harbor seal subsistence has declined, with 0 estimated harbor seals harvested in 2008, the most recent year available.

In a less comprehensive but more recent study conducted in 2003 (Hamrick and Smith), 62 Unalaska Elders reported wide use of local fish and meat resources, with an emphasis on sharing practices. The top ten fish and meat items reported as harvested and used at that time (summer 2003) are shown in Table 20, including items that are not available locally but received in the community through sharing networks.³⁴ Qualitative comments received during the 2003 survey also indicated a high level of concern over the safety of foods obtained through subsistence harvests and it was also noted in 2003 individuals in Unalaska had access to three grocery stores. Therefore, Hamrick and Smith (2003) noted the possibility that individuals selected only the subsistence items they felt had the least risk of contamination at that time.

Table 20. Subsistence Harvest and Use in Unalaska, 2003

Rank	Resource
1	Red salmon
2	Silver salmon
3	Halibut
4	King salmon
5	Pink salmon
6	Moose
7	King crab
8	Pacific cod
9	Seal oil
10	Reindeer

Source: Hamrick and Smith 2003.

³⁴As stated in Hamrick and Smith (2003), "Food sharing between family members living in different locations is a cultural tradition that continues in the two Aleutian communities of Unalaska and Nikolski. Food items such as moose and reindeer were reported in Unalaska, even though...these items are not available locally. When asked, Elders also explained that Unalaska had more dependable flights so families in St. Paul, St. George and Anchorage could send seal meat from the Pribilofs or moose meat from the Interior with a high degree of certainly [sic] of a safe arrival in Unalaska. Many in Unalaska reported receiving reindeer meat from Atka."

Pacific cod shows up as a resource in the local archaeological record and patterns of use continue to evolve in contemporary Unalaska/Dutch Harbor as commercial and subsistence use are intertwined. “Cod are the second most harvested marine fish [for subsistence use], but it is not highly desired because of the worms in it. Some take it to use as bait in other marine fishing” (Reedy 2016).

Not all households have the ability to go fishing but still find ways to obtain fish, such as bartering for halibut with handmade specialty foods (Reedy 2016). With respect to Pacific cod, “some households are buying shatterpacks of cod fillets from [a specific locally operating processor] instead of harvesting themselves” with one advantage of doing so being that the cod is already de-wormed (Reedy 2016).

5.2.1.6 Support Services Sector

Unalaska is unique among Alaska coastal communities in the degree to which it provides support services for the Bering Sea fisheries. One long-time resident noting the lack of a sizable truly local fleet stated that “this is a service town, not a fishing town.” As described in detail in BSAI crab rationalization five-year program review (AECOM 2010), Unalaska serves as an important support port for several different sectors or subsectors of the groundfish fisheries, including harvesters (including a wide range of vessel classes), shoreside processors (including shore-based processors and inshore floating processors), and offshore processors (including catcher/processors and motherships). This same pattern holds true for the crab fishery and the other major fisheries of the area.

Also, as described in detail in that document, the local ANCSA corporation as the largest landowner in the community derives significant lease revenues from the support service industry. Direct support service providers in Unalaska include a wide range of companies, including such diverse services as accounting and bookkeeping, banking, construction and engineering, diesel sales and service, electrical and electronics services, mechanical services, freight forwarding, hydraulic services, logistical support, marine pilots/tugs, maritime agencies, gear replacement and repair, marine supply and hardware, vessel repair, fuel suppliers, stevedoring, vessel provisioning, vehicle rentals, warehousing, gear storage, bait sales, lodging services, commercial shipping, cold storage, and welding services, among others.

There is no other community in the region with this type of development and capacity to support the various fishery sectors in the Bering Sea. Qualitative operational profiles of a large sample of businesses that focus on direct fisheries support are provided in AECOM (2010) and include discussions of annual fluctuations in response to particular fisheries and related employment estimates. AECOM (2010) also provides information on a range of other local business/service activities that are less directly fisheries focus but still function as indirect support industries. While this information is now dated, it still represents the most recent comprehensive fishery support sector profile available for Unalaska/Dutch Harbor.

5.2.1.7 Public Revenues

Table 21 provides information on City of Unalaska selected fisheries-related general fund revenues for fiscal years 2000-2017. This table presents data on three direct fishery revenue sources, the city raw seafood tax, the state fisheries business tax, and the state fisheries resource landing tax and the relative contribution of each to a three-source total. Among the tax revenue sources in the table, revenues from city raw fish taxes and state shared fishery business taxes derive from catcher vessel landings at shoreside processors in the community, while revenues from the state shared fishery resource landing tax derive from landings made by catcher/processors and motherships.

Table 22 provides information on City of Unalaska general fund revenue and direct fishery revenue as a percentage of total general fund revenues for fiscal years 2000-2017. As shown, direct fishery revenue sources make up between 35 percent and 46 percent of all general fund revenues for the city in any given year during this period.

Table 23 provides information on City of Unalaska ports and harbors revenue for fiscal years 2000–2017. These revenues and fees received by the City of Unalaska are outside of the general fund and have ranged between roughly \$3 million and \$7 million per year over this period.

Table 21. City of Unalaska Selected Fisheries-Related General Fund Revenues, Fiscal Years 2000–2017

Fiscal Year	Revenue (dollars) by Direct Fishery Revenue Source				Revenue (percentage) by Direct Fishery Revenue Source			
	Direct Fishery Revenue Source			Direct Fishery Revenue Source Total	Direct Fishery Revenue Source			Direct Fishery Revenue Source Total
	City Raw Seafood Tax	State Fisheries Business Tax	State Fisheries Resource Landing Tax		City Raw Seafood Tax	State Fisheries Business Tax	State Fisheries Resource Landing Tax	
FY 2000	\$3,410,717	\$2,483,670	\$2,224,903	\$8,119,290	42.0%	30.6%	27.4%	100.0%
FY 2001	\$3,065,220	\$3,249,218	\$2,813,250	\$9,127,688	33.6%	35.6%	30.8%	100.0%
FY 2002	\$3,329,131	\$3,179,799	\$3,000,184	\$9,509,114	35.0%	33.4%	31.6%	100.0%
FY 2003	\$3,662,646	\$2,838,537	\$4,183,140	\$10,684,323	34.3%	26.6%	39.2%	100.0%
FY 2004	\$4,190,128	\$3,272,188	\$2,598,108	\$10,060,424	41.6%	32.5%	25.8%	100.0%
FY 2005	\$3,873,868	\$3,659,452	\$3,876,283	\$11,409,603	34.0%	32.1%	34.0%	100.0%
FY 2006	\$4,188,063	\$3,446,660	\$3,736,810	\$11,371,533	36.8%	30.3%	32.9%	100.0%
FY 2007	\$4,076,762	\$4,281,211	\$4,357,759	\$12,715,732	32.1%	33.7%	34.3%	100.0%
FY 2008	\$4,689,810	\$3,909,016	\$4,362,451	\$12,961,277	36.2%	30.2%	33.7%	100.0%
FY 2009	\$4,619,222	\$3,877,701	\$5,200,897	\$13,697,820	33.7%	28.3%	38.0%	100.0%
FY 2010	\$3,594,173	\$4,547,084	\$4,676,603	\$12,817,860	28.0%	35.5%	36.5%	100.0%
FY 2011	\$5,371,768	\$3,199,290	\$3,531,739	\$12,102,797	44.4%	26.4%	29.2%	100.0%
FY 2012	\$5,260,999	\$4,143,777	\$3,469,263	\$12,874,039	40.9%	32.2%	26.9%	100.0%
FY 2013	\$4,784,198	\$4,398,441	\$4,898,543	\$14,081,182	34.0%	31.2%	34.8%	100.0%
FY 2014	\$4,449,921	\$4,377,934	\$6,974,887	\$15,802,742	28.2%	27.7%	44.1%	100.0%
FY 2015	\$4,981,770	\$3,639,448	\$5,014,309	\$13,635,527	36.5%	26.7%	36.8%	100.0%
FY 2016	\$5,123,372	\$4,099,315	\$3,034,438	\$12,257,125	41.8%	33.4%	24.8%	100.0%
FY 2017	\$4,657,385	\$4,276,287	\$8,272,661	\$17,206,333	27.1%	24.9%	48.1%	100.0%
FY 2018*	\$5,300,000	\$3,900,000	\$5,300,000	\$14,500,000	36.6%	26.9%	36.6%	100.0%

*FY 2018 is Budget (all other years are actuals)

Source: City of Unalaska Finance Department spreadsheet originally supplied in 2001 and updated December 2004, May 2008, and September 2010; Alaska Department of Commerce, Community, and Economic Development, 2015. FY 2015 through FY 2018: City of Unalaska, Alaska. Operating and Capital Budgets, Fiscal Year 2019. https://www.ci.unalaska.ak.us/sites/default/files/fileattachments/Finance/page/5871/final_2019.pdf. Accessed 12/29/18.

Table 22. City of Unalaska General Fund Revenue and Direct Fishery Revenue as a Percentage of Total General Fund Revenues, Fiscal Years 2000-2017

Fiscal Year	Grand Total All General Fund Revenue	Direct Fishery Revenue Source Total*	Direct Fishery Revenue Source Total as a Percent of All General Fund Revenue
FY 2000	\$19,413,548	\$8,119,290	41.80%
FY 2001	\$22,170,480	\$9,127,688	41.20%
FY 2002	\$22,852,455	\$9,509,114	41.60%
FY 2003	\$24,387,238	\$10,684,323	43.80%
FY 2004	\$21,723,394	\$10,060,424	46.30%
FY 2005	\$28,279,878	\$11,409,603	40.40%
FY 2006	\$26,238,173	\$11,371,533	43.30%
FY 2007	\$30,791,407	\$12,715,732	41.30%
FY 2008	\$32,900,676	\$12,961,277	39.40%
FY 2009	\$38,855,095	\$13,697,820	35.30%
FY 2010	\$30,914,418	\$12,817,860	41.50%
FY 2011	\$33,957,677	\$12,102,797	35.60%
FY 2012	\$32,835,918	\$12,874,039	39.20%
FY 2013	\$34,423,906	\$14,081,182	40.90%
FY 2014	\$36,282,469	\$15,802,742	43.60%
FY 2015	\$37,666,006	\$13,635,527	36.20%
FY 2016	\$31,932,495	\$12,257,125	38.38%
FY 2017	\$37,239,690	\$17,206,333	46.20%
FY 2018*	\$33,017,227	\$14,500,000	43.92%

*FY 2018 is Budget (all other years are actuals)

Note: For this table, "Direct Fishery Revenue" is defined as being composed of Unalaska municipal raw seafood tax and intergovernmental revenues accruing to Unalaska from the state fisheries business tax and the state fisheries resource landing taxes (see previous table). It does not include any fisheries influence on other revenue sources.

Source: Derived from City of Unalaska Finance Department spreadsheets supplied December 2004, May 2008, September 2010, and October 2010; Alaska Department of Commerce, Community, and Economic Development 2015. FY 2015 through FY 2018: City of Unalaska, Alaska. Operating and Capital Budgets, Fiscal Year 2019.

https://www.ci.unalaska.ak.us/sites/default/files/fileattachments/Finance/page/5871/final_2019.pdf. Accessed 12/29/18.

Table 23. City of Unalaska Ports and Harbors Revenue, Fiscal Years 2000–2017

Fiscal Year	Unalaska Marine Center Dock	Spit Dock	Small Boat Harbor	Cargo Dock	Other Revenue & Fees**	Total
FY 2000	\$2,325,996	\$489,130	\$91,349	–	\$120,827	\$3,027,302
FY 2001	\$2,616,894	\$539,429	\$88,714	\$77,212	\$92,915	\$3,415,164
FY 2002	\$2,884,269	\$496,508	\$87,889	\$57,270	\$116,273	\$3,642,209
FY 2003	\$3,090,519	\$553,386	\$90,663	\$104,832	\$23,253	\$3,862,653
FY 2004	\$3,361,385	\$552,891	\$102,901	\$68,692	\$30,284	\$4,116,153
FY 2005	\$3,335,908	\$588,934	\$112,003	\$173,325	\$39,011	\$4,249,181
FY 2006	\$3,399,500	\$460,141	\$118,261	\$473,302	\$59,607	\$4,510,811
FY 2007	\$3,731,656	\$332,233	\$102,014	\$226,035	\$33,366	\$4,425,304
FY 2008	\$3,871,742	\$582,444	\$102,974	\$284,315	\$10,748	\$4,852,223
FY 2009	\$2,781,874	\$619,219	\$100,346	\$198,376	\$52,300	\$3,752,114
FY 2010	\$3,136,473	\$599,696	\$107,748	\$87,655	\$75,962	\$4,004,534
FY 2011	\$4,616,912	\$580,174	\$117,933	\$124,853	(\$300,704)	\$5,139,168
FY 2012	\$4,131,575	\$553,375	\$147,947	\$143,930	\$481,921	\$5,458,748
FY 2013	\$4,201,014	\$528,852	\$86,955	\$87,897	\$880,206	\$5,784,924
FY 2014	\$4,856,082	\$544,247	\$94,126	\$104,387	\$862,092	\$6,460,934
FY 2015	\$4,891,771	\$521,266	\$86,718	\$160,112	\$878,211	\$6,538,079
FY 2016	\$5,093,235	\$558,735	\$72,883	\$181,941	\$726,893	\$6,633,685
FY 2017	\$4,907,598	\$554,315	\$80,195	\$178,280	\$919,444	\$6,639,831
FY 2018*	\$5,395,000	\$518,000	\$98,090	\$201,700	\$873,000	\$7,085,790

*FY 2018 is Budget (all other years are actuals)

**In recent years the Carl E. Moses Boat Harbor, which opened in November 2011, has accounted for most of the revenue in this category.

Note: Rows may not sum to total column due to rounding error.

Source: Derived from City of Unalaska Finance Department spreadsheets supplied December 2004, May 2008, September 2010, and October 2010; Alaska Department of Commerce, Community, and Economic Development 2015. FY 2015 through FY 2018: City of Unalaska, Alaska. Operating and Capital Budgets, Fiscal Year 2019.

https://www.ci.unalaska.ak.us/sites/default/files/fileattachments/Finance/page/5871/final_2019.pdf. Accessed 12/29/18.

It is important to note that Unalaska/Dutch Harbor also directly benefits from public revenues generated by other fishery related activities. For example, Unalaska, unlike other communities in the area, has a property tax that is paid by most shoreside processors, including all of the large, multi-species shore-based plants that are most heavily engaged in the BSAI non-CDQ directed Pacific cod fishery. Some of the smaller shoreside operations and a permanently moored inshore floating processor in the community generate local economic activity, but do not directly pay property taxes as they are located on lands leased from the Ounalashka Corporation. All shoreside plants, however, are subject to the city’s business personal property tax, along with other taxes and fees common to businesses operating in the community.

5.2.2 Akutan

5.2.2.1 Introduction, Location, and History

Akutan is located on Akutan Island in the eastern Aleutian Islands, one of the Krenitzin Islands of the Fox Island group. The community is approximately 35 miles east of Unalaska and 766 air miles southwest of Anchorage. Akutan is surrounded by steep, rugged mountains reaching over 2,000 feet in height. The village sits on a narrow bench of flat, treeless terrain. The small harbor is ice-free year-round.

Akutan is incorporated as a Second Class City within the AEB. The community is only accessible by air and sea and is served seasonally by ferry on the Aleutian Chain route of the Alaska Marine Highway system. Like Unalaska/Dutch Harbor, Akutan is typically considered a Bering Sea community and, like Unalaska/Dutch Harbor, Akutan is also adjacent to the Western GOA Regulatory Area (610), as well as halibut regulatory area 4A, which straddles the GOA and the Bering Sea sides of the eastern portion of the Aleutian Chain.

Occupation of the area dates back approximately 8,500 years to the early Anangula tradition; evidence of an early Aleutian tradition was found on Umnak Island dating back approximately 5,400 years (National Oceanic and Atmospheric Administration 2013). Following European contact, multiple Akutan Island villages were decimated by disease; in the mid-to late-1800s people returned to Akutan (National Oceanic and Atmospheric Administration 2013).

The growth of Akutan in its contemporary form is typically traced to 1878 when a fur storage and trading port for the Western Fur & Trading Company was established. The company's agent established a commercial cod fishing and processing business that quickly attracted Aleut residents of nearby settlements to the community. A Russian Orthodox church and school were built in 1878, over a decade after Alaska became a U.S. Territory, and the Alexander Nevsky Chapel replaced the original church structure in 1918. The roots of commercial fishing in this area apparently include a local saltery that operated in the late 1800s. The Pacific Whaling Company built a whale processing station up Akutan Bay from the village site in 1912 and it operated as the only whaling station in the Aleutians until it closed in 1939. According to local interviews, there was little commercial activity in the area between the closing of the whaling station and 1948, when the processors, including Deep Sea Fisheries, first began using the bay for floating processing operations (EDAW 2005).

Akutan is a unique community in terms of its relationship to the Bering Sea commercial fisheries. It is the site of one of the largest of the shoreplants in the region, but it is also the site of a village that is geographically, demographically, socially, and historically distinct from the shoreplant. This “duality” of structure has had marked consequences for the relationship of Akutan to the Bering Sea commercial fisheries. One example of this may be found in Akutan's status as a CDQ community. Initially (in 1992), Akutan was (along with two other AEB communities, King Cove and Sand Point, as well as nearby Unalaska) deemed not eligible for participation in the CDQ program based upon the fact that the community was home to “previously developed harvesting or processing capability sufficient to support substantial groundfish participation in the BSAI ...” though they met other qualifying criteria. The Akutan Traditional Council initiated action to show that the community of Akutan, per se, was separate and distinct from the seafood processing plant some distance away from the residential concentration of the community site, that interactions between the community and the plant were of a limited nature, and that the plant was not incorporated in the fabric of the community such that little opportunity existed for Akutan residents to participate meaningfully in the Bering Sea pollock fishery (i.e., it was argued that the plant was essentially an industrial enclave or worksite separate and distinct from the traditional community of Akutan and that few, if any, Akutan residents

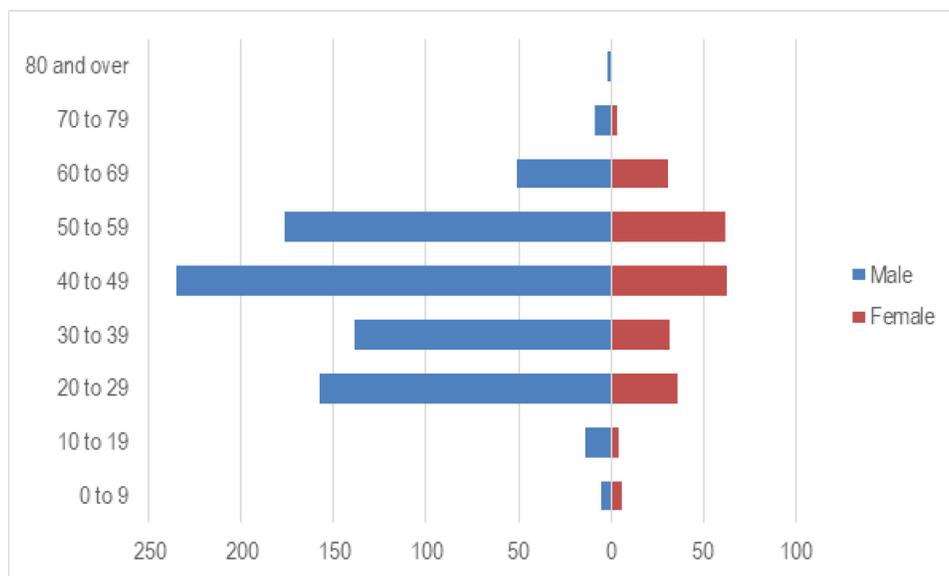
worked at the plant). With the support of the APICDA CDQ group and others, Akutan was successful in a subsequent attempt to become a CDQ community and obtained that status in 1996, joining the APICDA (EDAW 2005). Akutan remains the only community in the region that is both a direct major/developed participant in large scale BSAI fisheries and a CDQ community.

This process of Akutan becoming a CDQ community highlights a major aspect of the fundamentally different nature of Akutan and Unalaska (and of Akutan and King Cove) with respect to the form of engagement in and dependency on federally managed BSAI (and GOA) fisheries. Akutan, while deriving a range of economic and social benefits from the presence of a large shoreplant near the historic portion of community, still has in a number of ways not integrated large-scale commercial fishing activity with the daily life of its historic portion of the community, although access and interactions have changed in more recent years. Among these changes (as described in EDAW 2008a) were the opening of a beach level road connecting the seaplane ramp (which is connected to the residential community by road and a boardwalk system that is used by both pedestrians and all-terrain vehicles) to the processing plant site; the construction by shoreside processor of a nondenominational church and gymnasium/community building that is utilized by plant workers and local residents alike; the opening of the Akutan community library, museum, and recreation center located within the village itself that also draws patrons from both the plant and the rest of the community; and the integration of some long-term processor personnel into the fabric of the community, including individuals who have served the community (and the AEB) in elected office.

5.2.2.2 Community Demographics

According to U.S. Census figures from 2010, a total of 1,027 people reside in Akutan. There were proportionally more males in the population than in less industrialized communities, as demonstrated in Figure 7, and the largest cohort of residents consisted of individuals aged 40 to 49. The gender composition of Akutan varies widely from state and national averages as it is heavily influenced by the large local seafood processing operation, which in demographic terms may be described as an industrial enclave type of development, with its workforce drawn virtually exclusively from outside the community (AECOM 2013).

Figure 7. Akutan 2010 Population Structure



Source: U.S. Census Bureau 2011

Census figures from 2010 show that 23.3 percent of the residents of Akutan identified themselves as White, while the largest racial group was Asian at 43.3 percent. Approximately 17.9 percent identified themselves as Black/African American, 5.5 percent as American Indian or Alaska Native, 1.5 percent as Pacific Islander, and 8.6 percent as “some other race” or “two or more races.” Finally, 20.8 percent of the residents of any race in Akutan identified themselves as Hispanic. Based on race and ethnicity combined, 90.8 percent of Akutan’s total population was composed of minority residents (that is, all residents other than those identified as White/non-Hispanic [race/ethnicity]). Akutan’s population is somewhat unique in that it has a relatively large population associated with the shore-based processor operating in an industrial enclave-style development a very short distance from, but largely demographically, socially, and culturally distinct from, the relatively small historic Alaska Native community of Akutan (with the recognition of this separation being key to Akutan ultimately qualifying as a CDQ community). The relatively large Asian/Pacific Islander/Other population segment is emblematic of larger seafood processing operations, particularly in the AEB and the Aleutian/Pribilof Islands region in general, that draw a proportionately large number of workers from a non-local labor pool (AECOM 2013).

Housing data from the U.S. Census, as shown in Table 24, indicate that 8.8 percent of all Akutan residents lived in non-group quarters housing, with total housing units in Akutan numbering 44. Of those housing units, approximately 90.9 percent were occupied. Family households number 23, with an average household size of 2.25 persons. The large proportion of residents living in group quarters is indicative of a relatively transient population segment living in group housing associated with a large local seafood processing operation (AECOM 2013).

Table 24. Akutan 2010 Housing Information

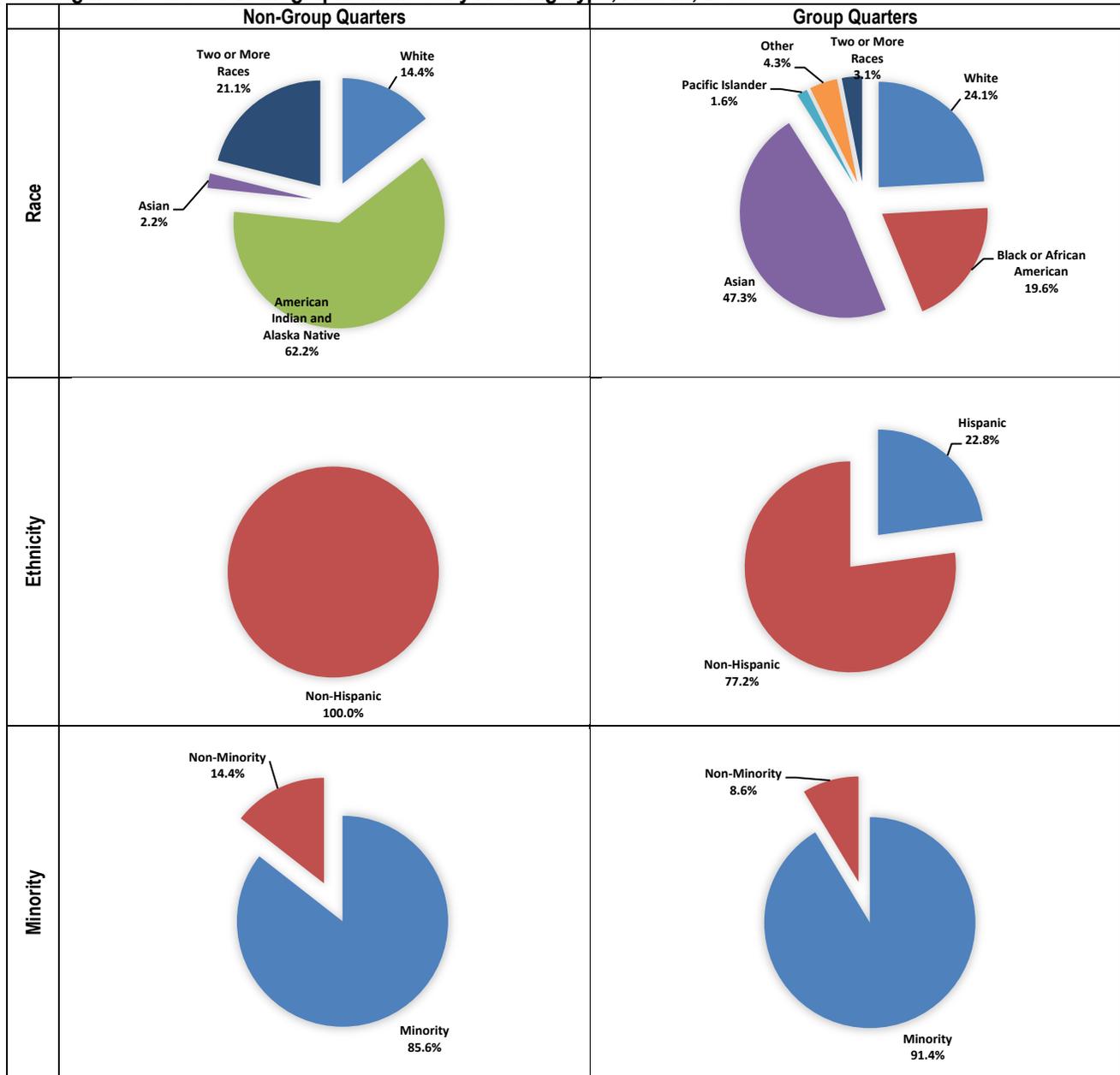
Category	Number	Percent
Total Population	1,027	100%
Living in Non-Group Quarters	90	8.8%
Living in Group Quarters	937	91.2%
Total Housing Units	44	100%
Occupied Housing (Households)	40	90.9%
Vacant Housing	4	9.1%
Family Households	23	57.5%
Average Household Size	2.25	na

na = not applicable

Source: U.S. Census Bureau 2011

Figure 8 provides a comparison of selected demographic indices for race, ethnicity, and minority status by housing type for Akutan. As shown, the demographics of the portion of the population living in non-group quarters is quite different from the portion of the population living in group quarters. Alaska Native residents make up a relatively large proportion of the non-group quarters population and none of the group quarters population, with the opposite being essentially true for persons of Asian/Black or African American/Pacific Islander/Other descent. Group quarter housing in Akutan, with its large processing capacity, is primarily processor housing that, in turn, houses a substantial number of persons relative to the total population of the community.

Figure 8. Selected Demographic Indices by Housing Type, Akutan, 2010



Source: U.S. Census Bureau 2011

5.2.2.3 Local Economy and Socioeconomic Context

Akutan is a community that traces its ancestral population to other small villages in the area and the shape of the contemporary community to roots in commercial fishing, fur trading, and whaling. In terms of the population components of the community, and the relationship between local commercial fishery-related workers and the rest of the population, Akutan is unlike Unalaska or King Cove. Compared to King Cove and Sand Point, other AEB communities with a single large shore processing plant, Akutan’s local processing plant is more truly an enclave type of operation than the plants in those communities. In the not-too-distant past, it was decidedly unlike Unalaska, which features plants with a range of “separateness” from the community, as there was little social integration of at

least some longer-term plant employees into the social fabric of the community, but this has been changing in recent years in Akutan (EDAW 2008b).

As described in EDAW (2008b), the community of Akutan participates in commercial fisheries a number of different ways: through locally owned small vessel harvesting, participation in the CDQ program, having a major seafood processing plant located in the community, and providing limited support services to the fishery in the community. Overall, the private sector economy of the community, exclusive of the local processor, is very limited.

As fishing seasons cycle throughout the year, employment rates fluctuate. The latest employment estimate based on the 2013-2017 U.S. Census American Community Survey suggests that 739 people were employed in Akutan, with an unemployment rate of 0.5 percent. Per capita income for people in Akutan was estimated at \$26,978, median household income was \$26,750, and median family income was \$31,875. An estimated 19.0 percent of Akutan’s residents were considered low-income, defined as those individuals living below the poverty level threshold (Alaska Department of Labor and Workforce Development 2018). Table 25 displays the top five occupations in Akutan.

Table 25. Akutan Top Five Occupations, 2016

Rank	Occupation
1	Meat, Poultry, and Fish Cutters and Trimmers
2	Clerks, General
3	Food Batchmakers
4	Maids and Housekeeping Cleaners
5	First-line Supervisors of Farming, Fishing, and Forestry Workers

Source: Alaska Department of Labor and Workforce Development 2018

5.2.2.4 Commercial Fisheries Engagement

Overview

An earlier North Pacific Research Board/North Pacific Fishery Management Council (NPRB/NPFMC) funded community profile effort, *Comprehensive Baseline Commercial Fishing Community Profiles: Unalaska, Akutan, King Cove, and Kodiak, Alaska* (EDAW 2005), included a quantitative characterization of the Akutan local commercial fishing harvest sector, including detailed information on an annual basis, of local vessel characteristics, distribution of permit holders, catch and earnings estimates, and landings inside and outside of the community, along with an analysis of the spatial distribution of fishing effort of the local fleet. As updating this information is effort intensive and not central to the current analysis, it has not been updated for this community profile. EDAW (2008b) provides a limited update of the activities of the small local fleet. This information has not been updated and it is known that the local fleet has declined significantly in the intervening years. This same source (EDAW 2008b) provides a relatively detailed if now dated operational profile of the Akutan shoreside processing plant.

Harvest Sector

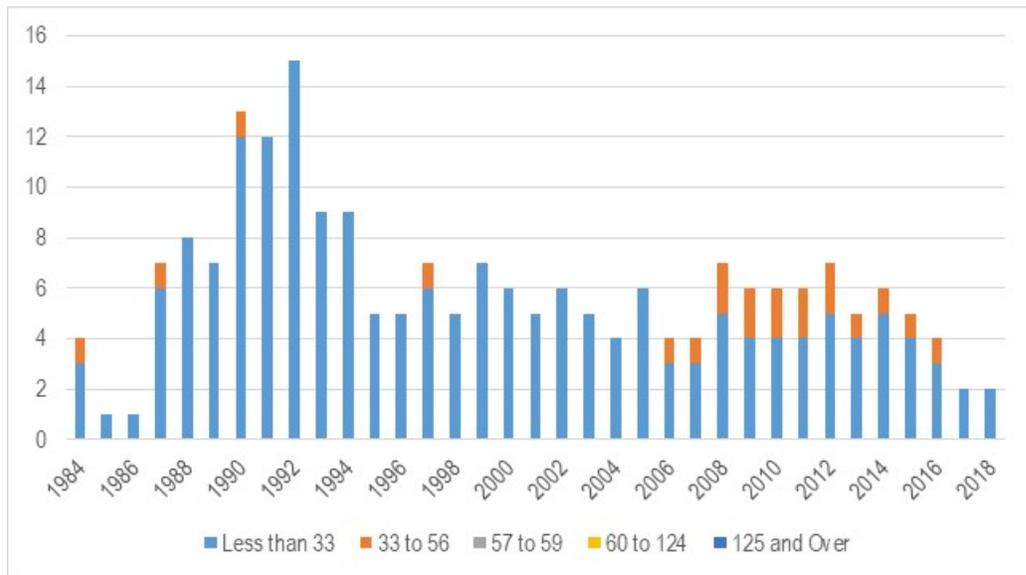
General

Detailed, if now somewhat dated, overviews of the Akutan fleet, including types of vessels and their associated annual rounds, distribution of permit holders, catch and earnings estimates, and landings inside and outside of the community, along with an analysis of the spatial distribution of the fishing effort of the local fleet are available in earlier NPFMC community profiles (AECOM 2010; EDAW

2005). As updating this information is effort intensive and not central to the current BSAI non-CDQ directed Pacific cod trawl fishery-oriented community analysis, this overarching characterization has not been updated here. Rather, vessel counts and earnings information have been updated and as brief BSAI non-CDQ directed Pacific cod trawl fishery-focused discussion has provided below.

Figure 9 shows the changes in the number of locally owned commercial fishing vessels, by size class, for the period 1984 through 2018. As shown, there were relatively few vessels in the community in the 1980s until increasing to 15 total vessels in 1992. Since 1992, the total number of locally owned commercial fishing vessels has decreased, fluctuating between 7 and 4 vessels through 2016. In 2017 and 2018, the total number of vessels decreased to 2.

Figure 9. Number of Commercial Fishing Vessels Owned by Akutan Residents, by Length Category, 1984-2018.



Source: Commercial Fisheries Entry Commission 2018

From 2008 through 2017, the annual number of active commercial fishing vessels with Akutan ownership addresses participating in all fisheries, using all gear types in all areas combined (i.e., the community commercial fishing fleet), varied from 6 (in 2008) to 1 (in 2017 [the most recent year for which data are available]), with an annual average of 3.7 active commercial fishing vessels with Akutan ownership addresses over this time span. For the individual years that can be disclosed from 2008 through 2017³⁵ the annual ex-vessel gross revenues (in real 2010 dollars) for these vessels ranged from \$378,000 (in 2008) to \$69,000 (in 2013), with an annual average of \$212,000 in ex-vessel gross revenues over this period (Source: ADFG/CFEC Fish Tickets, data compiled by AKFIN in Comprehensive_FT). (See Table 64 [in Attachment B] for more detail.)

BSAI non-CDQ Directed Pacific Cod Trawl Fishery Catcher Vessels

No catcher vessels with Akutan ownership addresses participated in the BSAI non-CDQ directed Pacific cod trawl fishery during the years 2008-2018. Similarly, no catcher vessels using LLP licenses

³⁵ Data from 2017 cannot be disclosed due to too few vessels, while data from 2016 has been suppressed to allow disclosure of a 2008-2017 annual average.

with Akutan ownership addresses participated in the BSAI non-CDQ directed Pacific cod trawl fishery during the years 2008-2018.

BSAI non-CDQ Directed Pacific Cod Trawl Fishery Catcher Vessel Crew

The limited available data on the number of crew positions on BSAI non-CDQ directed Pacific cod trawl catcher vessels (i.e., the crew data for GOA trawl catcher vessels that filed an EDR report in 2016 and also participated in the BSAI non-CDQ directed Pacific cod trawl fishery that same year) do not show any crew members with Akutan addresses participating in the fishery that year. These data are, however, substantially incomplete as discussed in Section 3.5.2.

Shoreside Processing Sector

General

Based on a count of intent to operate codes, a single unique shoreside processing entity operated in Akutan 2008-2018. While specific volume and value information associated with the plant is confidential for all commercial fisheries, a general knowledge of the industry and previous community analyses would suggest that (1) the plant is heavily focused on BSAI rather than GOA fisheries and (2) it is among the largest BSAI multi-species plants in terms of both processing capacity and processing workforce employment.

An earlier NPRB/NPFMC-funded community profile effort, *Comprehensive Baseline Commercial Fishing Community Profiles: Unalaska, Akutan, King Cove, and Kodiak, Alaska* (EDAW 2005), included a qualitative characterization of Akutan's commercial processing sector (as quantitative information was precluded by data confidentiality concerns). This information was partially updated for the BSAI crab rationalization three-year program review (EDAW 2008b). This information, while now dated, still represents the best available information of this type and is included by reference in this analysis.

Processors that Accepted BSAI non-CDQ Directed Pacific Cod Fishery Trawl-Caught Deliveries

Akutan's direct engagement in the BSAI non-CDQ directed Pacific cod trawl fishery over the years 2008-2018 was limited to the single unique shoreside processor that operated in the community during that time. This processor accepted BSAI non-CDQ directed Pacific cod fishery trawl-caught deliveries each year 2008-2018 (i.e., the community averaged 1.0 processors participating in the fishery per year). This processor (*Akutan Processor A*) accrued a total of 11 shoreside processor participation years over this 11-year span.

Given the limited number of processors participating in the fishery, all first wholesale gross revenue information related to the processing of BSAI non-CDQ directed Pacific cod fishery trawl-caught deliveries to Akutan is confidential, with those revenues having been grouped with those of the shoreside processors in Unalaska/Dutch Harbor also active in the fishery (see Table 15). A general knowledge of the industry and previous community analyses would suggest, however, that during the 2008-2018, these revenues were likely a relatively modest proportion of overall processing first wholesale gross revenues for Unalaska/Dutch Harbor and Akutan shoreside processors as a group, although it is important to note that (1) these revenues likely varied considerably from year to year and may have been substantial in absolute terms at least some years, (2) the timing of this processing may have been important to the operational flow of the plant and provided an important source of labor hours for processing staff, and (3) the processing of BSAI non-CDQ directed Pacific cod fishery trawl-caught deliveries to the communities may have been strategically important to the overall operations of one or more processors looking to continuing access, or potential future access, to BSAI

non-CDQ directed Pacific cod fishery trawl-caught deliveries as important to maintaining a desired flexibility and diversity of operations and to maintaining mutually beneficial relationships with some of its delivery fleet that participated in other fisheries with the plant. Regarding the latter point, the company that owns *Akutan Processor A* also owns a processing plant in Sand Point, which also has participated in the processing of BSAI non-CDQ directed Pacific cod fishery trawl-caught deliveries during multiple years in the 2008-2018 period.

Table 26 provides information on the “community footprint” of the catcher vessels that made BSAI non-CDQ directed Pacific cod fishery trawl-caught deliveries to the Akutan shoreside processor 2008-2018, based on catcher vessel ownership address. As shown, of the 39 unique vessels that made BSAI non-CDQ directed Pacific cod fishery trawl-caught deliveries to the Akutan shoreside processor during this period, 23 had Seattle MSA ownership addresses (with an average of 8.2 vessels making deliveries per year) and 11 had Newport ownership addresses (with an average of 6.4 vessels making deliveries per year). Among other catcher vessels making BSAI non-CDQ directed Pacific cod fishery trawl-caught deliveries to the Akutan shoreside processor during the period 2008-2018 were a total of 5 unique vessels with Kodiak ownership addresses.

No EDR data on processor employment or payments to labor are available for the Akutan shoreside processor.

Table 26. Community of Ownership of Catcher Vessels Making Bering Sea Non-CDQ Directed Pacific Cod Fishery Trawl-Caught Deliveries to Akutan Shoreside Processors, 2008-2018 (number of vessels)

Geography	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Annual Average 2008-2018 (number)	Annual Average 2008-2018 (percent)	Total Unique CVs 2008-2018 (number)
Kodiak	0	0	1	1	4	2	1	1	1	1	2	1.3	6.83%	5
Newport	8	7	7	7	7	7	5	5	5	7	5	6.4	34.15%	11
Seattle MSA*	7	2	3	7	9	9	10	13	10	9	11	8.2	43.90%	23
Other**	2	3	2	4	2	4	3	3	3	3	2	2.8	15.12%	5
Grand Total	17	12	13	19	22	22	19	22	19	20	20	18.6	100.00%	39
*Seattle MSA includes all communities in King, Pierce, and Snohomish counties.														
**Location suppressed to retain confidentiality.														
Note: Due to CV ownership movement between communities over the years shown, total unique CVs per community may not sum to state or grand totals.														
Source: NMFS Alaska Region Catch Accounting System, data compiled by AKFIN in Comprehensive_BLEND_CA														

5.2.2.5 Subsistence Fisheries Engagement

According to a survey conducted by ADFG in 2008 (Alaska Department of Fish and Game 2018), which is the most recent, most comprehensive, and considered to be the most representative survey available, subsistence harvesting in Akutan is an important aspect of the local economy and social life. The ADFG survey was able to solicit responses from 94.3 percent of the households present in Akutan at the time, covering almost the entire household population of the community. The results showed that 100.0 percent of the households used wild subsistence resources in one form or another, and 94.4 percent of all households actively harvested subsistence resources. The estimated Akutan harvest per capita was 327.3 pounds of useable weight of wild resources, 44.7 percent of which were salmon, 24.6 percent were fish other than salmon, 4.5 percent were land mammals, 4.3 percent were feral animals, and 10.5 percent were marine invertebrates. The breakdown in the use of non-salmon subsistence species in 2008, which is still considered to be the most representative year, show that 86.1 percent of households used halibut, while other used species included char (63.9 percent), Dolly Varden (58.3 percent), and Pacific cod (33.3 percent). Data on marine mammal subsistence harvesting from 2008 report that an estimated 17.8 harbor seals were harvested for subsistence, and that 52.8 percent of all households used harbor seals for subsistence.

The range of subsistence uses in Akutan was also lower in 2008 than in 1990. In 1990, 27 kinds of resources were used by at least 50 percent of Akutan households. In 2008, without exception, the percentage of households using these resources dropped, including 51 percent less households using Pacific cod. In most cases (54 percent), they cited “personal reasons.” In about 20 percent of the cases of changes in all subsistence use, respondents cited lower populations of a resource as the reason (Fall et al., 2013). Involvement of households in commercial fishing is often associated with high levels of production of fish and wildlife resources for subsistence uses. Of all Akutan’s households, 33 percent were involved in commercial fishing in 2008. These households averaged harvests of 941 pounds of wild foods, compared to 538 pounds for other households. Because of the relatively small number of commercial fishing households, however, they accounted for just 35 percent of the total community harvest, and differences in the harvests between these two groups were not statistically significant (Fall et al., 2013).

In a more recent study Schmidt et al. (2018) report findings from 26 households comprising 70 percent of Akutan households in April 2016. Per-capita harvests in Akutan were 439 pounds in 2016 and fish—primarily salmon but also including halibut and cod—made up 76% of the major subsistence resources harvested in Akutan that year. Residents noted they often set up their nets in the bay near the community, so harvests depend heavily on which species of fish is running. Schmidt et al. (2018) compared harvest and use diversity over time using information from ADFG (see Fall et al., 2013) and found that in 1990, the average number of species *harvested* by Akutan households was 20,³⁶ and the number *used* was 31. By 2008, the number harvested had declined to 10 and the number used to 17. During 2015 and 2016, the figures had declined more, to averages of 8 species harvested and 12 used. Between the 1990s and 2015/2016, the percentage of Akutan households harvesting subsistence resources declined for all resources except for salmon.

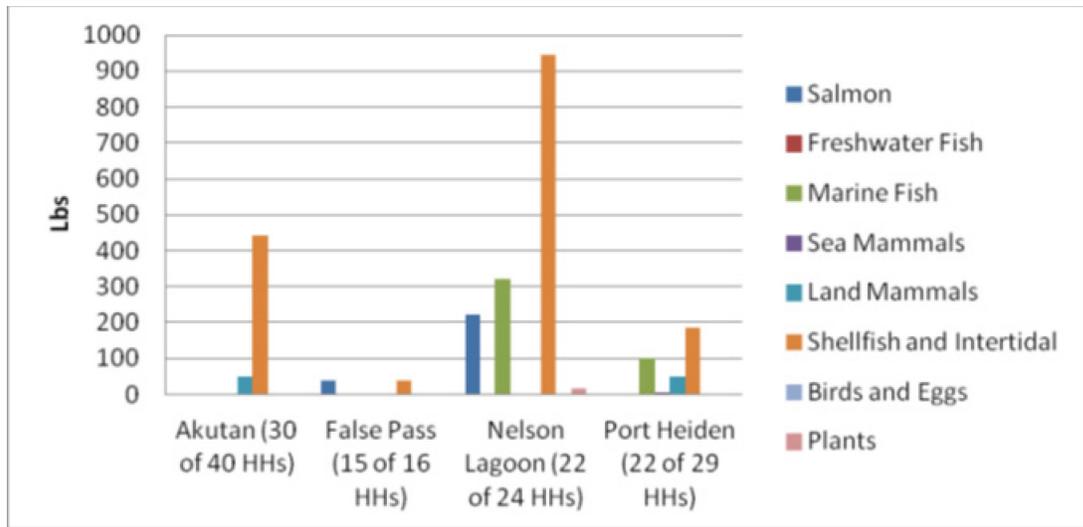
Spatial area of use in Akutan in 2008 the use area—437 km square—was much larger than in 2015, when it was 193 km square. Harvesting for fish other than salmon by 18 residents (12 with spatial data) covered the largest subsistence use area (164 km square). Schmidt et al. (2018) found that the overall area Akutan residents used for subsistence activities declined by nearly 50 percent. Akutan residents reported that enough subsistence resources are available, and in general those resources are healthy, but that halibut and cod are influenced by climate as well, with local people saying they are

³⁶ ...one of the largest in the state.

going deeper with the moving thermocline. Water temperatures near Akutan have increased since 1990—and more rain now occurs in Akutan. Temperatures are projected to keep rising and weather is getting harder to predict. Residents said that both cod and halibut are also influenced by non-climate factors like commercial fishing and pollution in Akutan Bay (Fall et al. 2013, Schmidt et al. 2018). Subsistence hunting, fishing, and gathering remain nutritionally, economically, culturally, and spiritually essential to individual and community well-being in Akutan. Access remains a key to hunting and fishing success. Access is shaped by environmental factors, such as abundance, distribution, weather, ice, and travel conditions. It is also affected by economic factors such as costs of equipment and fuel (Fall et al., 2013).

Pacific cod shows up as a resource in the local archaeological record and patterns of use continue to evolve. In Akutan, commercial and subsistence fisheries are intertwined. Commercial fishing activities directly support many subsistence pursuits with equipment, cash, time and labor, and commercial harvest zones are important to Akutan even if the members of the communities do not directly engage in the fisheries. As shown in Figure 10, recent work has found that a significant amount of wild foods formerly harvested are now purchased or increasingly purchased (Reedy-Maschner and Maschner 2012).

Figure 10. Pounds of Wild Foods Purchased by Community and Species Category, 2009.



Source: Reedy-Maschner and Maschner 2012

5.2.2.6 Support Services Sector

The BSAI crab rationalization three-year program review (EDAW 2008b) described the only direct fishery support business in Akutan as a dive operation that catered in part to fishing vessels, along with a range of other enterprises in the community that derive benefits from commercial fishing related activities in less direct ways. These latter types of businesses included the community store and lodging facilities owned and operated by the local ANCSA village corporation land leases by the local corporation, and a privately owned and operated tavern in the community. While this information is now dated, it still represents the most recent comprehensive fishery support sector profile available for Akutan.

5.2.2.7 Public Revenues

Table 27 provides information on City of Akutan selected fisheries-related general fund revenues for fiscal years 2000-2017. This table presents data on three direct fishery revenue sources, the city raw seafood tax, the state fisheries business tax, and the state fisheries resource landing tax and the relative contribution of each to a three-source total. Among the tax revenue sources in the table, revenues from city raw fish taxes and state shared fishery business taxes derive from catcher vessel landings at shoreside processors in the community, while revenues from the state shared fishery resource landing tax derive from landings made by catcher/processors and motherships.

Table 28 provides information on City of Akutan general fund revenue and direct fishery revenue as a percentage of total general fund revenues for fiscal years 2000-2017. As shown, direct fishery revenue sources make up between 71 percent and 87 percent of all general fund revenues for the city in any given year during this period.

Table 27. City of Akutan Selected Fisheries-Related General Fund Revenues (in dollars), Fiscal Years 2011–2017

Fiscal Year	Revenue (dollars) by Direct Fishery Revenue Source				Revenue (percentage) by Direct Fishery Revenue Source			
	Direct Fishery Revenue Source			Direct Fishery Revenue Source Total	Direct Fishery Revenue Source			Direct Fishery Revenue Source Total
	City Raw Seafood Tax	State Fisheries Business Tax	State Fisheries Resource Landing Tax		City Raw Seafood Tax	State Fisheries Business Tax	State Fisheries Resource Landing Tax	
FY 2011	\$1,222,653	\$827,408	\$154,758	\$2,204,819	55.5%	37.5%	7.0%	100.0%
FY 2012	\$1,385,057	\$853,570	\$244,134	\$2,482,761	55.8%	34.4%	9.8%	100.0%
FY 2013	\$1,663,209	\$1,186,396	\$178,611	\$3,028,216	54.9%	39.2%	5.9%	100.0%
FY 2014	\$1,715,128	\$1,217,118	\$157,540	\$3,089,786	55.5%	39.4%	5.1%	100.0%
FY 2015	unavailable	unavailable	unavailable	--	--	--	--	--
FY 2016	\$2,098,763	\$943,814	\$173,049	\$3,215,626	65.3%	29.4%	5.4%	100.0%
FY 2017	\$2,044,698	\$1,082,206	\$210,114	\$3,337,018	61.3%	32.4%	6.3%	100.0%
FY 2018*	\$1,800,000	\$950,000	\$0	\$2,750,000	65.5%	34.5%	0.0%	100.0%

*FY 2018 is Approved Budget (all other years are actuals)

Note: In 2013, the City of Akutan raised its local fish tax from 1.0 percent to 1.5 percent.

Source: Akutan fiscal year budgets for FY 2015-2019. <https://www.commerce.alaska.gov/dcra/dcrarepoext/Pages/FinancialDocumentsLibrary.aspx>. Accessed 12/29/18.

Table 28. City of Akutan General Fund Revenue and Direct Fishery Revenue as a Percentage of Total General Fund Revenues, Fiscal Years 2011-2017

Fiscal Year	Grand Total All General Fund Revenue	Direct Fishery Revenue Source Total*	Direct Fishery Revenue Source Total as a Percent of All General Fund Revenue
FY 2011	\$2,890,834	\$2,204,819	76.27%
FY 2012	\$3,091,904	\$2,482,761	80.30%
FY 2013	\$3,798,295	\$2,686,827	70.74%
FY 2014	\$3,611,589	\$3,089,786	85.55%
FY 2015	unavailable	unavailable	–
FY 2016	\$3,697,234	\$3,215,626	86.97%
FY 2017	\$4,389,308	\$3,337,018	76.03%
FY 2018*	\$6,535,086	\$2,750,000	42.08%

*FY 2018 is Adopted Budget (all other years are actuals)

For this table, "Direct Fishery Revenue" is defined as being composed of Akutan municipal fish tax revenue and intergovernmental revenues accruing to State from the state fisheries business tax and the state fisheries resource landing taxes (see previous table). It does not include any fisheries influence on other revenue sources.

Source: Akutan fiscal year budgets for FY 2015-2019.

<https://www.commerce.alaska.gov/dcra/dcrepoxet/Pages/FinancialDocumentsLibrary.aspx>.

Accessed 12/29/18.

5.2.3 King Cove

5.2.3.1 Introduction, Location, and History

King Cove is located on a sand spit fronting Deer Passage and Deer Island in the Gulf of Alaska on the south side of the Alaska Peninsula near its western tip. King Cove is approximately 625 miles southwest of Anchorage, approximately 425 miles southwest of Kodiak, and approximately 75 miles west of Sand Point. King Cove is incorporated as a First Class City within the AEB. The community is only accessible by air and sea, and is served seasonally by ferry on the Aleutian Chain route of the Alaska Marine Highway system; it is about 20 miles southeast of Cold Bay, which has an airport that can accommodate larger aircraft and remain operational across a much broader range of frequently occurring inclement weather conditions than the King Cove air strip, but the two communities are not road connected. King Cove, like Sand Point, is adjacent to the Western GOA Regulatory Area (610), as well as halibut regulatory area 3B.

Archaeological evidence suggests that Aleut (Unangan and Alutiiq) peoples have occupied the Alaska Peninsula for approximately 9,000 years, while excavation of a village site near the middle of King Cove suggests that Aleut people have been utilizing this site for at least 4,000 years (National Oceanic and Atmospheric Administration 2013). Although numerous pre-contact sites exist throughout the area, the contemporary community of King Cove traces its name to the 1800s when English immigrant Robert King married a local woman, became a trapper and sea otter hunter, and moved with his family to the cove. The beginnings of the contemporary community can be traced to 1911 when Pacific American Fisheries built a salmon cannery on the present-day town site. The cannery operated continuously between 1911 and 1976, when it was partially destroyed by fire (AECOM 2010); sold to its present owner a decade before the fire, it was rebuilt and continues to operate in the community (National Oceanic and Atmospheric Administration 2013).

Commercial fishing is a central foundation of the contemporary King Cove community, and often encompasses subsistence practices (Reedy-Maschner 2010). The majority of residents are active subsistence hunters, gatherers, and fishermen for all major species available, from cod to clams to caribou to geese (Reedy 2018).

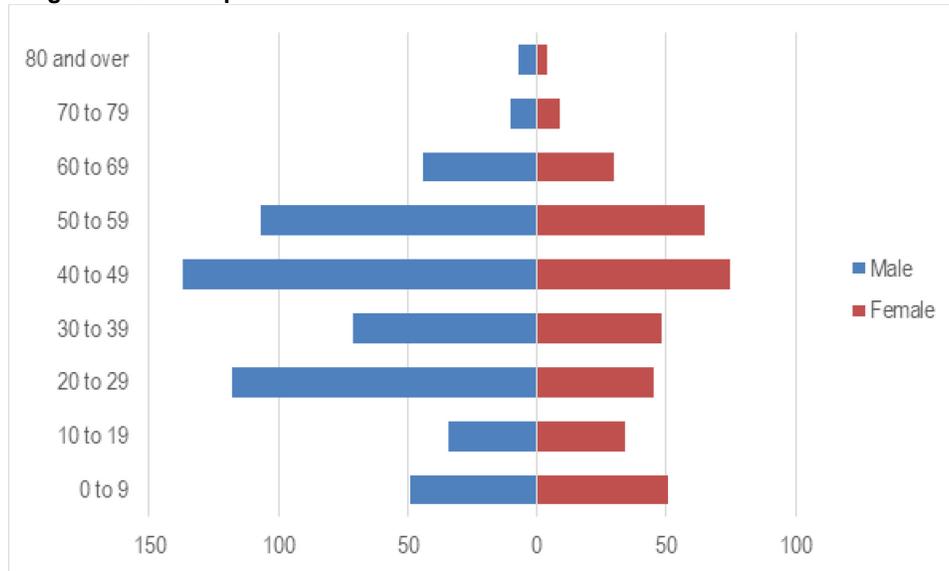
King Cove shares a number of community fisheries engagement attributes with Unalaska and Akutan but differs from either or both of those communities in other ways. Similar to Akutan, the community of King Cove in its contemporary location and form coalesced at least in part around commercial fishing related facilities, whereas in Unalaska commercial fishing related facilities came to an already permanently occupied village site. Like Unalaska (and unlike Akutan), King Cove is not a CDQ community. Like Akutan (and unlike Unalaska), Akutan is a part of an organized borough (the AEB) and is a one-processor town, with some historical attributes of a “company town,” but the degree of geographic, social, and economic integration of the local processing operation into the fabric of the community differ widely between Akutan and King Cove. Unlike either Unalaska or Akutan, King Cove has long had a relatively large and robust residential commercial fishing fleet that delivers to the local seafood processor(s).

5.2.3.2 Community Demographics

According to U.S. Census figures from 2010, a total of 938 people reside in King Cove. There were proportionally more males in the population than in most of the communities profiled, as demonstrated in Figure 11, and the largest cohort of residents consisted of individuals aged 40 to 49. The gender composition of King Cove varies widely from state and national averages as it is heavily influenced by the large local seafood processing operation, which in demographic terms may be

described as an industrial enclave type of development, with its workforce drawn virtually exclusively from outside of the community (AECOM 2013).

Figure 11. King Cove 2010 Population Structure



Source: U.S. Census Bureau 2011

Census figures from 2010 show that 16.2 percent of the residents of King Cove identified themselves as White, while the largest racial group was American Indian or Alaska Native at 38.4 percent. Approximately 1.0 percent identified themselves as Black/African American, 36.5 percent as Asian, 0.2 percent as Pacific Islander, and 7.8 percent as “some other race” or “two or more races.” Finally, 11.2 percent of the residents of any race in King Cove identified themselves as Hispanic. Based on race and ethnicity combined, 89.9 percent of King Cove’s total population was composed of minority residents (that is, all residents other than those identified as White/non-Hispanic [race/ethnicity]). In general, King Cove’s population is in part typical of a historic Alaska Native community, with a relatively large Alaska Native population segment. Additionally, the relatively large Asian/Pacific Islander/Other population segment is emblematic of larger seafood processing operations, particularly in the AEB and the Aleutian and Pribilof Islands region in general, that draw a proportionately large number of workers from a non-local labor pool (AECOM 2013).

Housing data from the U.S. Census, as shown in Table 29, indicate that 53.3 percent of all King Cove residents lived in non-group quarters housing, with total housing units in King Cove numbering 229. Of those housing units, approximately 79.0 percent were occupied. Family households number 119, with an average household size of 2.76 persons. The large proportion of residents living in group quarters is indicative of a relatively transient population segment living in group housing associated with the large local seafood processing operation (AECOM 2013).

Table 29. King Cove 2010 Housing Information

Category	Number	Percent
Total Population	938	100%
Living in Non-Group Quarters	500	53.3%
Living in Group Quarters	438	46.7%
Total Housing Units	229	100%
Occupied Housing (Households)	181	79.0%
Vacant Housing	48	21.0%
Family Households	119	65.7%

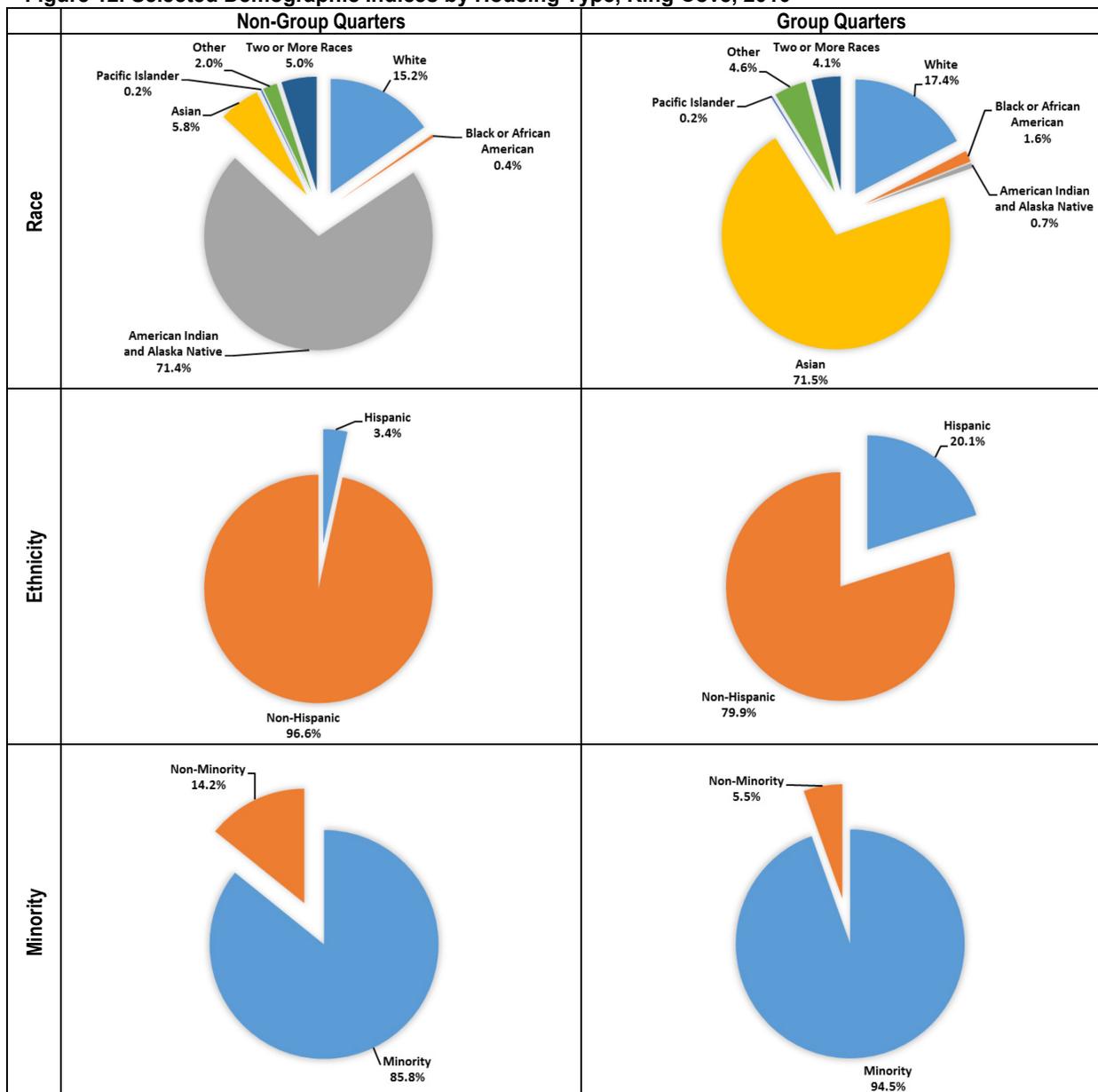
Category	Number	Percent
Average Household Size	2.76	na

na = not applicable

Source: U.S. Census Bureau 2011

Figure 12 provides a comparison of selected demographic indices for race, ethnicity, and minority status by housing type for King Cove. As shown, the demographics of the portion of the population living in non-group quarters is quite different from the portion of the population living in group quarters. Alaska Native residents make up a relatively large proportion of the non-group quarters population and a relatively small proportion of the group quarters population, with the opposite being true for persons of Asian/Pacific Islander/Other descent. Group quarter housing in King Cove, with its relatively large processing capacity, is primarily processor housing that, in turn, houses a substantial number of persons relative to the total population of the community.

Figure 12. Selected Demographic Indices by Housing Type, King Cove, 2010



Source: U.S. Census Bureau 2011

5.2.3.3 Local Economy and Socioeconomic Context

King Cove is a historical commercial fishing community that has had processing facilities as an integral part of the community for over a century. As discussed by AECOM (2010:2-125), King Cove is almost wholly dependent on commercial fishing; virtually everyone in the community is directly or indirectly connected to the local commercial fishing vessel fleet, the community’s large seafood processing operation, or service businesses that rely at least to some degree on fishing-related economic activity. Like Unalaska and Akutan the economic output of the community is closely tied to the overall output of the commercial fishery.

As fishing seasons cycle throughout the year, employment rates fluctuate. The latest employment estimate based on the 2013-2017 U.S. Census American Community Survey suggests that 690 people were employed in King Cove, with an unemployment rate of 2.3 percent. Per capita income for people in King Cove was estimated at \$31,439, median household income was \$66,923, and median family income was \$66,964. An estimated 15.9 percent of King Cove’s residents were considered low-income, defined as those individuals living below the poverty level threshold (Alaska Department of Labor and Workforce Development 2018). Table 30 displays the top five occupations in King Cove.

Table 30. King Cove Top Five Occupations, 2016

Rank	Occupation
1	Cashiers
2	Laborers and Freight, Stock, and Material Movers
3	Meat, Poultry, and Fish Cutters and Trimmers
4	Construction Laborers
5	Mechanical Engineers

Source: Alaska Department of Labor and Workforce Development 2018

5.2.3.4 Commercial Fisheries Engagement

Overview

The King Cove area has been the site of traditional settlements for thousands of years. The contemporary community of King Cove traces its current demographic and socioeconomic form to the development of commercial fishing, both harvesting and processing, in the area in the late 1800s. A recent study for the AEB emphasizes the continuing central place of commercial fishing in King Cove (and Sand Point) as a “fundamental, organizational, cultural, and economic foundation that often encompasses subsistence practices” (Reedy 2015), building on the concept that residents of these communities ultimately, in a number of ways, depend culturally and individually upon “entangled livelihoods” (Reedy-Maschner 2009) encompassing interdependent commercial and subsistence lifestyle components.

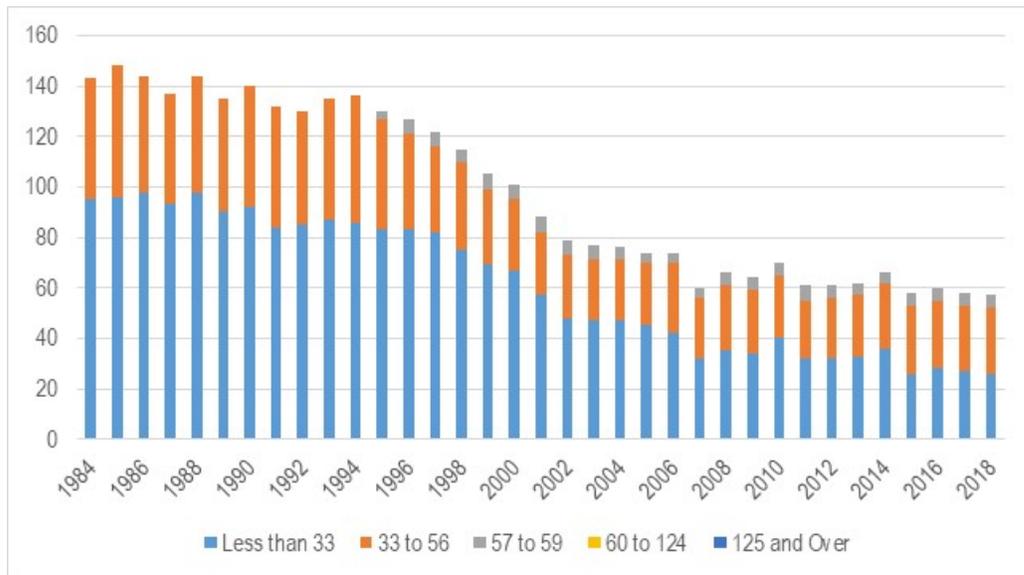
While King Cove is economically built upon the commercial fishing industry, it has a relatively modest direct commercial fisheries support service sector, consisting mostly of a handful of local business owners who specialize in marine-focused industries. Though a major processing port, King Cove, like Sand Point, differs markedly from Unalaska/Dutch Harbor in that King Cove’s lone shoreplant has historically provided a variety of fleet support services that are generally provided by outside vendors in larger communities. Nevertheless, outside of school, public works, village ANCSA corporation, and tribal employment, there are arguably few local employment opportunities that are not directly linked back to supporting the fishing sector of the economy (AECOM 2010).

Harvest Sector

General

Figure 13 shows changes in the number of locally owned commercial fishing vessels, by size class, for the period 1984 through 2018. As shown, there was a general decreasing trend in the number of resident-owned commercial fishing vessels in the community from around 1985 through 2018, the most recent year for which data are available. Detailed, if now somewhat dated, overviews of the King Cove fleet, including types of vessels and their associated annual rounds, distribution of permit holders, catch and earnings estimates, and landings inside and outside of the community, along with an analysis of the spatial distribution of the fishing effort of the local fleet are available in earlier NPFMC community profiles (AECOM 2010; EDW 2005). As updating this information is effort intensive and not central to the current BSAI non-CDQ directed Pacific cod trawl fishery-oriented community analysis, this overarching characterization has not been updated here. Rather, the more qualitatively oriented and BSAI non-CDQ directed Pacific cod trawl fishery-focused discussion has been expanded below.

Figure 13. Number of Commercial Fishing Vessels Owned by King Cove Residents, by Length Category, 1984-2018.



Source: Commercial Fisheries Entry Commission 2018

King Cove residents initiated the current Pacific cod and pollock small vessel trawl groundfish fisheries in the Western Gulf of Alaska in the early 1980s to fish more consistently throughout the year. According to Reedy (2018), the importance of the groundfish trawl fisheries has grown in the past few decades as the volatility of salmon fishing has stressed local fishing operations. Reedy (2018) also argues these fisheries now represent a significant portion of economic and social life and the majority of Western Gulf small vessel trawl fishermen are still Aleut/Unangan vessel owners, hired skippers, and crewman, many of whom are also of Scandinavian descent.

From 2008 through 2017, the annual number of active commercial fishing vessels with King Cove ownership addresses participating in all fisheries, using all gear types in all areas combined (i.e., the community commercial fishing fleet), varied from 34 (in 2009, 2010, and 2016) to 31 (2012, 2013, 2014, and 2017 [the most recent year for which data are available]), with an annual average of 32.4 active commercial fishing vessels with King Cove ownership addresses over this time span. The

annual ex-vessel gross revenues (in real 2010 dollars) for these vessels ranged from \$5.93 million (in 2010) to \$13.95 million (in 2017), with an annual average of \$8.60 million in ex-vessel gross revenues over this period (Source: ADFG/CFEC Fish Tickets, data compiled by AKFIN in Comprehensive_FT). (See Table 64 [in Attachment B] for more detail.)

BSAI non-CDQ Directed Pacific Cod Trawl Fishery Catcher Vessels

No catcher vessels with King Cove ownership addresses participated in the BSAI non-CDQ directed Pacific cod trawl fishery during the years 2008-2018. Similarly, no catcher vessels using LLP licenses with King Cove ownership addresses participated in the BSAI non-CDQ directed Pacific cod trawl fishery during the years 2008-2018.

BSAI non-CDQ Directed Pacific Cod Trawl Fishery Catcher Vessel Crew

The limited available data on the number of crew positions on BSAI non-CDQ directed Pacific cod trawl catcher vessels (i.e., the crew data for GOA trawl catcher vessels that filed an EDR report in 2016 and also participated in the BSAI non-CDQ directed Pacific cod trawl fishery that same year) do not show any crew members with King Cove addresses participating in the fishery that year. These data are, however, substantially incomplete as discussed in Section 3.5.2.

Shoreside Processing Sector

General

Based on a count of intent to operate codes, a single unique shoreside processing entity operated in King Cove 2008-2018.³⁷ While specific volume and value data, including all first wholesale gross revenue data, associated with the plant are confidential for all commercial fisheries, a general knowledge of the industry and previous community analyses would indicate that the plant is relatively diversified in its operations; city officials, on multiple occasions, have noted that local fish taxes, while varying from year-to-year are often a rough balance between crab, salmon, and groundfish.³⁸

An earlier NPRB/NPFMC-funded community profile effort, *Comprehensive Baseline Commercial Fishing Community Profiles: Unalaska, Akutan, King Cove, and Kodiak, Alaska* (EDAW 2005), included a qualitative characterization of King Cove's commercial processing sector (as quantitative information was precluded by data confidentiality concerns). This information updated in part for the BSAI crab rationalization five-year program review (AECOM 2010) and in part for the more recent Gulf of Alaska trawl bycatch management draft analysis (Northern Economics 2016), including a history of the local processors and annual operational profiles that in turn included annual activity cycles and employment patterns by major fishery, among other types of data. This information, while now dated, still represents the best available information of this type and is included by reference in this analysis.

³⁷ During the 2018, a second ITO code shows up as a King Cove shoreside processor in some datasets, however this appears to be an entity that had some custom processing done at the main plant in the community and is not further considered in this community discussion.

³⁸ Percentage dependency for major species groups ranged widely on an annual basis between FY 2000 and FY 2015, based on relative fishing success and variable market (price) conditions. During this time span, crab ranged between roughly 30 and 50 percent, salmon accounted for between roughly 15 and 40 percent, and groundfish between roughly 25 and 50 percent of total local landing taxes in any given year.

Processors that Accepted BSAI non-CDQ Directed Pacific Cod Fishery Trawl-Caught Deliveries

King Cove's direct engagement in the BSAI non-CDQ directed Pacific cod trawl fishery during 2008-2018 was limited to the single unique shoreside processor that operated in the community during that time. This processor accepted BSAI non-CDQ directed Pacific cod trawl-caught deliveries 9 out of 11 years during this period (i.e., the community averaged 0.8 processors participating in the fishery per year). This processor (*King Cove Processor A*) accrued a total of 9 shoreside processor participation years over this 11-year span.

Given that only a single shoreside processor participated in the fishery, all first wholesale gross revenue information related to the processing of BSAI non-CDQ directed Pacific cod trawl-caught deliveries to King Cove is confidential. For the purposes of this analysis, these data have been grouped with analogous data from the shoreside processors operating in Sand Point and Adak that also participated in the fishery (see Table 16). A general knowledge of the industry and previous community analyses would suggest, however, that during the 2008-2018, these revenues were likely a relatively modest component of overall processing first wholesale gross revenues for King Cove shoreside processing, although it is important to note that (1) these revenues likely varied considerably from year to year and may well have been substantial in absolute terms at least some years, (2) the timing of this processing may have been important to the operational flow of the plant and provided an important source of labor hours for processing staff, and (3) this processing may have been a strategically important component of maintaining a desired flexibility and diversity of operations at the plant and to maintaining mutually beneficial relationships with some of its delivery fleet that participated in other fisheries with the plant.

Table 31 provides information on the "community footprint" of the catcher vessels that made BSAI non-CDQ directed Pacific cod trawl-caught deliveries to the King Cove shoreside processor 2008-2018, based on catcher vessel ownership address. As shown, of the 16 unique catcher vessels that made these deliveries over this period, nine had ownership addresses in the Seattle MSA. No Seattle MSA vessels delivered BSAI non-CDQ directed Pacific cod trawl-caught deliveries to the King Cove plant in 3 of the years, but the number of catcher vessels with Seattle MSA ownership addresses ranged from 1 to 5 in each of the other years, averaging 1.4 vessels per year 2008-2018. Catcher vessels with Kodiak ownership addresses accounted for 3 unique vessels and an average of 0.5 vessels making BSAI non-CDQ directed Pacific cod trawl-caught deliveries per year.

No EDR data on processor employment or payments to labor are available for the King Cove shoreside processor.

Table 31. Community of Ownership of Catcher Vessels Making Bering Sea Non-CDQ Directed Pacific Cod Fishery Trawl-Caught Deliveries to King Cove Shoreside Processors, 2008-2018 (number of vessels)

Geography	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Annual Average 2008-2018 (number)	Annual Average 2008-2018 (percent)	Total Unique CVs 2008-2018 (number)
Kodiak	0	0	0	1	1	2	0	0	0	1	1	0.5	22.22%	3
Newport	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00%	0
Seattle MSA*	2	0	0	1	1	1	0	1	1	3	5	1.4	55.56%	9
Other**	2	2	0	1	0	0	0	0	0	0	1	0.5	22.22%	4
Grand Total	4	2	0	2	3	3	0	1	1	4	7	2.5	100.00%	16
*Seattle MSA includes all communities in King, Pierce, and Snohomish counties.														
**Location suppressed to retain confidentiality.														
Note: Due to CV ownership movement between communities over the years shown, total unique CVs per community may not sum to state or grand totals.														
Source: NMFS Alaska Region Catch Accounting System, data compiled by AKFIN in Comprehensive_BLEND_CA														

5.2.3.5 Subsistence Fishing Engagement

According to a survey conducted by ADFG in 1992 (Alaska Department of Fish and Game 2018), which is the most recent, most comprehensive, and considered to be the most representative survey available, subsistence harvesting in King Cove is an important aspect of the local economy and social life. The ADFG survey was able to solicit responses from 47.5 percent of the households present in King Cove at the time, which was calculated as 266 total people out of an estimated total population of 560. The results showed that 100.0 percent of the households used wild subsistence resources in one form or another, and 96.0 percent of all households actively harvested subsistence resources. The estimated King Cove harvest per capita was 256.1 pounds of useable weight of wild resources, 53.3 percent of which were salmon, 16.7 percent were fish other than salmon, 15.4 percent were land mammals, 7.7 percent were feral animals, and 6.8 percent were marine invertebrates. The breakdown in the use of non-salmon subsistence species in 1992, which is still considered to be the most representative year, show that 73.3 percent of households used halibut, while other used species included char (66.7 percent), Dolly Varden (54.7 percent), and Pacific cod (44.0 percent). Data on marine mammal subsistence harvesting from the 1992 report that an estimated 23 harbor seals were harvested for subsistence, and that 22.7 percent of all households used harbor seals for subsistence. More recent harvest figures suggest that harbor seal subsistence has declined, with an estimated 8 harbor seals harvested in 2008, the most recent year available.

In a more recent comprehensive survey by ADFG (ADFG 2018) still in draft form, preliminary results indicate the per capita harvest in King Cove during 2016 was 300 pounds. In terms of household harvest and use, 20.9 percent of households in King Cove were found to *harvest* Pacific cod and 36.3 percent were found to *use* Pacific cod, down from 44.0 percent using Pacific cod in 1992. Harvest methods reported for Pacific cod in 2016 included; removal from commercial catch; use of multiple subsistence harvest methods, including longline/skate, handline open water, and subsistence gear any method; rod and reel; and any method. The average numbers of species harvested and used by households in King Cove in 2016 were 9 and 13, respectively. The top eight categories of subsistence harvest and use in King Cove in 2016 (ADFG 2018) are shown in Table 32.

Table 32. Top Eight Categories of Subsistence Harvest and Use in King Cove, 2016

Rank	Subsistence Harvest	Rank	Subsistence Use
1	Vegetation	1	Vegetation
2	Salmon	2	Salmon
3	Non-salmon fish (incl. Pacific cod)	3	Marine invertebrates
4	Marine invertebrates	4	Non-salmon fish (incl. Pacific cod)
5	Birds and eggs	5	Birds and eggs
6	Large land mammals	6	Large land mammals
7	Marine mammals	7	Marine mammals
8	Small land animals	8	Small land animals

Source: ADFG 2018.

Joint production opportunities, where commercial gear or fishing vessels are used for subsistence pursuits, were mentioned by community residents during previous study efforts as being important. For example, in interviews conducted for pre-crab rationalization community characterization in 2001, one vessel captain reported running to good hunting grounds following tendering activities in the Shumagin Islands, thereby saving fuel costs, while another example was given of fishermen bird hunting when out tending pots. Where stand-alone costs are unavoidable, some fishermen have reported that costs were made more manageable by having several families involved to spread out the out-of-pocket expenditures. At least some individuals who are out near productive hunting grounds during commercial fishing have also acted as designated hunters for others in the community to

further reduce overall subsistence costs and increase productivity. During interviews in 2008, local hunters noted that caribou hunting in the area had been closed by the state due to herd population concerns, but that other hunting opportunities, such as moose that are typically found to the east around Pavlof Bay, and waterfowl, found throughout the area, remained robust, as well as subsistence fishing opportunities, a pattern confirmed during interviews in 2010. Local subsistence fishing, like local subsistence hunting, is reportedly sometimes pursued as a joint production activity in addition to being an important stand-alone activity in its own right, such as when a vessel or gear that is used for commercial fishing is also used for subsistence fishing at a separate time, or where fish are retained for subsistence/personal use out of what is otherwise a commercial harvest (AECOM 2010). Related research has shown that opportunities for joint production may have declined due to changes in fishery management for at least some commercial fisheries in recent years. For example, subsistence-use access to king crab for residents of some smaller communities has become more complex and vulnerable under BSAI crab rationalization (Reedy and Maschner 2014), where having fewer crew members involved in the fishery has resulted in reduced access to “home-pack,” which are boxes of crab brought home by crew members that would be commonly redistributed to relatives and/or otherwise used for socially important purposes.

5.2.3.6 Support Services Sector

When viewed from one perspective, King Cove has little in the way of a fisheries support service sector, and in this manner, the community, though a major processing port, differs markedly from Unalaska. For example, in King Cove, the lone shoreplant has historically provided a variety of fleet support services (as noted in the shoreside processor discussion above) that the plants in Kodiak typically no longer provide with the development of comparatively large support sector. From another perspective, however, outside of public works, tribal, and school employment, there is arguably little in the way of local employment that is not directly linked back to supporting the fishing sector of the economy.

Direct fishery support services that do exist in King Cove, as described in the BSAI crab rationalization five-year program review (AECOM 2010) include shipping, air transportation, marine transportation, and taxi services; marine and other fuel sales; gear hauling and storage (including crab pot hauling and crab pot storage) and vessel watch services; marine mechanical and specialty supply services; welding services; vessel supply services and local stores; diving and vessel charter services; bar and restaurant services; lodging services; and range of services provided by the King Cove Corporation (the local ANCSA village corporation). Additionally, two locally based tribal entities, the Agdaagux Tribe and the Belkofski Tribe, provide a range of services to the community, with the former being directly involved in a range of substantial infrastructure projects in recent years. There are also some other limited private sector business activities that are more indirectly related to fishing support in the community, and there are several public service sectors that derive a portion of their service population and demand from fisheries-related activities including recreation, clinic, and public safety services. This sector is described in detail in earlier NPFMC documents (especially AECOM 2010), including business attributes, seasonal fluctuations, and employment information for the individual enterprises in the various sectors. While this information is now dated, it still represents the most recent comprehensive fishery support sector profile available for King Cove.

5.2.3.7 Public Revenues

Table 33 provides information on City of King Cove selected fisheries-related general fund revenues for fiscal years 2000-2017. Unlike the cities of Unalaska and Akutan, King Cove does not publish city fish tax revenues separate from the city sales tax figure in its budget documents. This table presents information on the city’s sales tax, the state fisheries business tax, and the state fisheries

resource landing tax. Among the tax revenue sources in the table, revenues from city raw fish taxes and state shared fishery business taxes derive from catcher vessel landings at shoreside processors in the community, while revenues from the state shared fishery resource landing tax derive from landings made by catcher/processors and motherships.

Table 34 provides a placeholder for on City of King Cove general fund revenue and direct fishery revenue as a percentage of total general fund revenues for fiscal years 2000-2017. Data published in the 2017 Groundfish Economic SAFE³⁹ suggest that roughly 60 percent of King Cove's tax revenue in 2016 came from fisheries, but that figure appears to be calculated off individual source and total municipal tax amounts that are not directly comparable to those published in King Cove fiscal year budget materials.

Table 35 provides information on City of King Cove ports and harbors revenue for fiscal years 2000–2017. As shown, these revenues, which are separate from general fund revenues ranged between roughly \$220,000 and \$477,000 per year over this period.

There were also several other public revenue sources in King Cove that are related specifically to taxes and fees directly associated with local fisheries operations noted in another recent Council analysis (Northern Economics 2016). For example, while there are no local property taxes on seafood processing facilities, there is a local fisheries business impact tax applied to the local shoreside processor in the flat amount of \$100,000 per year (paid in increments of \$10,000 per month for the first 10 months of the year); another example is a city sewer services fee applied to the shoreside processor in the flat amount of \$24,000 (paid in \$2,000 monthly increments), with the flat amounts in both of these examples having remained constant for a number of years. Other examples where fees have changed relatively recently, or are more variable, include a water services fee that increased 33 percent in February 2015, with the shoreside processor now paying roughly \$245,000 annually for about 200 million annual gallons, and landfill charges that are based on two cost elements (the number of weekly dumpsters via a combination of three- and six-cubic yard dumpsters and an honor system of reporting and paying flatbed truck loads on a per-trip basis) that, according to city staff, results in roughly \$50,000 per year in revenue for the solid waste fund from the shoreside processor. City staff has noted that infrastructure improvements are needed for sewer, water, and solid waste systems and that increases in fees for system users, including the local shoreside processor with its relatively high-volume service demand, will be necessary to allow for the upgrades and to cover increased operating costs where relevant. The local shoreside processor produces all its own energy, although the possibility of the processor at some point integrating the purchase of surplus hydro power produced by the city into their housing and domestic facilities, if not into the processing plant itself, has been a topic of discussion for several years.

³⁹ <https://www.afsc.noaa.gov/refm/docs/2017/economic.pdf>. Accessed 1/6/2019.

Table 33. City of King Cove Selected Fisheries-Related General Fund Revenues (in dollars), Fiscal Years 2000–2018

Fiscal Year	City Sales Tax	Direct Fishery Revenue Source				Direct Fishery Revenue Source Total
		City Fish Tax	City Business Impact Tax	State Fisheries Business Tax	State Fisheries Resource Landing Tax	
FY 2000	\$1,165,613	unavailable	\$0	\$280,686	\$32,781	unavailable
FY 2001	\$806,691	unavailable	\$0	\$432,411	\$33,001	unavailable
FY 2002	\$649,373	unavailable	\$0	\$318,188	\$23,439	unavailable
FY 2003	\$926,188	unavailable	\$45,000	\$184,041	\$23,690	unavailable
FY 2004	\$1,222,258	unavailable	\$100,000	\$211,092	\$25,006	unavailable
FY 2005	\$1,358,416	unavailable	\$100,000	\$326,453	\$31,680	unavailable
FY 2006	\$1,684,933	unavailable	\$87,500	\$365,638	\$38,675	unavailable
FY 2007	\$1,484,855	unavailable	\$77,678	\$463,050	\$41,662	unavailable
FY 2008	\$1,819,053	unavailable	\$53,571	\$438,722	\$42,456	unavailable
FY 2009	\$1,697,240	unavailable	\$100,000	\$495,293	\$47,380	unavailable
FY 2010	\$1,591,136	unavailable	\$107,143	\$586,975	\$47,731	unavailable
FY 2011	\$1,833,699	unavailable	\$110,000	\$465,145	\$42,137	unavailable
FY 2012	\$1,663,106	unavailable	\$100,000	\$437,823	\$55,700	unavailable
FY 2013	\$1,562,295	unavailable	\$100,000	\$521,585	\$47,386	unavailable
FY 2014	\$1,559,087	unavailable	\$100,000	\$456,469	\$41,703	unavailable
FY 2015	\$1,530,330	unavailable	\$100,000	\$510,155	\$30,539	unavailable
FY 2016	\$2,012,209	unavailable	\$100,000	\$404,385	\$33,713	unavailable
FY 2017	\$1,747,055	unavailable	\$100,000	\$386,374	\$37,127	unavailable
FY 2018*	\$1,800,000	unavailable	\$100,000	\$499,000	\$52,055	unavailable

*FY 2018 is Current Approved Budget (all other years are actuals)

Source: King Cove fiscal year budgets for FY 2002-2019.

<https://www.commerce.alaska.gov/dcra/dcrepoext/Pages/FinancialDocumentsLibrary.aspx>. Accessed 12/29/18.

Table 34. City of King Cove General Fund Revenue and Direct Fishery Revenue as a Percentage of Total General Fund Revenues, Fiscal Years 2000–2018

Fiscal Year	Grand Total All General Fund Revenue	Direct Fishery Revenue Source Total*	Direct Fishery Revenue Source Total as a Percent of All General Fund Revenue
FY 2000	\$1,695,835	unavailable	unavailable
FY 2001	\$1,465,250	unavailable	unavailable
FY 2002	\$1,289,410	unavailable	unavailable
FY 2003	\$1,538,301	unavailable	unavailable
FY 2004	\$1,730,341	unavailable	unavailable
FY 2005	\$1,913,636	unavailable	unavailable
FY 2006	\$2,496,002	unavailable	unavailable
FY 2007	\$2,264,478	unavailable	unavailable
FY 2008	\$2,543,264	unavailable	unavailable
FY 2009	\$2,656,826	unavailable	unavailable
FY 2010	\$2,790,013	unavailable	unavailable
FY 2011	\$2,789,425	unavailable	unavailable
FY 2012	\$2,830,313	unavailable	unavailable
FY 2013	\$2,913,033	unavailable	unavailable
FY 2014	\$2,585,766	unavailable	unavailable
FY 2015	\$2,896,351	unavailable	unavailable
FY 2016	\$3,641,910	unavailable	unavailable
FY 2017	\$3,100,935	unavailable	unavailable
FY 2018*	\$3,313,555	unavailable	unavailable

*FY 2018 is Current Approved Budget (all other years are actuals)

For this table, "Direct Fishery Revenue" is defined as being composed of King Cove municipal raw seafood tax, the city business impact tax, and intergovernmental revenues accruing to King Cove from the state fisheries business tax and the state fisheries resource landing tax (see previous table). It does not include any fisheries influence on other revenue sources.

Source: King Cove fiscal year budgets for FY 2002-2019.

<https://www.commerce.alaska.gov/dcra/dcrepoext/Pages/FinancialDocumentsLibrary.aspx>. Accessed 12/29/18.

Table 35. Selected King Cove Harbor and Port Revenues, Fiscal Years 2000–2018

Year	Moorage	Pot Storage	All Other	Total
FY 2000	\$223,903	\$8,810	\$60,476	\$293,189
FY 2001	\$172,154	\$22,145	\$89,721	\$284,020
FY 2002	\$150,458	\$16,536	\$85,756	\$252,750
FY 2003	\$151,003	\$16,678	\$97,859	\$265,540
FY 2004	\$98,771	\$29,610	\$92,233	\$220,614
FY 2005	\$124,422	\$30,269	\$90,815	\$245,506
FY 2006	\$170,167	\$11,645	\$117,167	\$298,979
FY 2007	\$138,282	\$10,883	\$108,407	\$257,572
FY 2008	\$194,568	\$19,927	\$167,061	\$381,556
FY 2009	\$180,805	\$23,735	\$147,361	\$351,901
FY 2010	\$193,547	\$23,888	\$203,599	\$421,034
FY 2011	\$193,316	\$33,039	\$235,069	\$461,424
FY 2012	\$178,022	\$28,416	\$271,040	\$477,478
FY 2013	\$170,880	\$3,688	\$258,252	\$432,820
FY 2014	\$149,975	\$7,993	\$220,566	\$378,534
FY 2015	\$125,119	\$20,436	\$207,162	\$352,717
FY 2016	\$155,955	\$17,709	\$190,990	\$364,654
FY 2017	\$150,256	\$16,770	\$240,825	\$407,851
FY 2018*	\$175,449	\$17,000	\$249,518	\$441,967

*FY 2018 is Current Approved Budget (all other years are actuals)

Source: Revenue and expenditure spreadsheets provided by King Cove Finance Department, June 2008 and August 2010; Alaska Department of Commerce, Community, and Economic Development 2015. King Cove fiscal year budgets for FY 2014-2019.

<https://www.commerce.alaska.gov/dcra/dcrepoext/Pages/FinancialDocumentsLibrary.aspx>. Accessed 12/29/18.

5.2.4 Kodiak and Sand Point

5.2.4.1 Kodiak

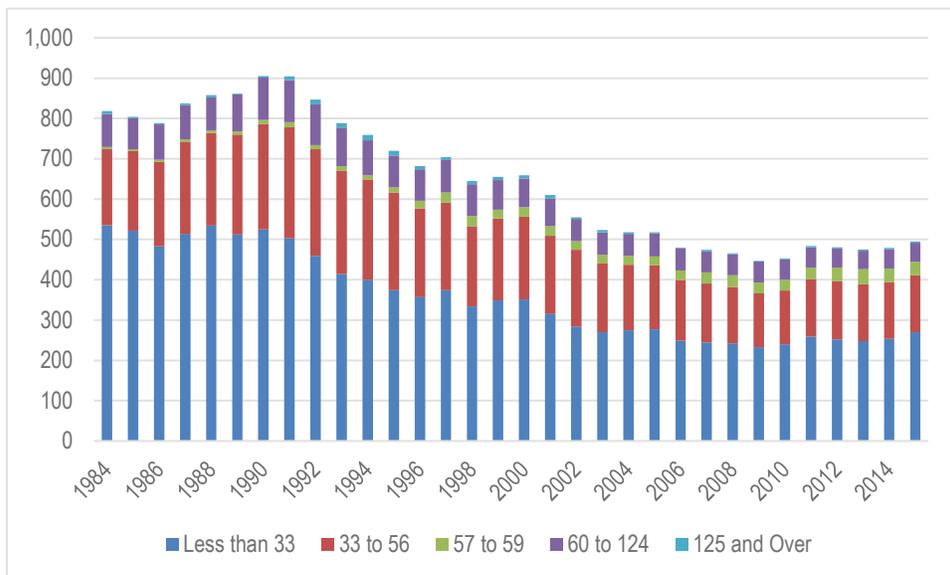
Kodiak’s engagement in and dependency on the BSAI non-CDQ directed Pacific cod trawl fishery is focused on the catcher vessel sector, with a secondary focus on vessel support service activity. An updated comprehensive fishing community profile was recently prepared for Kodiak as a part of the GOA trawl bycatch management SIA (Northern Economics 2016). Given ready availability of that document and the relatively narrow focus of Kodiak’s engagement in the BSAI non-CDQ directed Pacific cod trawl fishery, the information contained that community profile is not recapitulated here. Rather, this information presented in this section relates to Kodiak’s harvest sector.

Harvest Sector

General

Figure 14 shows changes in the number commercial fishing vessels with Kodiak ownership addresses, by size class, for the period 1984 through 2014. As shown, there was a general decreasing trend in the number of resident-owned commercial fishing vessels in the community from around 1990 through 2009, with overall fleet numbers plateauing in more recent years, well below the peak seen roughly 25 years ago. A detailed, if now somewhat dated, overview of the Kodiak fleet, including types of vessels and their associated annual rounds, distribution of permit holders, catch and earnings estimates, and landings inside and outside of the community, along with an analysis of the spatial distribution of the fishing effort of the local fleet is available in an earlier NPFMC community profile (EDAW 2005). As updating this information is effort intensive and not central to the current BSAI non-CDQ directed Pacific cod trawl fishery management-oriented community analysis, this overarching characterization has not been updated here.

Figure 14. Number of Commercial Fishing Vessels Owned by Kodiak Residents, by Length Category, 1984-2015.



Source: Commercial Fisheries Entry Commission 2016

From 2003 through 2014, the annual number of Kodiak resident-owned commercial fishing vessels participating in all fisheries, using all gear types in all areas combined (i.e., the community commercial fishing fleet), varied from 251 (in 2008) to 289 (in 2011), with an annual average of 265.0 resident-owned commercial fishing vessels over this time span. The annual ex-vessel gross revenues for these vessels ranged from \$115,549,836 (in 2014) to \$167,011,428 (in 2011), with an annual average of \$137,910,563 ex-vessel gross revenues over this period. In 2014, the most recent year for which data are available, Kodiak had 256 resident-owned vessels.

BSAI non-CDQ Directed Pacific Cod Trawl Fishery Catcher Vessels

A total of 9 unique Kodiak resident-owned BSAI trawl catcher vessels participated in the fishery over the years 2008-2018, averaging approximately 3.6 vessels participating per year, ranging between no vessels (2009) and 7 vessels (2012) participating in the fishery in any given year (see Table 2).

BSAI non-CDQ directed Pacific cod trawl-caught ex-vessel gross revenues for catcher vessels with Kodiak ownership addresses averaged approximately \$0.62 million annually over the period 2008-2017, ranging, for the years for which data can be disclosed, from approximately \$0.15 million (2015) to approximately \$1.52 million (2012) in any given year. The annual average of \$0.62 is approximately 3 percent of the all catcher vessel ex-vessel value of all catcher vessels involved in the fishery over this same time period (see Table 3).

In terms of reliance or dependency, for Kodiak resident-owned BSAI non-CDQ directed Pacific cod trawl fishery catcher vessels, on an annual average basis for the years 2008-2018, ex-vessel gross revenues from BSAI non-CDQ directed Pacific cod fishery trawl-caught deliveries accounted for approximately 7 percent of all ex-vessel gross revenues (all species, area, and gear fisheries combined) generated by those vessels on an annual average basis. For the total Kodiak ownership address community fleet (all commercial fishing vessels participating in all area, gear, and species fisheries), on an annual average basis for the years 2008-2017, ex-vessel gross revenues from BSAI non-CDQ directed Pacific cod trawl-caught deliveries accounted for approximately 0.5 percent of all ex-vessel gross revenues generated by those vessels for the period.

Table 36 provides information on the “delivery footprint” of the BSAI non-CDQ directed Pacific cod trawl catcher vessel fleet. As shown, there were deliveries made by Kodiak vessels to five different communities (or categories of communities) over the 2008-2018 period, averaging less than one vessel per year making BSAI non-CDQ directed Pacific cod fishery trawl-caught deliveries to King Cove and Sand Point, and more than one but less than two vessels per year making deliveries to Unalaska/Dutch Harbor and Akutan. The most vessels, on average (2.4 per year), made deliveries to Seattle/IFPs with Seattle ownership addresses. In terms of unique vessels, however, of the 9 unique Kodiak ownership address catcher vessels that made BSAI non-CDQ directed Pacific cod fishery trawl-caught deliveries to any shoreside processors, 8 (89 percent) made deliveries to shoreside processors operating in Unalaska/Dutch Harbor during the 2008-2018 period. Akutan and Seattle/IFP shoreside processors each took BSAI non-CDQ directed Pacific cod fishery trawl-caught deliveries from 5 (56 percent) of the unique Kodiak ownership address catcher vessels that made BSAI non-CDQ directed Pacific cod fishery trawl-caught deliveries to any shoreside processor. Shoreside processors in King Cove, Sand Point, and Adak took deliveries from 3, 2, and 1 unique Kodiak ownership address catcher vessels, respectively.

Table 36. Number of Catcher Vessels with Kodiak Ownership Addresses Making BSAI Non-CDQ Directed Pacific Cod Fishery Trawl-Caught Deliveries to Shoreside Processors, by Operating Location of Processor, 2008-2018

Geography	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Average 2008-2018 (number)	Average 2008-2018 (percent)	Total Unique CVs 2008-2018
Adak	*	*	*	0	0	0	0	0	0	0	0	0.0	0.00%	1
Akutan	*	*	*	1	4	2	1	1	1	1	2	1.6	26.00%	5
King Cove	*	*	*	1	1	2	0	0	0	1	1	0.8	12.00%	3
Sand Point	*	*	*	1	0	0	0	1	0	0	0	0.3	4.00%	2
Unalaska/Dutch Harbor	*	*	*	3	1	2	1	1	0	2	4	1.8	28.00%	8
Alaska Total	*	*	*	5	6	5	2	2	1	4	6	3.9	62.00%	9
Seattle (IFPs)**	*	*	*	3	2	3	1	1	2	3	4	2.4	38.00%	5
Grand Total	1	0	2	8	8	8	3	3	3	7	10	6.3	100.00%	9
*Confidential														
**Seattle is shown as the operating community for Inshore Floating Processors when the actual area of operation is not specified in the available dataset.														
Source: NMFS Alaska Region Catch Accounting System, data compiled by AKFIN in Comprehensive_BLEND_CA														

BSAI non-CDQ Directed Pacific Cod Trawl Fishery Catcher Vessel Crew

The limited data are available on the number of crew positions on BSAI non-CDQ directed Pacific cod trawl catcher vessels (i.e., the data only include crew positions on GOA trawl catcher vessels that filed an EDR report in 2016 and also participated in the BSAI non-CDQ directed Pacific cod trawl fishery that same year). These data, which are known substantially incomplete compared to total catcher vessel crew positions in the fishery, as discussed in Section 3.5.2, indicate that:

- There was a total of 66 crew positions were held by Kodiak residents on catcher vessels included in the data. Of those 66 positions 28 (42.4 percent) were aboard catcher vessels with Kodiak ownership addresses, 11 (16.7 percent) were aboard vessels with Oregon ownership addresses, and 27 (40.9 percent) were aboard vessels with Washington addresses.
- There was a total of 50 positions aboard catcher vessels with Kodiak ownership addresses covered by the data. Of these 50 positions, 28 (56 percent) were held by Kodiak residents, 3 (6 percent) were held by other Alaska residents, 7 (14 percent) were held by Oregon residents, 1 (2 percent) was held by a Washington resident, and 11 (22 percent) were held by persons from other states and/or unspecified locations.
- No crew earnings data are available.

For more detail on community of catcher vessel ownership for those vessel with crew positions held by individuals with Kodiak residence addresses and the community of residence address for individuals who held crew positions aboard catcher vessels with Kodiak ownership addresses, please see Table 52. More detail regarding catcher vessel crew positions is also available in Section 9.4 (Attachment D, Table 67).

BSAI non-CDQ Directed Pacific Cod Trawl Fishery Catcher Vessels Homeported

In the most recent year for which data are available (2018), Kodiak is listed as the homeport of 15 catcher vessels active in the BSAI non-CDQ directed Pacific cod trawl fishery that year, 5 with Kodiak ownership addresses, 7 with Seattle WA ownership addresses, and one each with Newport OR, Lakewood WA, and South Bend WA ownership addresses (Table 48). No Alaska community other than Kodiak was listed as homeport for more vessels in this class active in this fishery in 2018.

Support Service Sector

While no systematically collected, time series information on the nature and location of vessel expenditures on support services exists, it assumed that Kodiak derives support service business from the vessels engaged in the BSAI non-CDQ directed Pacific cod trawl fishery. This assumption is based on the Kodiak homeport designations of multiple catcher vessels (Table 48), vessels with catcher/processor endorsed LLP license that function in as catcher vessels in the fishery (Table 50), and catcher/processers acting as motherships by taking BSAI non-CDQ directed Pacific cod fishery trawl-caught deliveries from catcher vessels (Table 51) that have ownership addresses in a wide range of communities. As described in earlier NPFMC SIAs (e.g., Northern Economics 2016), Kodiak has a robust fishery support service sector, particularly with respect to catcher vessel support services, and especially relative to other Gulf of Alaska communities.

5.2.4.2 Sand Point

Sand Point's direct engagement in and dependency on the BSAI non-CDQ directed Pacific cod trawl fishery was focused exclusively on the shoreside processing sector during 2008-2018, with the following exceptions.

- Sand Point was the address of ownership for one catcher vessel that made BSAI non-CDQ targeted Pacific cod trawl-caught deliveries in 2008 and 2009 only (Table 2).
- In the most recent year for which data are available (2018), Sand Point was also listed as the homeport of one catcher vessel with a Seattle ownership address that was active that year in the BSAI non-CDQ directed Pacific cod trawl fishery (Table 49).
- In the most recent year for which at least some (but known to incomplete) data are available (2016), one crew member with a Sand Point address worked aboard a catcher vessel with a Edmonds, WA ownership address that was active that year in the BSAI non-CDQ directed Pacific cod trawl fishery (Table 52)

An updated comprehensive fishing community profile was recently prepared for Sand Point as a part of the GOA trawl bycatch management SIA (Northern Economics 2016). Given ready availability of that document and the relatively narrow focus of Sand Point's engagement in the BSAI non-CDQ directed Pacific cod trawl fishery, the information contained that community profile is not recapitulated here. Rather, this information presented in this section relates to Sand Point's shoreside processing sector. Sand Point is the only Alaska community outside of Unalaska, Akutan, and King Cove has been the location of fishery engagement through shoreside processing of Bering Sea non-CDQ directed Pacific cod fishery catcher vessel trawl-caught deliveries

Processing Sector

General

From 2003 through 2014, according to the dataset, the annual number of Sand Point shoreside processors varied from 1 (in 2003) to 2 (in 2004-2014), based on a count of intent to operate codes, with an annual average of 1.9 shoreside processors operating over this time span (although there is only a single physical plant operating in the community).⁴⁰ All first wholesale gross revenues associated with shoreside processing in Sand Point over this period are confidential.

An earlier NPRB/NPFMC-funded community profile effort, *Comprehensive Baseline Commercial Fishing Community Profiles: Sand Point, Adak, St. Paul, and St. George, Alaska* (EDAW 2008a), included a qualitative characterization of Sand Point's commercial processing sector (as quantitative information was precluded by data confidentiality concerns). This information updated in part for the BSAI crab rationalization five-year program review (AECOM 2010) and in part for the more recent Gulf of Alaska trawl bycatch management draft analysis (Northern Economics 2016) including a history of the local processors and annual operational profiles that in turn included annual activity cycles and employment patterns by major fishery, among other types of data. This information, while now dated, still represents the best available information of this type and is included by reference in this analysis.

⁴⁰ A third processing entity operates a local buying station in the community, which also offers some vessel support services, but does not conduct processing operations in Sand Point.

BSAI non-CDQ Directed Pacific Cod Trawl-Fishery Deliveries Processing

Sand Point's direct engagement in the BSAI non-CDQ directed Pacific cod fishery processing sector during 2008-2018 was limited to the single unique shoreside processor that operated in the community during that time. This processor accepted BSAI non-CDQ directed Pacific cod fishery trawl-caught deliveries six out of the 11 years 2008-2018⁴¹ (2008-2009, 2011, 2013, 2015, and 2018) (i.e., the community averaged 0.5 processors participating in the fishery per year). This processor (*Sand Point Processor A*) accrued a total of 6 shoreside processor participation years over this 11-year span.

Given that only a single shoreside processor participated in the fishery, all first wholesale gross revenue information related to the processing of BSAI non-CDQ directed Pacific cod fishery trawl-caught deliveries to Sand Point is confidential. For the purposes of this analysis, these revenues have been combined with those of the shoreside plants in King Cove and Adak (see Table 16).

A general knowledge of the industry and previous community analyses would suggest, however, that during the period 2008-2018, these revenues were likely a comparatively modest proportion of overall processing first wholesale gross revenues for Sand Point shoreside processing, although these revenues likely varied considerably from year to year. It is generally understood that the Sand Point plant is less Bering Sea focused than that Akutan shoreside plant, or even the King Cove shoreside plant. However, the processing of BSAI trawl-caught deliveries may be (1) a key component of the annual processing round of the Sand Point plant under particular circumstances, (2) it can be important to the operational flow of the plant and provides an important source of labor hours for processing staff, and (3) it may be a strategically important component of the processors' efforts to maintain a desired flexibility and diversity of operations and to maintain mutually beneficial relationships with some of its delivery fleet that also participates in other fisheries with the plant.

Table 37 provides information on the "community footprint" of the catcher vessels that made BSAI non-CDQ directed Pacific cod fishery trawl-caught deliveries to Sand Point shoreside processors 2008-2018, based on catcher vessel ownership address. As shown, deliveries were accepted from a total of six unique vessels over this period, with an annual average of deliveries by 1.1 vessels per year. Over half of the annual average is accounted for by catcher vessels with Seattle MSA ownership addresses, with 4 of the 5 unique Seattle MSA vessels delivering to the plant in 2018 (after one such vessel delivered in 2011 and two delivered in 2013). No Oregon ownership address catcher vessels made BSAI non-CDQ directed Pacific cod fishery trawl-caught deliveries to the shoreside processor during this time period and only two unique vessels with Kodiak ownership addresses did so (one in 2011 and a different vessel in 2015).

⁴¹ 2008-2009, 2011, 2013, 2015, and 2018.

Table 37. Community of Ownership of Catcher Vessels Making Bering Sea Non-CDQ Directed Pacific Cod Fishery Trawl-Caught Deliveries to Sand Point Shoreside Processors, 2008-2018 (number of vessels)

Geography	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Annual Average 2008-2018 (number)	Annual Average 2008-2018 (percent)	Total Unique CVs 2008-2018 (number)
Kodiak	0	0	0	1	0	0	0	1	0	0	0	0.2	16.67%	2
Newport	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00%	0
Seattle MSA*	0	0	0	1	0	2	0	0	0	0	4	0.6	58.33%	5
Other**	1	1	0	1	0	0	0	0	0	0	0	0.3	25.00%	1
Grand Total	1	1	0	3	0	2	0	1	0	0	4	1.1	100.00%	6
*Seattle MSA includes all communities in King, Pierce, and Snohomish counties.														
**Location suppressed to retain confidentiality.														
Note: Due to CV ownership movement between communities over the years shown, total unique CVs per community may not sum to state or grand totals.														
Source: NMFS Alaska Region Catch Accounting System, data compiled by AKFIN in Comprehensive_BLEND_CA														

5.2.5 Adak and Atka

5.2.5.1 Adak

The community of Adak and its engagement in and dependence on BSAI fisheries is described in the recent RIR for the Aleutian Islands Pacific Cod Harvest Set-Aside Adjustment (NPFMC December 2018). Adak is the only community that to date has directly benefitted from Aleutian Islands non-CDQ directed Pacific cod fishery shoreside processing-oriented community protection measures under Amendments 92 and 113, as it is the only community in the qualifying area (west of 170 longitude) that has existing the appropriate processing capacity and a history of taking deliveries in this fishery.

As noted in Section 4.4, Adak, during the years 2008-2018 when the local processing facility was operating, was been substantially engaged in and dependent on the Aleutian Islands non-CDQ directed Pacific cod trawl fishery through the processing of trawl-caught deliveries (2008-2010, 2012-2014, and 2018). However, as noted in that same discussion, the Adak shoreside processor has not taken Bering Sea non-CDQ directed Pacific cod fishery trawl-caught deliveries since a delivery or deliveries were made by a single vessel in 2008. As a result, Adak is not currently substantially engaged in or substantially dependent upon the Bering Sea non-CDQ directed Pacific cod trawl fishery.

The community protection measures incorporated into the recent Aleutian Islands Pacific Cod Harvest Set-Aside Adjustment, in combination with other measures taken under Amendments 92 and 113, provide an important foundation for western Aleutians regional development, especially when taken together with community protection measures that the Council has put in place in other fisheries (e.g., the Aleutian Islands pollock and the Western Aleutian Islands golden king crab fisheries) for the benefit of Adak. These include the issuance of eight severable Aleutian Islands trawl license endorsements that may be used on vessels less than 60 feet length overall (LOA) and four Aleutian Island trawl endorsements that may be used on vessels 60 feet or greater LOA awarded under Amendment 92. Those LLP license endorsements serve to continue to foster shoreside deliveries of Pacific cod in an area that has seen limited opportunities for deliveries to shoreside processors operating in local communities⁴² in recent years, as intended under that Amendment, and preserve opportunities for small trawl vessel (less than 60 LOA) operators as also intended under that Amendment.

Adak, however, is still potentially vulnerable to adverse impacts under Alternative 3, as described in Section 6.3.2. Because of the availability of other current information on Adak and the specific manner in which the community could be adversely affected by the proposed action alternatives, Adak is not considered further in this SIA, except under the discussion of impacts of Alternative 3 in Section 6.3.2.

⁴² Adak and Atka are the only two communities in the region that have been the location of operating shore-based processing plants in recent years. The only shore-based processing entities in the region that have accepted BSAI non-CDQ directed Pacific cod fishery catcher vessel trawl-caught deliveries to date have been located in Adak. Based on CFEC data, the community of ownership of the eight small trawl catcher vessels associated with the LLP licenses protected by the exemption include 6 catcher vessels ownership addresses in 5 Washington communities (Renton [2], Friday Harbor, Gig Harbor, Issaquah, and Woodway) and 1 each with a Tennessee and a Hawaii ownership address. These vessels have homeport listed as Kodiak (2), Sand Point (2), and Petersburg (1) AK and, Seattle (2), and Bellingham (1) WA; the four larger vessels have ownership addresses in Seattle and Bellingham WA and Newport and Siletz OR and homeport designations of Kodiak (2), Newport OR, and Bellingham WA.

5.2.5.2 Atka

Atka is the only community in the western Aleutian Islands region (i.e., west of 170 longitude) other than Adak that has the potential to directly benefit from Aleutian Islands non-CDQ directed Pacific cod fishery community protection measures under Amendments 92 and 113. As discussed in the recent analysis of the Aleutian Islands Pacific Cod Harvest Set-Aside Adjustment action (December 2018), Atka has no existing engagement in or dependency on the BSAI non-CDQ directed Pacific cod trawl fishery. The alternative management actions being analyzed in this document would not alter the continuing ability to process incidental catch of Pacific cod in Atka nor otherwise diminish the ability of Atka to develop increased future engagement in the Aleutian Islands non-CDQ directed Pacific cod trawl fishery or benefit from the community protection measures in Amendments 92 and 113 that currently benefit Adak.

5.2.6 False Pass

Shoreside processors in False Pass do not appear in the data as having accepted BSAI non-CDQ directed Pacific cod trawl-caught deliveries in any year 2008-2018. However, two important changes to the local shoreside processing sector have taken place in recent years. First, controlling interest in the local shoreside processor previously controlled by the local CDQ group has been sold to a large processing firm that has undertaken expansion of that facility. Second, another relatively large processing firm is in the process of constructing a second plant in the community. While neither facility has a history of processing BSAI non-CDQ directed Pacific cod trawl-caught landings, and the community does not otherwise have a history of engagement in or dependency on this fishery, plans for future operations for these processors may be constrained if the existing trend of Pacific cod trawl catcher vessel sector allocation shifting offshore continues.

5.2.7 CDQ Communities

As described in the RIR to which this SIA is appended, none of the management alternatives or alternative options would directly affect the BSAI CDQ Pacific cod fishery.

- One of the CDQ groups has partial ownership of two of the catcher vessels that made BSAI non-CDQ directed Pacific cod trawl-caught deliveries exclusively to catcher/processors acting as motherships over the period 2008-2018 (shown in Table 54), but both of these vessels made at least some deliveries to catcher/processors qualifying under all three suboptions of Alternative 2, Option 1, so direct impacts to these vessels are unlikely.
- None of the catcher vessels that made BSAI non-CDQ directed Pacific cod trawl-caught deliveries both to catcher/processors acting as motherships and to other types of processors (shoreside, inshore floating processors, and/or true motherships) over the period 2008-2018 (shown in Table 55) are owned in whole or in part by CDQ entities.
- One of the catcher/processors that accepted BSAI non-CDQ directed Pacific cod trawl-caught deliveries from catcher vessels over the period 2008-2018 is partially owned by a CDQ group, but this catcher processor would qualify under Alternative 2, Option 2, so direct impacts to this vessel are unlikely.
- One CDQ group is known to have had a partial ownership interest in a shoreside processor that operated in Unalaska/Dutch Harbor for several years during the period 2008-2018 and processed Bering Sea non-CDQ directed Pacific cod trawl-caught deliveries for at least a few of those years, none were accepted after 2014 and that plant is no longer operational.

While it is possible that industry partners of CDQ groups could be directly or indirectly affected by the proposed action, no direct affects to CDQ communities are anticipated. Therefore, CDQ communities are not considered further in this analysis.

5.2.8 Other Alaska Communities

As shown in Table 38, a total of 12 Alaska communities not described in previous sections had at least some minimal direct engagement in the BSAI non-CDQ Pacific cod directed trawl fishery over the years 2008-2018. This table summarizes the engagement of these communities as shown in tables appearing in Section 4 (Quantitative Indicators of Community Fishery Engagement and Dependency), Section 5.4 (Cross-Cutting Community Engagement Ties), Section 9.4 (Attachment D [catcher vessel crew residence information]), and Section 9.5 (Attachment E [catcher/processor crew residence information]).

Table 38. Summary of BSAI Non-CDQ Directed Pacific Cod Trawl Fishery Engagement, Select Alaska Communities with Minimal Direct Engagement, 2008-2018

Community	Historic Ownership Address CVs Active 2008-2018 (number and years active)	Historic Ownership Address CV LLP License (license used in this fishery 2008-2018, number and years)	CVs Active in this Fishery and Homeported in Community in 2018 (number and community of CV ownership address)	BSAI Pacific Cod Trawl CV Crew in 2016*			Crew Member(s) on BSAI Pacific Cod CPs used as MSs in 2016*
				ADFG Crew License Holders (number)	GFEC Gear Operator Permit Holders (number)	Total	
Anchor Point	--	--	--	1	0	1	--
Anchorage	--	--	4 (Seattle)	3	1	4	Yes
Cordova	--	--	--	--	--	--	Yes
False Pass	--	1 (2008)	--	--	--	--	--
Kenai	--	--	--	1	0	1	--
Homer	--	1 (2011-2013) 1 (2016-2018)	--	--	--	--	--
Juneau	--	--	1 (Kodiak) 1 (Seattle)	--	--	--	--
Palmer	--	--	--	2	0	2	--
Petersburg	--	--	--	0	1	1	--
Seward	--	--	--	1	0	1	--
Soldotna	--	--	--	1	0	1	--
Wasilla	--	--	--	2	0	2	Yes

*Data are known to be incomplete.

5.3 Pacific Northwest Communities

5.3.1 Seattle MSA and Other Washington Communities

The Seattle MSA was chosen as a unit of analysis for the purposes of this social impact assessment rather than the City of Seattle itself, consistent with the approach used in other recent NPFMC analyses (e.g., the GOA trawl bycatch management analysis [Northern Economics 2016]). This is due in part to the integration of fisheries related activities into that larger metropolitan area and in part to a desire to avoid understating the importance of that larger community to the fishery, although it is recognized that there are areas of the Seattle MSA, such as Ballard, that more traditionally associated with commercial fishing in general and a history of participating in Alaska fisheries than others.

Additionally, although multiple other Washington communities were engaged in the BSAI non-CDQ directed Pacific cod trawl fishery in the years covered by the baseline data (2008-2018) and continue to be so at present, the focus of this section is largely on the Seattle MSA itself, as the direct engagement of Washington communities outside of the Seattle MSA in the BSAI non-CDQ directed Pacific cod trawl fishery is typically limited to catcher vessel ownership and to a relatively few vessels in any one community. Specifically, among the multiple Washington communities with BSAI non-CDQ directed Pacific cod trawl catcher vessel ownership addresses outside of the Seattle MSA 2008-2018, only one community, Bellingham, had an annual average of more than 0.5 catcher vessels with local ownership addresses participating in the fishery over this period (see Table 2).⁴³ On the other hand, also as noted below, the Seattle MSA was substantially engaged in virtually all sectors of the fishery in all the years covered by the data.

5.3.1.1 Location and History

The Seattle MSA is located along the eastern edge of Puget Sound, an inlet of the Pacific Ocean and part of the Salish Sea, in northwest Washington. It includes King, Pierce, and Snohomish counties, the three most populous counties within the Puget Sound region and is typically used to characterize the greater Seattle metropolitan area.⁴⁴ Major cities within the Seattle MSA include Seattle, Tacoma, Bellevue, and Everett, with the city of Seattle itself located in King County between Elliot Bay and Lake Washington.

Traditionally, the Puget Sound area was the home of the Duwamish and Suquamish Native American groups. The Hudson's Bay Company established a post in the area in 1833, with development occurring on what is now the site of Seattle in the early 1850s. In the late 1800s, Seattle became a jumping off point those travelling north to participate in gold rushes in Canada and Alaska; in that same era fishermen and fishing companies from the west coast began participating in the Pacific cod fisheries of the Bering Sea and Gulf of Alaska, along with the salmon fisheries in Bristol Bay. Early on, Seattle played a pivotal role in this process, establishing a pattern of substantial engagement of the

⁴³ Two unique catcher vessels with Bellingham ownership addresses participated in the BSAI non-CDQ directed Pacific cod trawl fishery during the 2008-2018 period. One catcher vessel with a Bellingham ownership address participated in the fishery each year 2008-2018 and two did so in 2011. Four other Washington communities outside of the Seattle MSA (Anacortes, Chinook, Camas, and South Bend) each had one unique catcher vessel with a local ownership address participate in the BSAI non-CDQ directed Pacific cod trawl fishery 2018. The Anacortes vessel participated 1 year (2008), the Chinook vessel 4 years (2008-2011), the Camas vessel 4 years (2011 and 2013-2015), and the South Bend vessel 3 years (2013 and 2016-2017).

⁴⁴ Based on commuting patterns, adjacent areas of Olympia, Bremerton, and Mount Vernon, along with a few smaller satellite urban areas, are often grouped into the larger Seattle-Tacoma-Olympia Combined Statistical Area, commonly referred to as the Puget Sound Region, for the purposes of labor market and other economic analyses.

community across a range of North Pacific fisheries, a pattern that has continued to the present (National Oceanic and Atmospheric Administration 2007).

5.3.1.2 Community Demographics and Economy

According to federal census data, the Seattle MSA had a population of 3,439,809 in 2010. Census figures from that year show that 71.9 percent of the residents of the Seattle MSA identified themselves as White, 1.1 percent as American Indian or Alaska Native, 5.6 percent as Black/African American, 11.4 percent as Asian, 0.8 percent as Hawaiian Native and Other Pacific Islander, and 9.2 percent as “some other race” or “two or more races,” while 9.0 percent of the residents of any race in the Seattle MSA identified themselves as being of Hispanic or Latino origin. Based on race and ethnicity combined, 32.0 percent of the Seattle MSA’s total population was composed of minority residents (that is, all residents other than those identified as both White [race] and of non-Hispanic or Latino origin [ethnicity]) in 2010. Housing data from the U.S. Census indicate that 98.1 percent of all Seattle MSA residents lived in non-group quarters housing.

According to the most recent U.S. Census American Community Survey (2013-2017), approximately 63.7 percent of the population 16 years and over in the Seattle MSA was employed and 3.7 percent of the civilian labor force over the age of 16 was unemployed (U.S. Census Bureau 2018). More recent statistics from November 2018 for the Seattle MSA suggested that the unemployment rate had increased slightly to 3.9 percent, which was lower than the Washington statewide rate at the time (4.3 percent) (U.S. Bureau of Labor Statistics 2019a; U.S. Bureau of Labor Statistics 2019b). Per capita income for the Seattle MSA was estimated at \$40,699, median household income was \$77,269, while median family income was \$94,366. An estimated 10.4 percent of residents were considered low-income, defined as those individuals living below the poverty level threshold (U.S. Census Bureau 2018).

As of 2016, major industries in the Seattle MSA included educational services, health care, and social assistance (20.6 percent); professional, scientific, management, and administrative services (15.1 percent); retail trade (12.0 percent); and manufacturing (11.0 percent). Natural resource jobs including agriculture, forestry, fishing, hunting, and mining represented 0.6 percent of local employment (U.S. Census Bureau 2016). Major employers in King County included the Boeing Company, Microsoft, University of Washington, Amazon.com, county government, Starbucks, Swedish Health Services, city government, Costco, Nordstrom, and Group Health Cooperative (Economic Development Council 2016).

5.3.1.3 Commercial Fisheries Engagement

Overview

The Seattle MSA, by many measures, is the community most heavily engaged in, if not dependent on, multiple federal fisheries off Alaska managed by the North Pacific Fishery Management Council. It is also a community heavily engaged in federal fisheries off the West Coast managed by the Pacific Fishery Management Council. Among the five Washington communities outside of the Seattle MSA that were also engaged in the BSAI non-CDQ directed Pacific cod trawl fishery 2008-2018,⁴⁵ four of those communities (Aberdeen, Anacortes, Bellingham, Chinook, and South Bend) are described in an

⁴⁵ This includes Washington communities at least minimally directly engaged in the BSAI non-CDQ directed Pacific cod trawl fishery through being the community of ownership address of relevant catcher vessels, catcher/processors, or LLP licenses; and/or the homeport of relevant catcher vessels and/or catcher/processors during the period 2008-2018 or the most recent data year, depending on the variable. It does not include the communities of residence of crew members aboard relevant catcher vessels or catcher/processors.

earlier National Oceanic and Atmospheric Administration (NOAA) document (National Oceanic and Atmospheric Administration 2007) as fishing communities engaged in both the West Coast and North Pacific fisheries, while the sixth (Camas) is not (see Figure 2 for the location of these communities).

Catcher Vessel Sector

General

From 2003 through 2014, the annual number of commercial fishing vessels with Seattle MSA ownership addresses participating in all fisheries, using all gear types in all areas combined (i.e., the community commercial fishing fleet), varied from 506 (in 2013) to 620 (in 2003), with an annual average of 538.3 Seattle MSA ownership address commercial fishing vessels over this time span. The annual ex-vessel gross revenues for these vessels ranged from \$404,550,660 (in 2014) to \$586,028,383 (in 2008), with an annual average of \$504,201,590 ex-vessel gross revenues over this period. In 2014, the most recent year for which data are available, there were 512 commercial fishing vessels with Seattle MSA ownership addresses (Northern Economics 2016).

BSAI Non-CDQ Directed Pacific Cod Fishery Trawl Catcher Vessels

Table 2 shows information on Washington community participation in the BSAI non-CDQ directed Pacific cod trawl fishery, as indicated by the number of catcher vessels with local ownership addresses engaged in the BSAI non-CDQ directed Pacific cod trawl fishery by year, 2008-2018. Readily apparent is the concentration of BSAI non-CDQ directed Pacific cod trawl fishery catcher vessel ownership addresses in the Seattle MSA, with the Seattle MSA accounting for 54 of the 59 (91.5 percent) of the unique catcher vessels with Washington ownership addresses that participated in the fishery 2008-2018 and 54 out of 76 (71.1 percent) of all of the unique vessels that participated in the fishery 2008-2018. An annual average of 35.5 catcher vessels with Seattle MSA ownership addresses participated in the fishery during the 2008-2018 period.

BSAI non-CDQ directed Pacific cod trawl fishery catcher vessels with Seattle MSA ownership addresses accounted for approximately 66 percent of average annual catcher vessel ex-vessel gross revenues in the fishery 2008-2017 and ranged between approximately \$9.6 million (2010) and \$27.7 million (2008) per year over this period. Ex-vessel gross revenues for vessels with other Washington community ownership addresses accounted for approximately 7.2 percent of average annual catcher vessel ex-vessel gross revenues in the fishery over this same period (see Table 3).

In terms of reliance or dependency, for BSAI non-CDQ directed Pacific cod trawl fishery catcher vessels with Seattle MSA ownership addresses, ex-vessel gross revenues from BSAI non-CDQ directed Pacific cod trawl fishery accounted for approximately 17.6 percent of all ex-vessel gross revenues generated by those vessels for the period 2008-2017 (Table 4). For the Seattle MSA ownership address community catcher vessel fleet (including catcher vessels engaged in all area, gear, and species fisheries combined), on an annual average basis for the years 2008-2017, ex-vessel gross revenues from BSAI non-CDQ directed Pacific cod trawl fishery deliveries accounted for approximately 3.8 percent of all ex-vessel gross revenues generated by those vessels for the period 2008-2017 (Table 5).

Table 39 provides information on the “delivery footprint” of the Seattle MSA ownership address BSAI non-CDQ directed Pacific cod trawl fishery catcher vessel fleet. As shown, multiple Seattle MSA ownership address vessels made BSAI non-CDQ directed Pacific cod fishery trawl-caught deliveries every year 2008-2018 to shoreside processors in Akutan, Unalaska/Dutch Harbor, and Seattle during the 2008-2018 period (with “Seattle” deliveries actually being to inshore floating processors operating in Alaska waters), as well as deliveries in multiple years to shoreside processors

in Adak, King Cove, and Sand Point. A total of 48 unique catcher vessels with Seattle MSA ownership addresses made BSAI non-CDQ directed Pacific cod fishery trawl-caught deliveries to these communities 2008-2018, with more than 30 unique vessels delivering to Unalaska/Dutch Harbor and Seattle/IFPs, more than 20 delivering to Akutan, more than 10 delivering to Adak, and 5 or more delivering to King Cove and Sand Point. Overall, the Seattle MSA ownership address BSAI non-CDQ directed Pacific cod trawl fishery catcher vessel fleet deliveries footprint is much larger and more widely and evenly distributed than that of any other community profiled.

Table 39. Number of Catcher Vessels with Seattle MSA Ownership Addresses Making BSAI Non-CDQ Directed Pacific Cod Fishery Trawl-Caught Deliveries to Shoreside Processors, by Operating Location of Processor, 2008-2018

Geography	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Average 2008-2018 (number)	Average 2008-2018 (percent)	Total Unique CVs 2008-2018
Adak	7	7	0	0	9	7	3	0	0	0	4	3.4	7.5%	15
Akutan	11	4	6	7	9	9	10	13	10	9	11	9.0	20.0%	23
King Cove	2	0	0	1	1	1	0	1	1	3	5	1.4	3.0%	9
Sand Point	0	0	0	1	0	2	0	0	0	0	4	0.6	1.4%	5
Unalaska/Dutch Harbor	13	6	8	9	11	14	14	10	10	11	22	11.6	25.8%	32
Alaska Total	30	15	14	17	24	28	27	22	21	23	37	23.5	52.0%	48
Seattle (IFPs)**	21	16	17	16	20	19	18	18	32	30	31	21.6	48.0%	37
Grand Total	51	31	31	33	44	47	45	40	53	53	68	45.1	100.0%	48
*Confidential														
**Seattle is shown as the operating community for Inshore Floating Processors when the actual area of operation is not specified in the available dataset.														
Source: NMFS Alaska Region Catch Accounting System, data compiled by AKFIN in Comprehensive_BLEND_CA														

BSAI non-CDQ Directed Pacific Cod Trawl Fishery Catcher Vessel Crew

The limited data are available on the number of crew positions on BSAI non-CDQ directed Pacific cod trawl catcher vessels (i.e., the data only include crew positions on GOA trawl catcher vessels that filed an EDR report in 2016 and also participated in the BSAI non-CDQ directed Pacific cod trawl fishery that same year). These data, which are known substantially incomplete compared to total catcher vessel crew positions in the fishery, as discussed in Section 3.5.2, indicate that:

- There was a total of 30 crew positions were held by Seattle MSA residents on catcher vessels included in the data. Of those 30 positions 24 (80.0 percent) were aboard catcher vessels with Seattle MSA ownership addresses, 3 (10 percent) were aboard vessels with other Washington community ownership addresses, 1 (3.3 percent) was aboard a vessel with a Kodiak ownership address, and 2 (6.7 percent) were aboard vessels with Oregon ownership addresses.
- There was a total of 92 positions aboard catcher vessels with Seattle MSA ownership addresses covered by the data. Of these 92 positions, 28 (30.4 percent) were held by Alaska residents, 24 (26.7 percent) were held by Oregon residents, 31 (33.7 percent) were held by Washington residents, and 8 (8.7 percent) were held by persons from other states and/or unspecified locations.
- No crew earnings data are available.

For more detail on community of catcher vessel ownership for those vessels with crew positions held by individuals with Seattle MSA or other Washington community residence addresses and the community of residence address for individuals who held crew positions aboard catcher vessels with Seattle MSA or other Washington community ownership addresses, please see Table 52. More detail regarding catcher vessel crew positions is also available in Section 9.4 (Attachment D, Table 67).

Catcher/Processor Sector

Vessels with Catcher/Processor Endorsed LLP Licenses Functioning as Catcher Vessels in the BSAI Non-CDQ Directed Pacific Cod Trawl Fishery

This fleet is highly concentrated in the Seattle MSA, with 11 unique vessels engaged in the fishery 2008-2018, ranging between seven and 10 vessels in any given year, with an annual average of 7.9 active vessels per year. Newport Oregon and Rockland Maine had a single unique vessel that was engaged in the fishery each year 2008-2018, while Half Moon Bay California had a single unique vessel that was engaged in the fishery each year 2008-2012 only (Table 7). Annual average ex-vessel gross revenues 2008-2017, derived from BSAI trawl-caught Pacific cod only, were \$5.5 million, which was approximately 22.7 percent of total ex-vessel gross revenues (from all species, area, and gear fisheries) for these vessels as a group on an annual average basis 2008-2017. The \$5.5 million also represents about 4.6 percent of all first ex-vessel gross revenues (from all species, area, and gear fisheries) of all catcher vessels with Seattle and Newport ownership addresses combined (i.e., the “community CV fleet”) (Table 9).

Catcher/Processors that Accepted BSAI Non-CDQ Directed Pacific Cod Trawl Fishery Catcher Vessel Deliveries (acted as Motherships)

The Seattle MSA has been community of ownership address of all catcher/processors that accepted BSAI non-CDQ directed Pacific cod trawl fishery catcher vessel deliveries 2008-2018.⁴⁶ For each year 2009-2015, two or three catcher/processors participated in that aspect of the fishery, with participation increasing to 7 catcher/processors in 2017 and 8 in 2018 (see Table 11). Annual average first wholesale gross revenues 2008-2017, derived from BSAI trawl-caught deliveries of Pacific cod only, were \$8.81 million, which was approximately 5.3 percent of total first wholesale gross revenues (from all species, area, and gear fisheries) for these catcher/processors as a group on an annual average basis 2008-2017. Similar to other sectors described, while these were a relatively modest proportion of overall processing first wholesale gross revenues for these catcher/processors as a group, it is important to note that (1) these revenues likely varied considerably from year to year and may have been substantial in absolute terms at least some years, (2) the timing of this processing may have been important to the operational flow of the vessel and provided an important source of labor hours for processing staff, and (3) the processing of BSAI non-CDQ directed Pacific cod fishery trawl-caught deliveries may have been strategically important to the overall operations of one or more catcher/processors looking to continuing access, or potential future access, to BSAI non-CDQ directed Pacific cod fishery trawl-caught deliveries as important to maintaining a desired flexibility and diversity of operations and to maintaining mutually beneficial relationships with some of its delivery fleet that participated in other fisheries with the catcher/processor. The \$8.81 million also represents about 0.83 percent of all first wholesale gross revenues (from all species, area, and gear fisheries) of all catcher/processors with Seattle and Kirkland ownership addresses combined (i.e., the “community CP fleet”) (Table 13).

As there is an extensive analysis of this catcher/processor sector in the RIR to which this SIA is appended and the relevant vessels are exclusively associated with ownership addresses in the Seattle MSA, that baseline characterization is not recapitulated here.

Crew Aboard Catcher/Processors that Accepted BSAI Non-CDQ Directed Pacific Cod Trawl Fishery Catcher Vessel Deliveries (acted as Motherships)

Only limited EDR-based counts of catcher/processor crew by community of employee residence are available because only Amendment 80 vessels are required to submit an EDR (i.e., no data are available for AFA catcher/processors or other vessels that hold a catcher/processor license but are neither AFA catcher/processors or Amendment 80 vessels). A total of 16 states and are represented in the data, along with 59 unique communities. The five states with the most unique communities in the data and the number of those communities by state are:

- Washington – 33 communities
- Alaska – 5 communities
- Oregon – 4 communities
- California – 3 communities
- Pennsylvania – 3 communities

⁴⁶ All of participating catcher/processors had Seattle ownership addresses 2008-2015; for 2016-2018, two of the catcher/processors had Kirkland ownership addresses, with the balance (5 in 2016 and 6 in 2017 and 2018) having Seattle ownership addresses.

The other states in the data (all of which are 1 community states) include: Alabama, Arizona, Colorado, Florida, Hawaii, Illinois, Maine, Montana, Nebraska, Nevada, and Ohio. A list of specific communities per state may be found in Table 68 (in Attachment E).

Table 40 provides a summary of the number of positions and employees onboard Amendment 80 catcher/processors that accepted BSAI non-CDQ directed Pacific cod trawl fishery catcher vessel deliveries in 2016. No information on payments to labor associated with BSAI non-CDQ directed Pacific cod fishery trawl caught deliveries to catcher/processors acting as motherships is available. Similarly, no routinely collected data on crew demographics is currently available for this group of vessels that would be of use were a future analysis of potential environmental justice concerns, were one to be required. However, demographic information by job category for 10 Amendment 80 BSAI groundfish trawl catcher/processors owned by four Seattle MSA-based firms were collected in 2014 to support an earlier Council analysis. These data are shown in Table 69 (in Attachment F).

Catcher Vessels Making Bering Sea Non-CDQ Directed Pacific Cod Fishery Trawl-Caught Deliveries to Catcher/Processors Acting as Motherships

Table 41 provides information on the community of ownership address of catcher vessels making Bering Sea non-CDQ directed Pacific cod fishery trawl-caught deliveries to catcher/processors acting as motherships over the period 2008-2018. As shown, the large majority of catcher vessels involved (16 out of 19 or 84 percent of the unique vessels involved) have Seattle MSA ownership addresses, with the number of vessels delivering per year generally increasing over time and vessels with ownership addresses in communities other than the Seattle MSA only appearing 2016-2018.

Table 40. Summary Number of Positions and Employees Onboard Amendment 80 Catcher/Processors that Accepted BSAI Non-CDQ Directed Pacific Cod Trawl Fishery Catcher Vessel Deliveries, 2016

Geography	Community of Vessel Ownership Address	No. of CPs	Average Number of Positions Onboard				Number of Employees Onboard			
			Fishing (Deck Crew)	Processing	All Other *	Total	Fishing (Deck Crew)	Processing	All Other *	Total
Seattle MSA	Kirkland	2	**	**	**	**	**	**	**	**
Seattle MSA	Seattle	5	**	**	**	**	**	**	**	**
Grand Total		7	5.1	31.3	9.4	45.9	69	661	192	922

*Includes officers, engineers, cooks, etc.

** Value suppressed due to data confidentiality considerations.

Source: A80 EDR data.

Table 41. Community of Ownership of Catcher Vessels Making Bering Sea Non-CDQ Directed Pacific Cod Fishery Trawl-Caught Deliveries to Catcher/Processors, 2008-2018 (number of vessels)

Geography	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Annual Average 2008-2018 (number)	Annual Average 2008-2018 (percent)	Total Unique CVs 2008-2018 (number)
Kodiak	0	0	0	0	0	0	0	0	1	2	0	0.3	6.00%	2
New port	0	0	0	0	0	0	0	0	0	0	0	0.0	0.00%	0
Seattle MSA*	1	0	0	2	6	3	5	5	6	8	10	4.2	92.00%	16
Other	0	0	0	0	0	0	0	0	0	0	1	0.1	2.00%	1
Grand Total	1	0	0	2	6	3	5	5	7	10	11	4.5	100.00%	19

*Seattle MSA includes all communities in King, Pierce, and Snohomish counties (Edmonds, Issaquah, Lakewood, Seattle, and Woodinville are represented in the data).

Note: Due to CV ownership movement between communities over the years shown, total unique CVs per community may not sum to state or grand totals.

Source: NMFS Alaska Region Catch Accounting System, data compiled by AKFIN in Comprehensive_BLEND_CA

Processing Sector

The Seattle MSA is the location of the corporate offices, or domestic the corporate offices, for many of the 16 shoreside processors operating in Alaska that accepted BSAI non-CDQ directed Pacific cod fishery trawl-caught deliveries over the period 2008-2018. Home of the closest U.S. port complex to both Alaska and Asia, the Seattle MSA often serves as the logistical support base for shoreside processors operating in Alaska as well.

Seattle is also shown in the 2008-2018 dataset as the attributed location of shoreside processing of BSAI non-CDQ directed Pacific cod fishery trawl-caught deliveries. The data suggest, however, that these shoreside processors are not shore-based operations; rather, they are inshore floating processors owned by firms with Seattle addresses that operate in Alaska waters, but for which good operating location data are unavailable. Some inshore floating processors tie up, access shore utilities, and operate within Alaska municipal boundaries and thereby show up in the data as shoreside processors operating in those communities; in other cases, floating processors will moor and operate for varying periods of time along the Alaska coast outside of municipal boundaries and thereby sometimes not show up in the data with reliable/consistent processing location information and/or accept deliveries while in other locales more temporarily. While specific quantitative information on the volume and value of production for inshore floating processors attributed in the data as shoreside processing in Seattle are confidential, these operations focused almost exclusively on pollock or Pacific cod. Specifically, a total of five unique and an annual average of 2.5 shoreside/IFP processors attributed to Seattle accepted deliveries BSAI non-CDQ Pacific cod fishery trawl-caught deliveries 2008-2018. Two or three of these processors were active each year 2008-2015.

Table 42 provides information on the “community footprint” of the catcher vessels that made BSAI non-CDQ directed Pacific cod fishery trawl-caught deliveries to Seattle/IFP shoreside processors 2008-2018, based on catcher vessel ownership address. As shown, of the 52 unique vessels that made BSAI non-CDQ directed Pacific cod fishery trawl-caught deliveries to Seattle/IFP shoreside processors during this period, 35 had Seattle MSA ownership addresses (with an average of 16.0 vessels making deliveries per year) and 12 had Newport ownership addresses (with an average of 6.1 vessels making deliveries per year). Among other catcher vessels making BSAI non-CDQ directed Pacific cod fishery trawl-caught deliveries to Seattle/IFP shoreside processors during the period 2008-2018 were a total of 5 unique vessels with Kodiak ownership addresses.

Table 42. Community of Ownership of Catcher Vessels Making Bering Sea Non-CDQ Directed Pacific Cod Fishery Trawl-Caught Deliveries to Seattle/IFP Shoreside Processors, 2008-2018 (number of vessels)

Geography	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Annual Average 2008-2018 (number)	Annual Average 2008-2018 (percent)	Total Unique CVs 2008-2018 (number)
Kodiak	0	0	0	3	2	3	1	1	2	3	4	1.7	6.57%	5
Newport	8	8	1	8	6	7	5	5	7	7	5	6.1	23.18%	12
Seattle MSA*	11	11	6	15	18	17	17	18	23	20	20	16.0	60.90%	35
Other**	4	3	1	4	2	3	2	2	3	1	2	2.5	9.34%	6
Grand Total	23	22	8	30	28	30	25	26	35	31	31	26.3	100.00%	52
*Seattle MSA includes all communities in King, Pierce, and Snohomish counties.														
**Location suppressed to retain confidentiality.														
Note: Due to CV ownership movement between communities over the years shown, total unique CVs per community may not sum to state or grand totals.														
Source: NMFS Alaska Region Catch Accounting System, data compiled by AKFIN in Comprehensive_BLEND_CA														

Support Services Sector

Seattle has a large fisheries support service sector that includes harbors, nautical supply facilities, ship yards, boat building and repair companies, cold storage plants, and shipping companies familiar with doing work in rural Alaskan communities as well as serving international customers, with the Port of Seattle being the 4th largest container facility in the United States. The port facility is separated into a north (Seattle) and south (Tacoma) harbor. Across the facilities, the port spans 1,754 acres, includes 10 container terminals, 23 deep-water berths, and has 47 container cranes (Northwest Seaport Alliance 2016).

The Port of Seattle, in addition to being a large container port, offers commercial moorage at multiple locations, including Piers 90 and 91, frequently home to factory trawlers that work the North Pacific, as well as the Bell Street Pier, Maritime Industrial Center, Terminal 30, and Fishermen's Terminal. The Port of Tacoma, which handles more than 70 percent of the marine cargo moving between Alaska and the contiguous 48 states, is also home to a substantial number of commercial fishing vessels, both catcher vessels and catcher/processors, that regularly participate in the North Pacific (National Oceanic and Atmospheric Administration 2007).

Fisherman's Terminal is located in along the Lake Washington Ship Canal and has been the center of commercial fishing support service in Seattle since 1914. The facility has moorage for 700 vessels, lineal moorage of 2,800 feet, 371 stalls, three cranes, an electric hoist, and forklifts for rental (National Oceanic and Atmospheric Administration 2007; Port of Seattle 2016). Another benefit of Fisherman's Terminal is that it is on the Lake Washington side of the Chittenden Locks, which means that moorage and repair work can occur out of more corrosive saltwater.

Finally, Seattle is also home to multiple fishing industry organizations engaged in Alaska fisheries. These include the Alaska Seafood Cooperative, the At-Sea Processor's Association, the Deep Sea Fishermen's Union of the Pacific, the Pacific Seafood Processors Association, and United Catcher Boats, among others.

5.3.2 Newport and Other Coastal Oregon Communities

Similar to the structure of the Seattle MSA profile above, although multiple other Oregon communities were engaged in the BSAI non-CDQ directed Pacific cod trawl fishery in the years covered by the baseline data (2008-2018), the focus of this section is largely on Newport due to its relatively substantial engagement in the fishery. Specifically, among Oregon communities with BSAI non-CDQ directed Pacific cod trawl catcher vessel ownership addresses outside of Newport 2008-2018, only one community, Portland, had an annual average of more than 0.5 catcher vessels with local ownership addresses participating in the fishery over this period (see Table 2).⁴⁷ In contrast to the Seattle MSA, however, and like the other Oregon communities, direct sector participation in the BSAI non-CDQ directed Pacific cod trawl fishery in Newport was largely limited to the catcher vessel sector.

⁴⁷ One unique catcher vessel with a Portland ownership address participated in the BSAI non-CDQ directed Pacific cod trawl fishery each year 2012-2018 (and no vessels with Portland ownership addresses did so in 2008-2011). One other Oregon community outside of Newport (Siletz which, like Newport, is in Lincoln county) had two unique catcher vessels with local ownership addresses participate in the BSAI non-CDQ directed Pacific cod trawl fishery during the 2008-2018 period, with one of two vessels active in three different years (2008, 2010, and 2018). No other catcher vessels with Oregon ownership addresses outside of Newport appear in the data as active participants in the BSAI non-CDQ directed Pacific cod trawl fishery in the years 2008-2018.

5.3.2.1 Location and History

Newport is located along a north-central portion of Oregon’s Pacific coast and Yaquina Bay, a coastal estuary at the mouth of the Yaquina River. The seat of Lincoln County, there are two distinct areas of the community, the Bayfront, which continues to feature a working waterfront, and Nye Beach, which has attracted seasonal visitors to the area since the 1800s, along the oceanfront.

Traditionally, ancestors of the Siletz people inhabited the coastal areas that include Tillamook, Lincoln, and Lane counties. European miners arrived in the area in the 1850s, and soon thereafter local Native American groups were forced onto reservations. The area opened to settlement by non-Native Americans in the mid-1860s, around the time an oyster industry developed on Yaquina Bay. From that time through the present, tourism, fishing, and logging have defined Newport (National Oceanic and Atmospheric Administration 2007).

5.3.2.2 Community Demographics and Economy

According to federal census data, Newport had a population of 9,989 in 2010. Census figures from that year show that 84.1 percent of the residents of Newport identified themselves as White, 2.1 percent as American Indian or Alaska Native, 0.6 percent as Black/African American, 1.6 percent as Asian, 0.2 percent as Hawaiian Native and Other Pacific Islander, and 11.5 percent as “some other race” or “two or more races,” while 15.3 percent of the residents of any race in Newport identified themselves as being of Hispanic or Latino origin. Based on race and ethnicity combined, 22.0 percent of Newport’s total population was composed of minority residents (that is, all residents other than those identified as both White [race] and of non-Hispanic or Latino origin [ethnicity]) in 2010. Housing data from the U.S. Census indicate that 96.8 percent of all Newport residents lived in non-group quarters housing.

According to the most recent U.S. Census American Community Survey (2013-2017), approximately 52.9 percent of the population 16 years and over in the City of Newport was employed and 3.1 percent was unemployed (U.S. Census Bureau 2018). More recent statistics from November 2018 for Lincoln County, where Newport is located, suggested that the unemployment rate had increased to 5.1 percent, which was still somewhat higher than the Oregon statewide rate at the time (3.9 percent) (U.S. Bureau of Labor Statistics 2019c; U.S. Bureau of Labor Statistics 2019a). Per capita income was estimated at \$25,365, median household income was \$39,870 and median family income was \$51,183. An estimated 19.4 percent of residents were considered low-income, defined as those individuals living below the poverty level threshold (U.S. Census Bureau 2018).

As of 2016, major industries in Newport included arts, entertainment, recreation, accommodation, and food services (19.1 percent); educational services, health care, and social assistance (18.3 percent); and retail trade (13.0 percent). Natural resource jobs including agriculture, forestry, fishing, hunting, and mining represented 4.6 percent of local employment (U.S. Census Bureau 2016). Major employers in Lincoln County included the Confederated Tribes of Siletz Indians, Samaritan Health Services, Lincoln County School District, county government, Georgia Pacific Toledo, Oregon State University Hatfield Marine Science Center, Pacific Seafood, NOAA, Walmart, and Oregon Coast Brewing (Economic Development Alliance 2016).

5.3.2.3 Commercial Fisheries Engagement

Overview

Newport, like the Seattle MSA, is substantially engaged in multiple federal fisheries off Alaska managed by the North Pacific Fishery Management Council. It is also a community heavily engaged

in federally fisheries off of the West Coast managed by the Pacific Fishery Management Council. Among the 11 Oregon communities other than Newport that are directly engaged in the BSAI non-CDQ directed Pacific cod trawl fishery 2008-2018⁴⁸, six of the communities (Astoria, Port Orford, Siletz, Sisters, South Beach, and Toledo) were described in an earlier NOAA document (National Oceanic and Atmospheric Administration 2007) as fishing communities engaged in both the West Coast and North Pacific fisheries, while the other five (Clackamas, Lincoln City, Philomath, Portland, and Salem) are not (see Figure 2 for the location of these communities).

Harvest Sector

General

From 2003 through 2014, the annual number of Newport resident-owned commercial fishing vessels participating in all fisheries, using all gear types in all areas combined (i.e., the community commercial fishing fleet), varied from 13 (in 2014) to 30 (in 2003), with an annual average of 20.4 resident-owned commercial fishing vessels over this time span. The annual ex-vessel gross revenues for these vessels ranged from \$25,585,310 (in 2014) to \$61,106,191 (in 2003), with an annual average of \$44,702,917 ex-vessel gross revenues over this period.

BSAI Non-CDQ Directed Pacific Cod Trawl Catcher Vessels

Information on Oregon community participation in the BSAI non-CDQ directed Pacific cod trawl fishery, as indicated by the number of catcher vessels with Oregon ownership addresses engaged in the fishery by year, 2008-2018 is shown in Table 2. Readily apparent is the concentration of BSAI trawl catcher vessel ownership in Newport, with 7.4 vessels participating in the fishery on an annual average basis with a total of 13 unique vessels engaged in the fishery 2008-2018. The only other Oregon communities engaged in the fishery were Siletz (0.3 vessels on an annual average basis and a total of 2 unique vessels) and Portland (0.6 vessels on an annual average basis and a total of 1 unique vessel).

In terms of reliance or dependency for Newport ownership address BSAI non-CDQ directed Pacific cod fishery trawl catcher vessels, on an annual average basis for the years 2008-2018, ex-vessel gross revenues from BSAI non-CDQ directed Pacific cod fishery trawl-caught deliveries accounted for approximately 37 percent of all ex-vessel gross revenues (from area, gear, and species fisheries) generated by those vessels on an annual average basis for the period as a whole (Table 4). For the Newport ownership address community fleet as a whole (including all area, gear, and species fisheries), on an annual average basis for the years 2008-2018, ex-vessel gross revenues from BSAI non-CDQ directed Pacific cod trawl-caught deliveries accounted for approximately 14 percent of all ex-vessel gross revenues generated by those vessels for the period as a whole (Table 5).

Table 43 provides information on the “delivery footprint” of the Newport ownership address BSAI non-CDQ directed Pacific cod trawl fishery catcher vessel fleet. As shown, there were BSAI non-CDQ directed Pacific cod fishery trawl-caught deliveries made by multiple Newport resident-owned catcher vessels every year 2008-2018 to the shoreside processor in Akutan and the Seattle/IFP processors. The Akutan processor took deliveries from 5 to 8 Newport ownership address catcher vessels per year with an annual average of 6.4 vessels and a total of 11 unique vessels making

⁴⁸ This includes Oregon communities at least minimally directly engaged in the BSAI non-CDQ directed Pacific cod trawl fishery through being the community of ownership address of relevant catcher vessels, catcher/processors, or LLP licenses; and/or the homeport of relevant catcher vessels and/or catcher/processors during the period 2008-2018 or the most recent data year, depending on the variable. It does not include the communities of residence of crew members aboard relevant catcher vessels or catcher/processors.

deliveries over this time span. The Seattle/IFP processors took deliveries from 6 to 8 Newport ownership address vessels per year, with an annual average of 6.9 vessels and a total of 11 unique vessels making deliveries over this time span. Newport ownership address catcher vessels made deliveries to Unalaska/Dutch Harbor each year 2008-2018 (1 catcher vessel with Newport ownership address made a delivery or deliveries each year 2008-2018 except in 2010 when two did so, for an annual average of 1.1 vessels and a total of 2 unique vessels). One unique Newport ownership address catcher vessel made deliveries to Adak in 2009, 2012, and 2013, for an annual average of 0.3 vessels.

Table 43. Number of Catcher Vessels with Newport Oregon Ownership Addresses Making BSAI Non-CDQ Directed Pacific Cod Fishery Trawl-Caught Deliveries to Shoreside Processors, by Operating Location of Processor, 2008-2018

Geography	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Average 2008-2018 (number)	Average 2008-2018 (percent)	Total Unique CVs 2008-2018
Adak	0	1	0	0	1	1	0	0	0	0	0	0.3	2.1%	1
Akutan	8	7	7	7	7	7	5	5	5	7	5	6.4	49.0%	11
King Cove	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0%	0
Sand Point	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0%	0
Unalaska/Dutch Harbor	1	1	2	1	1	1	1	1	1	1	1	1.1	8.4%	2
Alaska Total	8	7	7	7	8	8	6	6	6	7	6	6.9	53.1%	11
Seattle (IFPs)**	8	8	1	8	6	7	5	5	7	7	5	6.1	46.9%	11
Grand Total	16	15	8	15	14	15	11	11	13	14	11	13.0	100.0%	13
*Confidential														
**Seattle is shown as the operating community for Inshore Floating Processors when the actual area of operation is not specified in the available dataset.														
Source: NMFS Alaska Region Catch Accounting System, data compiled by AKFIN in Comprehensive_BLEND_CA														

BSAI non-CDQ Directed Pacific Cod Trawl Fishery Catcher Vessel Crew

The limited data are available on the number of crew positions on BSAI non-CDQ directed Pacific cod trawl catcher vessels (i.e., the data only include crew positions on GOA trawl catcher vessels that filed an EDR report in 2016 and also participated in the BSAI non-CDQ directed Pacific cod trawl fishery that same year). These data, which are known substantially incomplete compared to total catcher vessel crew positions in the fishery, as discussed in Section 3.5.2, indicate that:

- There was a total of 38 crew positions were held by Lincoln County residents on catcher vessels included in the data. Of those 38 positions 18 (47.4 percent) were aboard catcher vessels with Lincoln County ownership addresses, 3 (7.9 percent) were aboard vessels with Kodiak ownership addresses, and 17 (44.7 percent) were aboard vessels with Washington addresses.
- There was a total of 48 positions aboard catcher vessels with Lincoln County ownership addresses covered by the data. Of these 48 positions, 14 (29.2 percent) were held by Alaska residents, 27 (56.3 percent) were held by Oregon residents, 4 (8.3 percent) were held by Washington residents, and 3 (6.3 percent) were held by persons from other states and/or unspecified locations.
- No crew earnings data are available.

For more detail on community of catcher vessel ownership for those vessels with crew positions held by individuals with Newport or other Lincoln County residence addresses and the community of residence address for individuals who held crew positions aboard catcher vessels with Newport or other Lincoln County ownership addresses, please see Table 52. More detail regarding catcher vessel crew positions is also available in Section 9.4 (Attachment D, Table 67).

Support Services Sector

The Port of Newport includes 1,400 feet for waterfront property and includes the port's administration building and the commercial marina. The commercial marina includes moorage for approximately 200 commercial fishing vessels, a 300-foot fixed service dock with four hoists, 200 feet of floating dock for dockside vessel repair, and two acres of crab gear storage. Also, a shipwright is located within the marina and between 50 to 60 fishery support service businesses are located along the waterway (Port of Newport 2016; Dillman 2013).

The Newport area is also tied closely to other communities in the region, including Depoe Bay and Toledo. The Port of Toledo, located up the Yaquina River from Newport, is the only inland Oregon coastal community with a deep-water channel and is home to a major boatyard in Sturgeon Bend that includes a 300-ton dry dock capable of handling vessels up to 100 feet long and 46 feet wide. A group of approved independent contractors are available for various commercial vessel services through the public boatyard (Dillman 2013). In addition to providing services to the locally based fleet, support facilities in the area are used to service vessels from elsewhere on the West Coast engaged in a wide range of Alaska fisheries as well as a number of vessels based in Alaska itself.

5.4 Cross-Cutting Community Engagement Ties

Communities, of course, are not engaged in the BSAI non-CDQ directed Pacific cod trawl fishery in isolation, with multiple interconnections or cross-cutting ties. In this section, nine types of data are presented to illustrate the correspondence between: (1) Community of ownership address of catcher vessels and the community of operation of shoreside processors accepting deliveries from those catcher vessels; (2) Community of ownership address of catcher vessels and the community of ownership address of catcher/processors acting as motherships and accepting deliveries from those catcher vessels; (3) Community of ownership address of vessels with catcher/processor endorsed LLP licenses functioning as catcher vessels and the community of operation of shoreside processors accepting deliveries from those vessels; (4) Community of ownership address of vessels with catcher/processor endorsed LLP licenses functioning as catcher vessels and the community of ownership address of catcher/processors acting as motherships and accepting deliveries from those vessels; (5) Community of ownership address of catcher vessels and homeport community of those same vessels; (6) Community of ownership address of catcher vessels and community of ownership address of the LLP licenses used on those same vessels; (7) Community of ownership address of vessels with catcher/processor endorsed LLP licenses that functioned as catcher vessels and homeport designation community of those same vessels; (8) Community of ownership address and homeport designation of catcher/processors that accepted catcher vessel deliveries; and (9) Community of ownership address of catcher vessels and the communities where crew members on those vessels reside, for those vessels that fished in both the BSAI and GOA and submitted a GOA Annual Trawl Catcher Vessel Economic Data Report for Calendar Year 2016.

- Table 44 provides information on the relationship between the community of ownership address of catcher vessels active in the BSAI non-CDQ directed Pacific cod trawl fishery and the community of operation of shoreside processors accepting BSAI non-CDQ directed Pacific cod fishery trawl-caught deliveries from those catcher vessels, over the period 2008-2018. The columns in this table show the geographic range of ownership of the relevant catcher vessels, in terms of where they made at least one BSAI non-CDQ directed Pacific cod fishery trawl-caught delivery, both on an annual average number of vessels basis and on a total number of unique vessels basis (all years combined) over the period 2008-2018. The rows in this table show the geographic “catchment area” of shoreside processors operating in a given community, in terms of community of ownership address of catcher vessels that made at least one BSAI non-CDQ directed Pacific cod fishery trawl-caught delivery to at least one locally operating shoreside processor.
- Table 45 provides information on the relationship between the community of ownership address of catcher vessels active in the BSAI non-CDQ directed Pacific cod trawl fishery and the community of ownership address of catcher/processors acting as motherships and accepting BSAI non-CDQ directed Pacific cod fishery trawl-caught deliveries from those catcher vessels, over the period 2008-2018. The columns in this table show the geographic range of ownership of the relevant catcher vessels, in terms of where they made at least one BSAI non-CDQ directed Pacific cod fishery trawl-caught delivery, both on an annual average number of vessels basis and on a total number of unique vessels basis (all years combined) over the period 2008-2018. The rows in this table show the geographic “catchment area” of catcher/processors acting as motherships with ownership addresses in a given community, in terms of community of ownership address of catcher vessels that made at least one BSAI non-CDQ directed Pacific cod fishery trawl-caught delivery to at least one locally operating catcher/processor. As shown, both the involved catcher vessels and the involved catcher/processors acting as motherships are highly concentrated in the Seattle MSA area.
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- Table 46 provides information on the relationship between the community of ownership address of vessels with catcher/processor endorsed LLP licenses functioning as catcher vessels active in the BSAI non-CDQ directed Pacific cod trawl fishery and the community of operation of shoreside processors accepting BSAI non-CDQ directed Pacific cod fishery trawl-caught deliveries from those vessels, over the period 2008-2018. There are few enough vessels in this category that the communities of ownership address could not be disclosed due to data confidentiality considerations.
- Table 47 provides information on the relationship between the community of ownership address of vessels with catcher/processor endorsed LLP licenses functioning as catcher vessels active in the BSAI non-CDQ directed Pacific cod trawl fishery and the community of ownership address of catcher/processors acting as motherships and accepting BSAI non-CDQ directed Pacific cod fishery trawl-caught deliveries from those vessels, over the period 2008-2018. As with the previous table, there are few enough vessels in this category that the communities of ownership address could not be disclosed due to data confidentiality considerations.
- Table 48 provides information on the relationship of community of ownership address of catcher vessels active in the BSAI non-CDQ directed Pacific cod trawl fishery and homeport community of those same vessels in 2018 (or the most recent data year available). In those instances where community of ownership varies from community of homeport, that may be indicative of a pattern of differential distribution of vessel port activities, but previous NPFMC social impact analyses (e.g., AECOM 2010) would suggest that homeport designations are, in general, inconsistently predictive of the location of vessel activity in any given fishery. Nevertheless, the table shows marked variation in patterns of correspondence of community of ownership and community of homeport designation for the relevant catcher vessels. For example:
 - Catcher vessels with Kodiak ownership addresses (the only Alaska community with catcher vessel ownership addresses) have only Alaska homeport community designations (mostly Kodiak, but one each for Juneau and Sand Point).
 - With one exception, catcher vessels with Oregon ownership addresses also have Oregon communities as their designated homeports (the exception being one catcher vessel with a Newport ownership address that has a Kodiak homeport designation).
 - In contrast, it is common for catcher vessels with Washington ownership addresses to have either Alaska homeport community designations or Washington homeport community designations (with Seattle being by far the most common Washington homeport designation, among vessels with any Washington community ownership address). Only three catcher vessels with Washington ownership addresses have Oregon community homeport designations (all of which are Newport).
 - Of the 13 communities of catcher vessel ownership address and the 11 communities of homeport designation, there are only 4 communities where at least one vessel that has the same community of vessel ownership address and community of homeport designation (Kodiak, Newport, Seattle, and Bellingham).
- Table 49 provides information on the relationship of community of ownership address of catcher vessels active in the BSAI non-CDQ directed Pacific cod trawl fishery and community of ownership address of the LLP licenses used on those same vessels in 2018 (or the most recent data year available). This table shows a greater degree of correspondence

between the two indicators, except for catcher vessels with Oregon ownership addresses. Specifically:

- Catcher vessels with Kodiak ownership addresses (the only Alaska community with catcher vessel ownership addresses) with one exception have only Alaska community LLP license ownership addresses (mostly Kodiak, but one for Homer). The exception is one catcher vessel with a Kodiak ownership address and an LLP license with a Newport ownership address.
- With one exception, catcher vessels with Oregon ownership addresses have LLP licenses with Oregon or Washington addresses (the exception being one catcher vessel with a Newport ownership address that has a Kodiak LLP license ownership address).
- In contrast, catcher vessels with Washington ownership addresses have only LLP licenses with Washington addresses.

It is important to underscore that the data in Table 48 and Table 49 represent the most recent year for which data are available. If catcher vessel and LLP license historic ownership community addresses and historic homeport designations are examined over the period 2008-2018, it is apparent that actual ownership or administrative changes of a few vessels account for much of the apparent modest/transient engagement in the fishery occurring Alaska communities outside of Kodiak over this time period. For example, over the period 2008-2018, one catcher vessel with one LLP license accounts for ownership addresses and homeport designations in Anacortes (WA) and Kodiak and LLP ownership addresses in False Pass and Homer; another catcher vessel with one LLP license accounts for catcher vessel ownership addresses in Sand Point, Bellingham, Seattle, and Kodiak, a homeport designation in Sand Point, and LLP ownership addresses Bellingham and Kodiak.

- Table 50 provides information on the relationship of community of ownership address of vessels with catcher/processor endorsed LLP licenses that functioned as catcher vessels active in the BSAI non-CDQ directed Pacific cod trawl fishery and homeport designation community of those same vessels in 2018 (or the most recent data year available). The table shows marked variation in patterns of correspondence of community of ownership and homeport designation for the relevant vessels.
 - Of the vessels with Washington (Seattle MSA) ownership addresses, just over half had Alaska homeport designations (5 in Unalaska/Dutch Harbor and 2 in Kodiak). The rest has Seattle (5) or Port Townsend (WA) homeport designations.
 - Of the 2 vessels with ownership addresses outside of Washington, both had vessel ownership address communities and homeport designation communities that matched (Newport OR and Rockland ME).
 - In all cases, as stated in the notes at the bottom of the table, community of vessel ownership address matches the community of LLP license ownership address for the LLP that was used on the vessel (if communities inside of the Seattle MSA are considered a part of a single community).
- Table 51 provides information on the relationship of community of ownership address of and homeport designation of catcher/processors that accepted BSAI non-CDQ directed Pacific cod trawl fishery catcher vessel deliveries in 2018 (or the most recent data year available). As shown in the table:

- All relevant vessels have ownership addresses in the Seattle MSA.
- All have homeport designations of Seattle (5) or one of two Alaska communities (Unalaska/Dutch Harbor [3] or Kodiak [1]).

- Table 52 shows the relationship of the community of ownership address of catcher vessels active in the BSAI non-CDQ directed Pacific cod trawl fishery and the communities where crew members on those vessels reside, for those vessels that fished in both the BSAI and GOA and submitted a GOA Annual Trawl Catcher Vessel Economic Data Report for Calendar Year 2016. ***As noted in Section 3.5.2 there substantial caveats that must accompany the use of these data. All of the caveats outlined in that section apply specifically to the data in this table as well.*** In summary⁴⁹, available data suggest that for this subset of catcher vessels active in the BSAI non-CDQ directed Pacific cod trawl fishery:
 - 80 Alaska resident crew members from 10 different communities are represented in the data. Approximately 83 percent of all Alaska resident crew members are from Kodiak. Three other Alaska communities had more than one resident crew member (Anchorage [4], Palmer [2], and Wasilla [2])⁵⁰.
 - Alaska residents made up approximately 62 percent of crew on catcher vessels with Kodiak ownership addresses, 29 percent of crew on catcher vessels with Oregon addresses, and 32 percent of crew on catcher vessels with Washington addresses.
 - 58 Oregon resident crew members are represented in the data. Approximately 66 percent of all Oregon resident crew members are from Lincoln county.
 - Oregon residents made up approximately 14 percent of crew on catcher vessels with Kodiak ownership addresses, 56 percent of crew on catcher vessels with Oregon addresses, and 22 percent of crew on catcher vessels with Washington addresses.
 - 44 Washington resident crew members are represented in the data. Approximately 68 percent of all Washington resident crew members are from the Seattle MSA.
 - Washington residents made up approximately 2 percent of crew on catcher vessels with Kodiak ownership addresses, 8 percent of crew on catcher vessels with Oregon addresses, and 36 percent of crew on catcher vessels with Washington addresses.

⁴⁹ More detail is available in Section 9.4 (Attachment D, Table 67).

⁵⁰ The Alaska communities represented in the data has having one resident crew member each were Anchor Point, Kenai, Petersburg, Sand Point, Seward, and Soldotna.

Table 44. Community of Ownership Address of Catcher Vessels Making BSAI Non-CDQ Directed Pacific Cod Fishery Trawl-Caught Deliveries to Shoreside Processors, by Community of Shoreside Processor Operation, 2008-2018

Shoreside Processing Location	Measure of BSAI Trawl Catcher Vessel Fleet Participation 2008-2018	Catcher Vessels by Community of Ownership Address				TOTAL
		Kodiak	Newport OR	Seattle MSA	Other	
Adak	Annual Avg CVs	0.1	0.3	3.9	0.1	4.4
	Unique CVs	1	1	15	2	19
Akutan	Annual Avg CVs	1.3	6.4	11.7	0.1	19.5
	Unique CVs	4	9	22	4	39
King Cove	Annual Avg CVs	0.5	0.0	1.9	0.0	2.5
	Unique CVs	3	0	9	4	16
Sand Point	Annual Avg CVs	0.2	0.0	0.8	0.1	1.1
	Unique CVs	1	0	5	0	6
Unalaska/ Dutch Harbor*	Annual Avg CVs	1.4	1.1	8.7	3.5	14.6
	Unique CVs	6	2	31	3	42
Seattle/ IFPs**	Annual Avg CVs	2.0	6.1	22.6	0.4	31.1
	Unique CVs	4	12	35	5	56
TOTAL	Annual Avg CVs	3.5	7.4	30.5	3.6	44.9
	Unique CVs	7	9	47	5	68

*Includes the two shoreside entities shown in the dataset as operating in Anchorage that are known to have operated in Unalaska/Dutch Harbor

**Seattle is shown as the operating community for Inshore Floating Processors when the actual area of operation is not specified in the available

Source: NMFS Alaska Region Catch Accounting System, data compiled by AKFIN in Comprehensive_BLEND_CA

Table 45. Community of Ownership of Catcher Vessels Making BSAI Non-CDQ Directed Pacific Cod Fishery Trawl-Caught Deliveries to Catcher/Processors, 2008-2018

Catcher Processors Accepting BSAI Pacific Cod Trawl-Caught Deliveries by Community of Ownership Address	Measure of BSAI Trawl Catcher Vessel Fleet Participation 2008-2018	Catcher Vessels by Community of Ownership Address		TOTAL
		Seattle MSA	Other	
Seattle and Kirkland WA Combined	Annual Avg CVs	8.6	0.6	9.3
	Unique CVs	26	5	31

Source: NMFS Alaska Region Catch Accounting System, data compiled by AKFIN in Comprehensive_BLEND_CA

Table 46. Community of Ownership Address of Vessels with Catcher/Processor Endorsed LLP Licenses Functioning as Catcher Vessels and Making BSAI Non-CDQ Directed Pacific Cod Fishery Trawl-Caught Deliveries to Shoreside Processors, by Community of Shoreside Processor Operation, 2008-2018

Shoreside Processing Location	Measure of BSAI Trawl Catcher Vessel Fleet Participation 2008-2018	Catcher Vessels by Community of Ownership Address: All Communities Combined
Adak	Annual Avg CVs	2.0
	Unique CVs	5
Akutan	Annual Avg CVs	2.1
	Unique CVs	4
King Cove	Annual Avg CVs	0.2
	Unique CVs	1
Sand Point	Annual Avg CVs	0.1
	Unique CVs	1
Unalaska/Dutch Harbor (and Anchorage)*	Annual Avg CVs	1.2
	Unique CVs	3
Seattle/IFPs**	Annual Avg CVs	3.5
	Unique CVs	5
TOTAL	Annual Avg CVs	5.3
	Unique CVs	6

*The two entities shown in the dataset as operating in Anchorage are known to have operated in Unalaska/Dutch Harbor.

**Seattle is shown as the operating community for IFPs when the actual area of operation is not specified in the available dataset.

Source: NMFS Alaska Region Catch Accounting System, data compiled by AKFIN in Comprehensive_BLEND_CA

Table 47. Community of Ownership Address of Vessels with Catcher/Processor Endorsed LLP Licenses Functioning as Catcher Vessels and Making BSAI Non-CDQ Directed Pacific Cod Fishery Trawl-Caught Deliveries to Catcher/Processors, 2008-2018

Catcher Processors Accepting BSAI Pacific Cod Trawl-Caught Deliveries by Community of Ownership Address	Measure of BSAI Trawl Catcher Vessel Fleet Participation 2008-2018	Catcher Vessels by Community of Ownership Address: WA and OR Communities Combined
Seattle and Kirkland WA Combined	Annual Avg CVs	4.3
	Unique CVs	9

Source: NMFS Alaska Region Catch Accounting System, data compiled by AKFIN in Comprehensive_BLEND_CA

Table 48. Correspondence of Community of Vessel Ownership Address and Homeport of Catcher Vessels Participating in the BSAI Non-CDQ Directed Pacific Cod Trawl Fishery, 2018 (or most recent data year)

Community of Vessel Ownership Address	Homeport																			TOTAL	
	Anchorage AK	Homer AK	Juneau AK	Kodiak AK	Sand Point AK	Unalaska/Dutch Harbor AK	Newport OR*	Toledo OR*	Astoria OR	Portland OR	Edmonds WA**	Lakewood WA**	Seattle**	Woodinville WA**	Bellingham WA	Camas WA	Port Townsend WA	Ridgefield WA	South Bend WA		Rockland ME
Kodiak AK			1	5	1																7
Newport OR*				1			8		2												11
Siletz OR*							1														1
Keizer OR									1												1
Portland OR									1												1
Edmonds WA**													2								2
Lakewood WA**				1																	1
Seattle WA**	4		1	7		6	3										1				57
Shoreline WA**						1							2								3
Woodinville WA**													1								1
Bellingham WA															1						1
South Bend WA				1																	1
Rockland ME																					1
TOTAL	4	0	2	15	1	7	12	0	1	3	0	0	40	0	1	0	1	0	0	1	88

*Denotes communities within Lincoln County OR.

**Denotes communities within the Seattle MSA.

Bold red font in a cell designates a match between catcher vessel ownership address community and homeport community.

Note: Community of vessel ownership address (from CFEC data) and homeport location (from CFEC data) based on data from the most recent year of participation in the BSAI Pacific cod directed fishery.

Table 49. Correspondence of Community of Vessel Ownership Address and Community of LLP License Ownership Address of Catcher Vessels Participating in the BSAI Non-CDQ Directed Pacific Cod Trawl Fishery, 2018 (or most recent data year)

Community of Vessel Ownership Address	Community of LLP License Ownership Address																			TOTAL	
	Anchorage AK	Homer AK	Juneau AK	Kodiak AK	Sand Point AK	Unalaska/Dutch Harbor AK	Newport OR*	Toledo OR*	Astoria OR	Portland OR	Edmonds WA*	Lakewood WA*	Seattle**	Woodinville WA*	Bellingham WA	Camas WA	Port Townsend WA	Ridgefield WA	South Bend WA		Rockland ME
Kodiak AK		1		5			1														7
Newport OR*				1			6	2					1			1					11
Siletz OR*													1								1
Keizer OR													1								1
Portland OR										1											1
Edmonds WA**											2										2
Lakewood WA**												1									1
Seattle WA**											2		54						1		57
Shoreline WA**													3							1	3
Woodinville WA**													1								1
Bellingham WA															1						1
South Bend WA																			1		1
Rockland ME																				1	1
TOTAL	0	1	0	6	0	0	7	2	0	1	4	1	60	1	1	1	0	1	1	1	88

*Denotes communities within Lincoln County OR.

**Denotes communities within the Seattle MSA.

Bold red font in a cell designates a match between catcher vessel ownership address community and LLP license ownership address community.

Note: Community of vessel ownership address (from CFEC data) and community of LLP license ownership address (from FFP data) based on data from the most recent year of participation in the BSAI Pacific cod directed fishery.

Table 50. Correspondence of Community of Vessel Ownership Address and Homeport of Vessels with Catcher/Processor Endorsed LLP Licenses that Functioned as Catcher Vessels in the BSAI Non-CDQ Directed Pacific Cod Trawl Fishery, 2018 (or most recent data year)

Community of Vessel Ownership Address	Homeport						TOTAL
	Kodiak AK	Unalaska/ Dutch Harbor AK	Seattle WA*	Port Townsend WA	Newport OR	Rockland ME	
Seattle WA*	2	4	5	1			12
Shoreline WA*		1					1
Newport OR					1		1
Rockland ME						1	1
TOTAL	2	5	5	1	1	1	15

*Denotes communities within the Seattle MSA.

Bold red font in a cell designates a match between vessel ownership address community and homeport community.

Note: Community of LLP license ownership address matches community of vessel ownership address, except for vessel with Shoreline ownership address. In that case LLP license address is Seattle.

Note: Community of vessel ownership address (from CFEC data) and homeport location (from CFEC data) based on data from the most recent year of participation in the BSAI Pacific cod directed fishery.

Table 51. Correspondence of Community of Vessel Ownership Address and Homeport of Catcher/Processors that Accepted BSAI Non-CDQ Directed Pacific Cod Trawl Fishery Catcher Vessel Deliveries, 2018 (or most recent data year)

Community of Vessel Ownership Address	Homeport			TOTAL
	Kodiak AK	Unalaska/ Dutch Harbor AK	Seattle*	
Seattle*	1	2	3	6
Kirkland*			2	2
TOTAL	1	2	5	8

*Denotes communities within the Seattle MSA.

Bold red font in a cell designates a match between vessel ownership address community and homeport community.

Note: Community of LLP license ownership address matches community of vessel ownership address in all cases.

Note: Community of vessel ownership address (from CFEC data) and homeport location (from CFEC data) based on data from the most recent year of participation in the BSAI Pacific cod directed fishery.

Table 52. Correspondence of Community of Ownership Address of Catcher Vessels and Crew Residence Community, GOA Trawl Catcher Vessels Active in the BSAI Non-CDQ Directed Pacific Cod Trawl Fishery, 2016

Community of Catcher Vessel Crew Residence	Number of Crew Positions (CFEC Gear Operator Permit and ADFG Crew License Holders Combined)									
	Catcher Vessel Ownership Address Community									TOTAL
	Kodiak AK	Newport OR*	Siletz OR*	Toledo OR*	Edmonds WA**	Seattle WA**	Bellingham WA	Camas WA	South Bend WA	
Kodiak	28	5	2	4		21		4	2	66
Anchor Point	1									1
Anchorage	1		1		1	1				4
Kenai						1				1
Palmer						1		1		2
Petersburg						1				1
Sand Point					1					1
Seward						1				1
Soldotna	1									1
Wasilla			1	1						2
ALASKA SUBTOTAL	31	5	4	5	2	26	0	5	2	80
Lincoln County OR	3	5	11	2		17				38
All Other OR	4	5	4			7				20
OREGON SUBTOTAL	7	10	15	2	0	24	0	0	0	58
Seattle MSA	1			2		24	2		1	30
All Other WA				2		7	3	1	1	14
WASHINGTON SUBTOTAL	1	0	0	4	0	31	5	1	2	44
California	1				2	1				4
Florida	1					2				3
Illinois	1									1
Montana						1				1
OTHER STATES SUBTOTAL	3	0	0	0	2	4	0	0	0	9
Unknown/Unassigned	8		2	1	1	2	2			16
TOTAL	50	15	21	12	5	87	7	6	4	207

*Denotes communities within Lincoln County, Oregon

**Denotes communities within the Seattle MSA

Source: GOA trawl CV EDR data.

6 Community-Level Social Impacts by Alternative

This section provides a summary of potential community-level impacts by alternative, with the analysis of those impacts being driven by the National Standard 8 guidelines summarized in Section 3.4. Due to the nature of the purpose and need statement, several of the proposed management measure alternatives and options would inherently economically benefit some communities while adversely affecting others.

6.1 Community Engagement, Dependence, Vulnerability, and Risks to Fishing Community Sustained Participation in the GOA Trawl Fisheries

Community engagement (participation) in the BSAI non-CDQ directed Pacific cod trawl fishery was detailed in terms of the distribution of sectors across communities in Section 4.0 and by sectors within the context of individual communities in Section 5.0. Community dependency is influenced a number of factors described in both sections, including, but not limited to:

- the relative importance of the BSAI non-CDQ directed Pacific cod trawl fishery to vessels with community ownership addresses participating directly in the fishery in comparison to all area, species, and gear fisheries in which those same vessels participate (community BSAI non-CDQ directed Pacific cod trawl fishery catcher vessel diversity);
- the relative importance of the BSAI non-CDQ directed Pacific cod trawl fishery to all commercial fishing vessels with community ownership addresses participating in all area, species, and gear fisheries combined (community catcher vessel fleet diversity);
- the relative importance of BSAI non-CDQ directed Pacific cod fishery trawl-caught deliveries to shoreside processors participating directly in the BSAI trawl fisheries in comparison to deliveries from all area, species, and gear fisheries in which those same processors participate (community BSAI non-CDQ directed Pacific cod trawl fishery shoreside processor diversity);
- the relative importance of BSAI non-CDQ directed Pacific cod fishery trawl-caught deliveries to all shoreside processors operating in the community participating in all area, species, and gear fisheries combined (community shoreside processor diversity);
- the relative importance of BSAI non-CDQ directed Pacific cod fishery trawl-caught deliveries to catcher/processors acting as motherships in comparison to the rest of the activities pursued by those vessels (community catcher/processor/mothership diversity);
- the relative importance of BSAI non-CDQ directed Pacific cod fishery trawl-caught deliveries to catcher/processors acting as motherships in comparison to the rest of the activities pursued by all catcher/processors in the community (community catcher/processor fleet diversity);
- the relative importance of the locally active BSAI non-CDQ directed Pacific cod trawl fishery sectors within the larger community economic base both in terms of fishery support services/private sector business activity and public revenues, including tax revenues derived from fishing related revenue sources, such as local fish taxes and shared state fisheries business and resource landing taxes (community economic/public revenue diversity).

Vulnerability of communities to adverse community-level impacts from the proposed BSAI non-CDQ directed Pacific cod trawl fishery management revisions is in part a function of dependence of the

community on the potentially affected BSAI non-CDQ directed Pacific cod trawl fishery, the economic diversity of the community and the social and economic resilience of the community. Also important to potential adverse community-level impact outcomes is the specific nature of local engagement in the potentially affected BSAI non-CDQ directed Pacific cod trawl fishery related support sectors, and alternative employment, income, business, and public revenue opportunities available within the community as a result of the location, scale, and relative economic diversity of the community. At their most extreme, potential adverse impacts associated with a proposed action could present a risk to fishing community sustained participation in BSAI non-CDQ directed Pacific cod trawl fishery, with sustained participation defined, per National Standard 8, as continued access to the fishery within the constraints of the condition of the resource.

6.2 Alternative 1 (No Action Alternative)

Under Alternative 1, the “No Action” alternative, the existing trends of increases of Amendment 80 catcher/processors acting as motherships noted in the purpose and need statement could continue. These increases in participation have, in turn, resulted in an increase in the amount of Pacific cod delivered to Amendment 80 catcher/processors, an increase in the number of catcher vessels delivering Pacific cod to motherships, and a decrease in the amount of Pacific cod delivered to shoreside processing facilities. Council concerns expressed in the purpose and need statement about the impacts these changes could have on shoreside processors, communities, and participating catcher vessels, would not be addressed under Alternative 1.

Specifically, as noted in the RIR, Alternative 1 would leave shore-based and inshore floating processors susceptible to more declines in the percentage of the non-CDQ trawl catcher vessel sector allocation of Pacific cod that they currently receive. The percentage of the A-season BSAI non-CDQ trawl catcher vessel sector allocation delivered to shoreside processors was approximately 82.3 percent in 2018, the most recent year for which data are available, with the average over the 2015-2018 period being 94.8 percent. Earlier years cannot be presented due to confidentiality restrictions as it relates to the number of catcher/processors acting as motherships during those years. However, it may be inferred the percentage delivered to the shore-based and inshore floating processors were generally greater in earlier years.

In terms of community impacts, the continued decline of percentage of catcher vessel sector allocation of deliveries to shore-based processors under Alternative 1 would be most acutely felt in Unalaska/Dutch Harbor, Akutan, and King Cove. As shown in Table 16, the ex-vessel value of BSAI trawl Pacific cod deliveries at Unalaska/Dutch Harbor and Akutan shoreside plants combined accounted for between 3.4 percent and 4.3 percent of the annual total ex-vessel value of all deliveries (all species, gear, and area fisheries combined) over the 2015-2018 period. Analogous information for King Cove (or King Cove, Sand Point, and Adak combined) are not available for this period due to confidentiality constraints. While the percentages appear relatively modest for the Unalaska/Dutch Harbor and Akutan plants, in absolute terms they account for between \$8.6 million and \$10.5 million in ex-vessel value of deliveries each year over the 2015-2018 period, and the processing activity associated with these deliveries provides work for processing crews and throughput for the plants at different points in the annual processing cycle. Additionally, the economic activities associated with catcher vessels making shoreside deliveries to communities contribute to the vitality of the support services sectors in those communities, the scale and diversity of which varies widely by community.

According to industry sources contacted for this analysis, in terms of impacts to processing labor, impacts of a loss of historic share of deliveries, combined with declining total allowable catch (TAC) and a shortening of the A-season with increased race-for-fish pressure have created adverse employment and income impacts for processing workers. The response to these changes has varied by

operation and community. One firm that operates a shoreplant has reported that while the number of processing workers has not changed during A-season (due to the nature of worker contacts, the logistics involved, and the need to gear up the plant for other species running at the same time), the hours available to processing workers, especially overtime hours, has been diluted by the lower volumes and shorter seasons that have occurred in the last few years. This firm has also begun to contract with more tenders to allow catcher vessels to stay closer to the fishing grounds and increase their ability to retain as much market share as possible, but this has increased costs. Another firm reports that while the number of processing employees has not changed appreciably in the last few seasons, the hours available for those workers has decreased and they are sending seasonal hires home earlier than would be the case with a longer season. One firm that in years past has operated two inshore floating processors for Pacific cod processing during A-season reportedly only operates one at present, equating to the loss of a full Pacific cod season of employment for the employees on the platform no longer participating in the fishery. Varying degrees of automation and choices of product mix vary between the different processors, which also have an influence on the specific nature of processing worker employment and income effects at any given plant. Other concerns noted by shoreside plant management personnel with the race-for-fish conditions exacerbated by the trend of more landings moving offshore has been product quality, market supply issues, and worker safety as operational pace has increased.

Additionally, these shoreside deliveries generate public revenues in Unalaska/Dutch Harbor, Akutan, and King Cove from fishery related taxes and fees. While these communities derive public revenues from tax sources related to both shoreside and offshore processing activities, the relative contribution of the two sectors to local public revenues varies by community, as shown in Table 53. Among the tax revenue sources in the table, city raw fish taxes and state shared fishery business taxes are applied to landings at shoreside processors, while the state shared fishery resource landing tax is applied to landings from catcher/processors and motherships.

As shown in Table 53, public revenues from the state shared fishery resource landing tax generated in Akutan and King Cove are modest in relation to those generated by the local fish taxes and/or the state shared fisheries business tax within those communities⁵¹ as well as in relation to revenues generated by the state shared fisheries resource landing tax in Unalaska/Dutch Harbor. For Akutan and King Cove, a continued shift in BSAI non-CDQ directed Pacific cod fishery trawl-caught deliveries from local shoreside processors to catcher/processors acting as motherships would represent a close-to-complete loss of combined local and state fishery tax derived general fund revenues from those shifted deliveries.

In the case of Unalaska/Dutch Harbor, as shown in Table 53, on an annual average basis for fiscal years 2000-2017, local general fund revenues deriving from the state shared fishery resource landing tax were roughly half of those deriving from the local fish tax and the state shared fisheries business tax combined. While both sources of revenue are clearly substantial and important components of Unalaska/Dutch Harbor's general fund revenues on an ongoing basis, the loss of combined local fish tax and shared state fishery business fish tax revenues from BSAI non-CDQ directed Pacific cod fishery trawl-caught deliveries continuing to shift from Unalaska/Dutch Harbor shoreside processors

⁵¹ While revenues associated the local fish tax in King Cove are not separately disclosed, the amount of revenue derived from King Cove's local Business Impact Tax, applied only to the local shoreside processor, alone routinely exceeds revenues derived from the shared state fishery resource landing tax. The local fish tax revenues are proportionally more important in King Cove (and Akutan) relative to shared state fisheries business tax revenues than is the case in Unalaska/Dutch Harbor, due to state fishery business tax sharing guidelines. If processing occurs within an incorporated city, which is not located within an organized borough (like Unalaska/Dutch Harbor), 50 percent of the tax collected by the state is shared with the city; however, if processing occurs within an incorporated city, which is located within an organized borough (like Akutan and King Cove), 25 percent of the tax collected by the state is shared with the city and 25 percent of the tax is shared with the borough (in this case the AEB).

to catcher/processors acting as motherships would only be partially offset by increases in tax revenues related to state shared fishery resource landing taxes, assuming a pound-for-pound equivalence. As a result, continued erosion of the historic proportion of the trawl catcher vessel sector allocation of BSAI Pacific cod delivered to shoreside processors in Unalaska/Dutch Harbor under Alternative 1 would represent additional foregone fish landing tax related revenues to the community.

Table 53. Unalaska/Dutch Harbor, Akutan, and King Cove Summary of Selected Fishery Landing Tax Revenues as a Percentage Local and State Landing Tax Revenues, State Landing Tax Revenues, and City General Fund Revenues

Community (Fiscal Year Range)		Percent of Local and State Landing Tax Revenues		Percent of State Landing Tax Revenues		Percent of City General Fund Revenues			
		City Raw Fish Tax + State Shared Fishery Business Tax	State Shared Fisheries Resource Landing Tax	State Shared Fisheries Business Tax	State Shared Fisheries Resource Landing Tax	City Raw Fish Tax	State Shared Fisheries Business Tax	City Raw Fish Tax + State Shared Fishery Business Tax	State Shared Fisheries Resource Landing Tax
Unalaska/Dutch Harbor (2000-2017)	Annual Avg.	66.2%	33.8%	47.8%	52.2%	14.5%	12.5%	27.0%	13.9%
	High Year	75.2%	48.1%	57.5%	65.9%	19.3%	15.1%	34.4%	22.2%
	Low Year	51.9%	24.8%	34.1%	42.5%	11.6%	9.4%	21.9%	9.5%
Akutan (2011-2014 and 2016-2017)	Annual Avg.	93.4%	6.6%	84.3%	15.7%	47.0%	28.6%	75.5%	5.3%
	High Year	94.9%	9.8%	88.5%	22.2%	56.8%	33.7%	82.3%	7.9%
	Low Year	90.2%	5.1%	77.8%	11.5%	42.3%	24.7%	70.9%	4.4%
King Cove (2000-2017)	Annual Avg.	Unavailable	Unavailable	91.3%	8.7%	Unavailable	17.4%	Unavailable	1.6%
	High Year	Unavailable	Unavailable	93.1%	11.4%	Unavailable	29.5%	Unavailable	2.3%
	Low Year	Unavailable	Unavailable	88.6%	6.9%	Unavailable	11.1%	Unavailable	0.9%

Source: See Tables 21, 22, 27, 28, 33, and 34.

As described in Section 6.3.2 (the impacts of Alternative 3 discussion) however, the situation is made more complicated by differential patterns of shoreside and offshore landings across the three communities. For example, in 2018, the most recent year for which data are available, Unalaska/Dutch Harbor and Akutan combined received approximately 36 percent of the total volume of BSAI non-CDQ directed Pacific cod landings delivered ashore by catcher vessels. In contrast, in 2017, the most recent year for which data are available, Unalaska/Dutch Harbor and Akutan combined received approximately 98 percent of the total volume of BSAI non-CDQ directed Pacific cod brought into state waters (for transshipment) by catcher/processors.

The communities that would presumably benefit from the continuation of existing trends, as determined by community of ownership address for relevant catcher/processors acting as motherships, would be communities in the Seattle MSA (see Table 11). The BSAI non-CDQ Pacific cod fishery catcher vessel trawl-caught deliveries to catcher/processors acting as motherships also provide employment and income for operational and processing crew. In other words, from a community impact perspective, under Alternative 1, as under the other alternatives being considered, proposed management actions (or in this case inaction) would effectively function as an allocation mechanism that would economically benefit some communities while adversely affecting others.

6.3 Alternatives 2, 3, and 4

Alternatives 2, 3, and 4 address the catcher/processor/mothership restrictions in the BSAI and GOA components of the proposed management alternatives through different approaches. Under each of these alternatives, proposed management measures would economically benefit some communities while adversely affecting others. These differences in outcomes would be based on the differential forms of engagement in the fishery through locally active or otherwise community-based sectors and

the relative intensity of engagement in and dependency on the fishery through the constellation of sector involvement unique to individual communities. To the extent that these alternatives, separately or in combination, permanently address the erosion of the historic proportion of the trawl catcher vessel sector allocation of BSAI Pacific cod delivered to shoreside processors, these alternatives would have potentially long-term impacts on communities. The efficacy of these alternatives to do so is difficult to determine. In general, however, if these alternatives function as intended, positive economic and social benefits should accrue to engaged Alaska communities as a group and especially to the communities of Unalaska/Dutch Harbor, Akutan, and King Cove, i.e., those Alaska communities substantially engaged in and/or substantially dependent on the shoreside processing of BSAI non-CDQ targeted Pacific cod catcher vessel trawl-caught deliveries. Conversely, adverse impacts would accrue to communities in the Pacific Northwest substantially engaged in and/or substantially dependent on the catcher/processor processing of BSAI non-CDQ targeted Pacific cod catcher vessel trawl-caught deliveries.

Given the number of permutations of alternatives and options described in the RIR, it was determined to not be feasible to generate a quantitative analysis of likely outcomes for each combination of alternatives and options, rather, a range or bookend approach was used. As noted in the Section 2.7.3 of the RIR, it is possible to estimate the change in real first wholesale value of Pacific cod products from moving one percent of the Bering Sea portion of the BSAI trawl catcher vessel sector allocation between shoreside and at-sea processing. As described in that discussion, for the years 2018 through 2026, the overall net change in value/direct economic benefit would vary between approximately \$3,000 and \$5,000 in any given year during that period. The first wholesale value of 1 percent of the catcher vessel sector allocation delivered shoreside would be vary between roughly \$180,000 per year and \$290,000 per year, while the first wholesale value of 1 percent of the catcher vessel sector allocation delivered to catcher/processors acting as motherships would be vary between roughly \$178,000 per year and \$333,000 per year over this same period. While this gives an understanding of the order of magnitude of the values involved, it is not clear how much of a shift would occur under all of the different combinations of alternatives and options across these three alternatives.

Further, while these revenues were likely a relatively modest proportion of overall processing first wholesale gross revenues for Unalaska/Dutch Harbor, Akutan, and King Cove shoreside processors as a group, it is important to note that (1) these revenues likely varied considerably from year to year and may have been substantial in absolute terms at least some years, (2) the timing of this processing may have been important to the operational flow of the plant and provided an important source of labor hours for processing staff, and (3) the processing of BSAI non-CDQ directed Pacific cod fishery trawl-caught deliveries in these communities may have been (and may continue to be) strategically important to the overall operations of one or more processors looking to continuing access, or potential future access, to BSAI non-CDQ directed Pacific cod fishery trawl-caught deliveries as important to maintaining a desired flexibility and diversity of operations, and to maintaining mutually beneficial relationships with some of its delivery fleet that participated in other fisheries with the plant.

6.3.1 Alternative 2

Alternative 2 would limit the number of certain catcher/processors acting as motherships (all of which have ownership ties to the Seattle MSA, as shown in Table 11), but it would not limit the number of catcher vessels (with a broader community ownership base, including primarily the Seattle MSA, Newport, Oregon, and Kodiak, Alaska) that could make BSAI non-CDQ directed Pacific cod trawl deliveries to those catcher/processors, nor does it limit the percentage of the BSAI non-CDQ directed Pacific cod catcher vessel trawl sector allocation that could be delivered to those catcher/processors (or other vessels that acted as motherships in the fishery). Adverse community impacts of this alternative driven by one or more catcher/processors not qualifying under the Alternative 2 options

would primarily accrue to the Seattle MSA area, but it is understood that the relevant catcher/processors provide employment and earnings opportunities to crew members from a wide geographic area. Further, these vessels also provide business opportunities for support service entities in Alaska ports, notably Unalaska/Dutch Harbor. Three of the eight relevant catcher/processors have Alaska homeport designations (Unalaska/Dutch Harbor [2] and Kodiak [1]) that may or may not be in part reflective of the relative amount of time or relative level activities of those vessels in those versus other Alaska ports. The shared revenues derived from the state resource landing tax associated with BSAI catcher/processors that would potentially be limited by this alternative also provide an important source of public revenues, especially for Unalaska/Dutch Harbor, as described in the Alternative 3 discussion (Section 6.3.2).

As shown in Table 41, the large majority of catcher vessels making Bering Sea (as opposed to BSAI) non-CDQ directed Pacific cod fishery trawl-caught deliveries to catcher/processors acting as motherships over the period 2008-2018 (16 out of 19, or 84 percent of the unique catcher vessels involved) have Seattle MSA ownership addresses. Vessels with ownership addresses in communities other than the Seattle MSA only appear in 2016-2018,⁵² with the overall number of catcher vessels delivering per year generally increasing over time from 2 or fewer catcher vessels per year making deliveries annually 2008-2011 to 7, 10, and 11 catcher vessels making deliveries in 2016, 2017, and 2018, respectively.

Table 54 provides information on catcher vessels that made BSAI non-CDQ directed Pacific cod trawl-caught deliveries exclusively to catcher/processors acting as motherships, 2008-2018, by community of ownership address and year. It is assumed that these catcher vessels would be at risk for losing a potential market for their catch if the catch-processor(s) they have delivered to were limited under one or more of the Alternative 2, Option 1 suboptions. As shown, of the eight relevant catcher vessels, only two made at least some of their deliveries over this period to catcher/processors that would not qualify under all of the suboptions (i.e., catcher vessels #5 and #6, both of which have Seattle ownership addresses, made deliveries to at least one catcher/processor that would not qualify under suboption 1.3). That is not to say that all of the other catcher vessels would not be impacted under Alternative 2, as (1) some of their historic deliveries may have been made to catcher/processors that would not qualify under one or more of the suboptions and/or (2) some of their historic markets may no longer be available to them.

Table 54. Catcher Vessels That Made BSAI Non-CDQ Directed Pacific Cod Trawl-Caught Deliveries Exclusively to Catcher/Processors Acting as Motherships, 2008-2018, by Community of Ownership Address and Year

Catcher Vessel	Catcher Vessel Community of Ownership Address	Years Deliveries Were Made									Total Years Deliveries Made	At Least Some Deliveries to CPs Qualifying Under Alt 2, Option 1, Suboptions 1-3				
		2008	2009	2010	2011	2012	2013	2014	2015	2016		2017	2018	1.1	1.2	1.3
Catcher Vessel #1	Seattle												11	Y	Y	Y
Catcher Vessel #2	Seattle												10	Y	Y	Y
Catcher Vessel #3	Seattle												7	Y	Y	Y
Catcher Vessel #4	Seattle												6	Y	Y	Y
Catcher Vessel #5	Seattle												3	Y	Y	N
Catcher Vessel #6	Seattle												2	Y	Y	N
Catcher Vessel #7	Kodiak												1	Y	Y	Y
Catcher Vessel #8	Oregon*												1	Y	Y	Y

*Specific community suppressed to preserve confidentiality

Table 55 provides information on catcher vessels that made BSAI non-CDQ directed Pacific cod trawl-caught deliveries to both catcher/processors acting as motherships and other processors, 2008-

⁵² One or more deliveries were made by one vessel with a Kodiak ownership address in 2016 and 2017, while one catcher vessel with an ownership address other than Kodiak, Newport, or Seattle made one or more deliveries in 2018.

2018, by processor type, community of catcher vessel ownership address, and year. It is assumed that these catcher vessels would also be at risk for losing a potential market for their catch if the catcher-processor(s) they have delivered to were limited under one or more of the Alternative 2, Option 1 suboptions. As shown, of the 23 relevant catcher vessels, 11 made at least some of their deliveries over this period to catcher/processors that would not qualify under all of the suboptions (i.e., they made deliveries to at least one catcher/processor that would not qualify under suboption 3). Of the 11 catcher vessels that made at least some deliveries to catcher/processors that would not qualify under suboption 1.3, all have ownership addresses in Seattle, except for one catcher vessel with a Newport ownership address. The other catcher vessels with ownership addresses outside of the Seattle MSA (i.e., two catcher vessels with Kodiak ownership addresses and one with a Newport ownership address) made at least some of their deliveries to catcher/processors that would qualify under all of the suboptions.

Also as shown in Table 55, the percentage of total pounds of Pacific cod delivered to catcher/processors acting as motherships compared to other types of processors varied widely, with 13 of the 23 having less than 10 percent of their delivered poundage going to catcher/processors acting as motherships, and only one having over 50 percent of their delivered poundage going to catcher/processors acting as motherships. It is important to note some of the catcher vessels historically most reliant on deliveries to catcher-processors acting as motherships are identified on the company websites as being owned by the same firm that owns the catcher/processor(s) that have accepted those deliveries. Further, as with the catcher vessels discussed in the previous table, catcher vessels that made at least some of their deliveries to catcher/processors that acted as motherships that would qualify under all of the Alternative 2 suboptions could still be impacted under Alternative 2, as (1) some of their historic deliveries may have been made to catcher/processors that would not qualify under one or more of the suboptions and/or (2) not all of their historic markets may remain available to them.

Table 55. Catcher Vessels That Made BSAI Non-CDQ Directed Pacific Cod Trawl-Caught Deliveries to Catcher/Processors Acting as Motherships and Other Processors, 2008-2018, by Processor Type, Community of Catcher Vessel Ownership Address, and Year

Catcher Vessel	Catcher Vessel Community of Ownership Address	Years Deliveries Were Made by Processor Type											Number of Years Deliveries Were Made			Landings to CPs Acting as MSs as a % of total lbs BSAI Pcod landed 2008-2018	At Least Some Deliveries to:			
		2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	To CPs Acting as MSs Only	To Both CPs Acting as MSs and Other Processors	To Other Processors Only		Total	CPs Qualifying Under Alt 2, Option 1.1	CPs Qualifying Under Alt 2, Option 1.2	CPs Qualifying Under Alt 2, Option 1.3
Catcher Vessel #1	Seattle	BOTH		CP ONLY	BOTH				NO CP	BOTH	CP ONLY	CP ONLY	3	3	1	7	>50%	Y	Y	Y
Catcher Vessel #2	Seattle	BOTH	NO CP	NO CP	BOTH	BOTH	BOTH	BOTH	BOTH	BOTH	CP ONLY	CP ONLY	2	7	2	11	25-50%	Y	Y	Y
Catcher Vessel #3	Seattle	NO CP	NO CP	CP ONLY	BOTH	BOTH	NO CP	NO CP	BOTH	NO CP	NO CP	NO CP	1	3	7	11	25-50%	Y	Y	N
Catcher Vessel #4	Seattle	NO CP	NO CP	NO CP	BOTH	BOTH	NO CP	NO CP	NO CP	BOTH	NO CP	NO CP	0	3	8	11	25-50%	Y	Y	N
Catcher Vessel #5	Seattle	NO CP	NO CP	NO CP	BOTH	BOTH	BOTH	NO CP		CP ONLY	CP ONLY	CP ONLY	3	3	4	10	25-50%	Y	Y	N
Catcher Vessel #6	Seattle	NO CP	NO CP	NO CP	CP ONLY	BOTH	BOTH	NO CP		CP ONLY	CP ONLY	NO CP	3	2	5	10	25-50%	Y	Y	Y
Catcher Vessel #7	Seattle	NO CP	NO CP		NO CP	NO CP	NO CP	NO CP	NO CP	CP ONLY	BOTH		1	1	7	9	25-50%	Y	Y	N
Catcher Vessel #8	Seattle	NO CP	NO CP	NO CP	BOTH	BOTH				CP ONLY	CP ONLY	BOTH	2	3	3	8	25-50%	Y	Y	Y
Catcher Vessel #9	Other Seattle MSA*	NO CP	BOTH	NO CP	NO CP	BOTH	NO CP	NO CP		NO CP	NO CP	BOTH	0	3	7	10	10-25%	Y	Y	Y
Catcher Vessel #10	Seattle	NO CP	NO CP	NO CP		NO CP				NO CP	CP ONLY	NO CP	1	0	6	7	10-25%	Y	Y	N
Catcher Vessel #11	Seattle	BOTH	NO CP	NO CP	NO CP	BOTH	NO CP	NO CP	NO CP	BOTH	NO CP		0	3	7	10	< 10%	Y	Y	Y
Catcher Vessel #12	Seattle	NO CP	NO CP	NO CP		NO CP	NO CP	NO CP	NO CP	BOTH	BOTH	NO CP	0	2	7	9	< 10%	Y	Y	Y
Catcher Vessel #13	Seattle	NO CP	BOTH	NO CP	NO CP	NO CP							0	1	4	5	< 10%	Y	Y	Y
Catcher Vessel #14	Seattle	NO CP	NO CP							NO CP	BOTH	NO CP	0	1	4	5	< 10%	Y	Y	N
Catcher Vessel #15	Kodiak				NO CP	NO CP					BOTH	NO CP	0	1	3	4	< 10%	Y	Y	Y
Catcher Vessel #16	Newport	BOTH		NO CP						NO CP			0	1	2	3	< 10%	Y	Y	N
Catcher Vessel #17	Seattle	BOTH	NO CP	NO CP									0	1	2	3	< 10%	Y	Y	Y
Catcher Vessel #18	Seattle	NO CP	NO CP	NO CP	NO CP	NO CP	NO CP	NO CP	NO CP	NO CP	BOTH	BOTH	0	2	9	11	< 5%	Y	Y	N
Catcher Vessel #19	Newport	NO CP	NO CP	NO CP	NO CP	BOTH	NO CP	NO CP	NO CP	BOTH	NO CP	NO CP	0	2	9	11	< 5%	Y	Y	Y
Catcher Vessel #20	Seattle	NO CP	NO CP	NO CP	NO CP	NO CP	NO CP	NO CP	NO CP	BOTH	NO CP	NO CP	0	1	10	11	< 5%	Y	Y	N
Catcher Vessel #21	Seattle	NO CP	NO CP	NO CP	BOTH	NO CP	NO CP	NO CP	0	1	10	11	< 5%	Y	Y	N				
Catcher Vessel #22	Seattle	NO CP	NO CP			NO CP	BOTH	NO CP	0	1	8	9	< 5%	Y	Y	N				
Catcher Vessel #23	Kodiak	NO CP			NO CP	NO CP			NO CP	BOTH	CP ONLY		1	1	4	6	< 5%	Y	Y	Y

*Specific community suppressed to preserve confidentiality

Abbreviation Key: CP ONLY = Year in which BSAI non-CDQ directed Pacific cod trawl deliveries were made exclusively to catcher-processors acting as motherships
 BOTH = Year in which BSAI non-CDQ directed Pacific cod trawl deliveries were made to both catcher-processors acting as motherships and other types of processors
 NO CP = Year in which BSAI non-CDQ directed Pacific cod trawl deliveries were made exclusively to processors other than catcher-processors acting as motherships

6.3.2 Alternative 3

It is important to note that while Alternative 3 would establish a maximum percentage of the Bering Sea portion of the BSAI non-CDQ directed Pacific cod catcher vessel trawl sector allocation that could be delivered to catcher/processors when acting as motherships (i.e., it would establish a single/common sideboard based on the aggregate histories of Amendment 80 and AFA catcher/processors receiving deliveries), it does not establish how much of that sideboard amount would actually be delivered to those vessels, nor would it limit the number of catcher vessels that could make BSAI non-CDQ directed Pacific cod trawl deliveries to those catcher/processors. Further, it does not limit the percentage of the BSAI non-CDQ directed Pacific cod catcher vessel trawl sector allocation that could be delivered to processing vessels other than AFA and Amendment 80 catcher/processors acting as motherships (i.e., it does not guarantee that a certain percentage of the BSAI non-CDQ directed Pacific cod catcher vessel trawl sector allocation would be delivered to shoreside processors). In general, the pattern of differential distribution of impacts across communities would be similar to that described for Alternative 2.

The following series of tables examines a range of estimated changes in selected Alaska raw fish tax revenues associated with a one percent shift of catcher vessel trawl sector Bering Sea non-CDQ Pacific cod ITAC (less the 5,000 metric ton [mt] set-aside discussed in detail in the RIR to which this SIA is appended) to shoreside processors or catcher/processors acting as motherships. These tables vary based on a range of assumptions regarding ex-vessel value per mt and the number of mt that would represent a one percent shift.

Table 56 provides background information on raw fish tax rates or their equivalents for relevant Alaska communities, boroughs, and the state itself. Table 57 then provides information on the estimated changes using the assumptions of ex-vessel value of Pacific cod equaling \$667.00 per mt (the reported value for 2017, the most recent year for which data are available) and a one percent shift equaling 126 mt (the estimated 2023 Bering Sea ITAC, less the 5,000 mt ton set-aside, which is approximately the mid-point of projected guideline harvest level increases in the state water fishery over the years 2019-2026).

Table 58 and Table 59 represent a set of high and low bookend assumptions for ex-vessel value, at \$1,000/mt and \$500/mt, respectively, which approximate the ends of the historic range of ex-vessel values 2009-2017 (in 2010 dollars). Both tables assume that a one percent shift would equal 126 mt (consistent with Table 57).

Table 60 and Table 61 similarly represent a set of high and low bookend assumptions for ex-vessel value, at \$1,000/mt and \$500/mt, respectively. In this case, however, these two tables assume that a one percent shift would equal 120 mt, which is the 2026 estimated Bering Sea portion of the trawl catcher vessel sector allocation (i.e., the most distant year of estimates made).

Finally, Table 62 and Table 63, consistent with the other tables in this series, represent a set of high and low bookend assumptions for ex-vessel value, at \$1,000/mt and \$500/mt, respectively. For these two tables the assumption is made that a one percent shift would equal 225 mt, which represents the 2018 total allowable catch, the year with the largest Bering Sea Pacific cod TAC (historic and projected) over the 2018 through 2026 period.

Table 56. Raw Fish Tax Rates or Equivalents for Relevant Alaska Communities, Boroughs, and the State

Communities	Percentage of Ex-Vessel Value Received by Communities, Boroughs, and the State of Alaska as Revenue from Raw Fish Taxes from Catcher Vessel Deliveries in that Geography								Percentage of Ex-Vessel Value Received by Communities, Boroughs, and the State of Alaska as Revenue from Catcher Vessel Deliveries to Catcher Processors Subsequently Landed by CPs for Transshipment in that Geography			
	Communities			Aleutians East Borough			Alaska	Grand	Cities	AEB	Alaska	Grand
	CRFT	SSFBT	Total	BRFT	SSFBT	Total	SSFBT	Total	SSRLT	SSRLT	SSRLT	Total
Adak	2.00%	1.50%	3.50%	n/a	n/a	n/a	1.50%	5.00%	1.50%	n/a	1.50%	3.00%
Sand Point	2.00%	0.75%	2.75%	2.00%	0.75%	2.75%	1.50%	7.00%	0.75%	0.75%	1.50%	3.00%
King Cove	2.00%	0.75%	2.75%	2.00%	0.75%	2.75%	1.50%	7.00%	0.75%	0.75%	1.50%	3.00%
Akutan	1.50%	0.75%	2.25%	2.00%	0.75%	2.75%	1.50%	6.50%	0.75%	0.75%	1.50%	3.00%
Unalaska/Dutch Harbor	2.00%	1.50%	3.50%	n/a	n/a	n/a	1.50%	5.00%	1.50%	n/a	1.50%	3.00%
IFPs/MSs/Seattle*	unknown	unknown	unknown	unknown	unknown	unknown	unknown	5.00%	n/a	n/a	n/a	n/a

*No operation location data are available for these IFPs and MSs with Seattle ownership addresses. To be conservative, overall tax rate was estimated at 5.00% , but would vary based on actual operational location.

Abbreviations: CRFT = City Raw Fish Tax; SSFBT = State Shared Fisheries Business Tax; BRFT = Borough Raw Fish Tax; SSRLT = State Shared Resource Landing Tax.

Table 57. Estimated Changes in Selected Alaska Raw Fish Tax Revenues Associated with a 1 Percent Shift of the Catcher Vessel Trawl Sector Bering Sea Non-CDQ Pacific Cod ITAC (less the 5,000 mt set-aside) to Shoreside Processors or Catcher/Processors Acting as Motherships if Ex-Vessel Value = \$667/mt (2017 - the most recent year of reported ex-vessel values) and 1% = 126mt (estimated 2023 Bering Sea ITAC less 5,000 mt set-aside - the mid-point of the projected GHL increases)

Community Groupings	Tax Revenue Value to Alaska Communities, Boroughs, and the State from 1 mt of Pacific Cod Delivered to Shoreside Processors and 1% Shift of CV Trawl Sector Allocation of BSAI Pcod to Deliveries to Shoreside Processors							Tax Revenue Value to Alaska Communities, Boroughs, and the State from 1 mt of Pacific Cod Delivered to CPs Acting as MSs and 1% Shift of CV Trawl Sector Allocation of BSAI Pcod to Deliveries to CPs Acting as MSs				
	Groups of Communities			Aleutians East Borough			Alaska	Grand	Cities	AEB	Alaska	Grand
	CRFT	SSFBT	Total	BRFT	SSFBT	Total	SSFBT	Total	SSRLT	SSRLT	SSRLT	Total
Adak/Sand Point/King Cove	\$3.56	\$2.18	\$5.73	c	c	c	c	\$10.21	\$0.17	c	c	\$0.34
Akutan/Unalaska/Dutch Harbor	\$5.43	\$3.53	\$8.96	c	c	c	c	\$17.59	\$9.82	c	c	\$21.17
IFPs/MSs/Seattle	unknown	unknown	unknown	unknown	unknown	unknown	unknown	\$7.74	n/a	n/a	n/a	n/a
Tax Revenue (per mt)	\$8.99	\$5.70	\$14.70	\$4.22	\$1.58	\$5.81	\$7.29	\$35.54	\$9.99	\$0.76	\$10.75	\$21.50
Tax Revenue (from 1% shift)	\$1,132.83	\$718.78	\$1,851.61	\$532.28	\$199.60	\$731.88	\$918.38	\$4,477.47	\$1,258.46	\$96.36	\$1,354.82	\$2,709.61

Abbreviations: CRFT = City Raw Fish Tax; SSFBT = State Shared Fisheries Business Tax; BRFT = Borough Raw Fish Tax; SSRLT = State Shared Resource Landing Tax; c = confidential data suppressed.
 Note (1): Shoreside community distribution pattern based on 2018 (most recent year available) landings data (22.66% to Adak/Sand Point/King Cove; 46.19% to Akutan/Unalaska/Dutch Harbor; 27.15% to IFPs/MSs/Seattle).
 Note (2): CPs acting as MSs community distribution pattern based on 2017 (most recent year available) state tax data (1.70% to Adak/Sand Point/King Cove; 98.19% to Akutan/Unalaska/Dutch Harbor).

Table 58. Estimated Changes in Selected Alaska Raw Fish Tax Revenues Associated with a 1 Percent Shift of the Catcher Vessel Trawl Sector Bering Sea Non-CDQ Pacific Cod ITAC (less the 5,000 mt set-aside) to Shoreside Processors or Catcher/Processors Acting as Motherships if Ex-Vessel Value = \$500/mt (low bookend) and 1% = 126mt (estimate of average of future sector allocation)

Community Groupings	Tax Revenue Value to Alaska Communities, Boroughs, and the State from 1 mt of Pacific Cod Delivered to Shoreside Processors and 1% Shift of CV Trawl Sector Allocation of BSAI Pcod to Deliveries to Shoreside Processors							Tax Revenue Value to Alaska Communities, Boroughs, and the State from 1 mt of Pacific Cod Delivered to CPs Acting as MSs and 1% Shift of CV Trawl Sector Allocation of BSAI Pcod to Deliveries to CPs Acting as MSs				
	Groups of Communities			Aleutians East Borough			Alaska	Grand	Cities	AEB	Alaska	Grand
	CRFT	SSFBT	Total	BRFT	SSFBT	Total	SSFBT	Total	SSRLT	SSRLT	SSRLT	Total
Adak/Sand Point/King Cove	\$2.67	\$1.63	\$4.30	c	c	c	c	\$7.65	\$0.13	c	c	\$0.25
Akutan/Unalaska/Dutch Harbor	\$4.07	\$2.65	\$6.72	c	c	c	c	\$13.18	\$7.36	c	c	\$15.87
IFPs/MSs/Seattle	unknown	unknown	unknown	unknown	unknown	unknown	unknown	\$5.80	n/a	n/a	n/a	n/a
Tax Revenue (per mt)	\$6.74	\$4.28	\$11.02	\$3.17	\$1.19	\$4.35	\$5.46	\$26.64	\$7.49	\$0.57	\$8.06	\$16.12
Tax Revenue (from 1% shift)	\$849.19	\$538.82	\$1,388.01	\$399.01	\$149.63	\$548.63	\$688.44	\$3,356.42	\$943.37	\$72.23	\$1,015.61	\$2,031.19

Abbreviations: CRFT = City Raw Fish Tax; SSFBT = State Shared Fisheries Business Tax; BRFT = Borough Raw Fish Tax; SSRLT = State Shared Resource Landing Tax; c = confidential data suppressed.

Note (1): Shoreside community distribution pattern based on 2018 (most recent year available) landings data (22.66% to Adak/Sand Point/King Cove; 46.19% to Akutan/Unalaska/Dutch Harbor; 27.15% to IFPs/MSs/Seattle).

Note (2): CPs acting as MSs community distribution pattern based on 2017 (most recent year available) state tax data (1.70% to Adak/Sand Point/King Cove; 98.19% to Akutan/Unalaska/Dutch Harbor).

Table 59. Estimated Changes in Selected Alaska Raw Fish Tax Revenues Associated with a 1 Percent Shift of the Catcher Vessel Trawl Sector Bering Sea Non-CDQ Pacific Cod ITAC (less the 5,000 mt set-aside) to Shoreside Processors or Catcher/Processors Acting as Motherships if Ex-Vessel Value = \$1,000/mt (high bookend) and 1% = 126mt (estimate of average of future sector allocation)

Community Groupings	Tax Revenue Value to Alaska Communities, Boroughs, and the State from 1 mt of Pacific Cod Delivered to Shoreside Processors and 1% Shift of CV Trawl Sector Allocation of BSAI Pcod to Deliveries to Shoreside Processors							Tax Revenue Value to Alaska Communities, Boroughs, and the State from 1 mt of Pacific Cod Delivered to CPs Acting as MSs and 1% Shift of CV Trawl Sector Allocation of BSAI Pcod to Deliveries to CPs Acting as MSs				
	Groups of Communities			Aleutians East Borough			Alaska	Grand	Cities	AEB	Alaska	Grand
	CRFT	SSFBT	Total	BRFT	SSFBT	Total	SSFBT	Total	SSRLT	SSRLT	SSRLT	Total
Adak/Sand Point/King Cove	\$5.33	\$3.26	\$8.59	c	c	c	c	\$15.30	\$0.25	c	c	\$0.51
Akutan/Unalaska/Dutch Harbor	\$8.15	\$5.29	\$13.44	c	c	c	c	\$26.37	\$14.72	c	c	\$31.73
IFPs/MSs/Seattle	unknown	unknown	unknown	unknown	unknown	unknown	unknown	\$11.61	n/a	n/a	n/a	n/a
Tax Revenue (per mt)	\$13.48	\$8.55	\$22.03	\$6.33	\$2.38	\$8.71	\$10.93	\$53.28	\$14.97	\$1.15	\$16.12	\$32.24
Tax Revenue (from 1% shift)	\$1,698.39	\$1,077.63	\$2,776.02	\$798.01	\$299.26	\$1,097.27	\$1,376.89	\$6,712.85	\$1,886.75	\$144.46	\$2,031.21	\$4,062.38

Abbreviations: CRFT = City Raw Fish Tax; SSFBT = State Shared Fisheries Business Tax; BRFT = Borough Raw Fish Tax; SSRLT = State Shared Resource Landing Tax; c = confidential data suppressed.
 Note (1): Shoreside community distribution pattern based on 2018 (most recent year available) landings data (22.66% to Adak/Sand Point/King Cove; 46.19% to Akutan/Unalaska/Dutch Harbor; 27.15% to IFPs/MSs/Seattle).
 Note (2): CPs acting as MSs community distribution pattern based on 2017 (most recent year available) state tax data (1.70% to Adak/Sand Point/King Cove; 98.19% to Akutan/Unalaska/Dutch Harbor).

Table 60. Estimated Changes in Selected Alaska Raw Fish Tax Revenues Associated with a 1 Percent Shift of the Catcher Vessel Trawl Sector Bering Sea Non-CDQ Pacific Cod ITAC (less the 5,000 mt set-aside) to Shoreside Processors or Catcher/Processors Acting as Motherships if Ex-Vessel Value = \$500/mt (low bookend) and 1% = 120mt (2026 estimate Bering Sea portion of trawl catcher vessel sector allocation)

Community Groupings	Tax Revenue Value to Alaska Communities, Boroughs, and the State from 1 mt of Pacific Cod Delivered to Shoreside Processors and 1% Shift of CV Trawl Sector Allocation of BSAI Pcod to Deliveries to Shoreside Processors							Tax Revenue Value to Alaska Communities, Boroughs, and the State from 1 mt of Pacific Cod Delivered to CPs Acting as MSs and 1% Shift of CV Trawl Sector Allocation of BSAI Pcod to Deliveries to CPs Acting as MSs				
	Groups of Communities			Aleutians East Borough			Alaska	Grand	Cities	AEB	Alaska	Grand
	CRFT	SSFBT	Total	BRFT	SSFBT	Total	SSFBT	Total	SSRLT	SSRLT	SSRLT	Total
Adak/Sand Point/King Cove	\$2.67	\$1.63	\$4.30	c	c	c	c	\$7.65	\$0.13	c	c	\$0.25
Akutan/Unalaska/Dutch Harbor	\$4.07	\$2.65	\$6.72	c	c	c	c	\$13.18	\$7.36	c	c	\$15.87
IFPs/MSs/Seattle	unknown	unknown	unknown	unknown	unknown	unknown	unknown	\$5.80	n/a	n/a	n/a	n/a
Tax Revenue (per mt)	\$6.74	\$4.28	\$11.02	\$3.17	\$1.19	\$4.35	\$5.46	\$26.64	\$7.49	\$0.57	\$8.06	\$16.12
Tax Revenue (from 1% shift)	\$808.76	\$513.16	\$1,321.91	\$380.01	\$142.50	\$522.51	\$655.66	\$3,196.59	\$898.45	\$68.79	\$967.24	\$1,934.47

Abbreviations: CRFT = City Raw Fish Tax; SSFBT = State Shared Fisheries Business Tax; BRFT = Borough Raw Fish Tax; SSRLT = State Shared Resource Landing Tax; c = confidential data suppressed.
 Note (1): Shoreside community distribution pattern based on 2018 (most recent year available) landings data (22.66% to Adak/Sand Point/King Cove; 46.19% to Akutan/Unalaska/Dutch Harbor; 27.15% to IFPs/MSs/Seattle).
 Note (2): CPs acting as MSs community distribution pattern based on 2017 (most recent year available) state tax data (1.70% to Adak/Sand Point/King Cove; 98.19% to Akutan/Unalaska/Dutch Harbor).

Table 61. Estimated Changes in Selected Alaska Raw Fish Tax Revenues Associated with a 1 Percent Shift of the Catcher Vessel Trawl Sector Bering Sea Non-CDQ Pacific Cod ITAC (less the 5,000 mt set-aside) to Shoreside Processors or Catcher/Processors Acting as Motherships if Ex-Vessel Value = \$1,000/mt (high bookend) and 1% = 120mt (2026 estimate Bering Sea portion of trawl catcher vessel sector allocation)

Community Groupings	Tax Revenue Value to Alaska Communities, Boroughs, and the State from 1 mt of Pacific Cod Delivered to Shoreside Processors and 1% Shift of CV Trawl Sector Allocation of BSAI Pcod to Deliveries to Shoreside Processors							Tax Revenue Value to Alaska Communities, Boroughs, and the State from 1 mt of Pacific Cod Delivered to CPs Acting as MSs and 1% Shift of CV Trawl Sector Allocation of BSAI Pcod to Deliveries to CPs Acting as MSs				
	Groups of Communities			Aleutians East Borough			Alaska	Grand Total	Cities	AEB	Alaska	Grand Total
	CRFT	SSFBT	Total	BRFT	SSFBT	Total	SSFBT		SSRLT	SSRLT	SSRLT	
Adak/Sand Point/King Cove	\$5.33	\$3.26	\$8.59	c	c	c	c	\$15.30	\$0.25	c	c	\$0.51
Akutan/Unalaska/Dutch Harbor	\$8.15	\$5.29	\$13.44	c	c	c	c	\$26.37	\$14.72	c	c	\$31.73
IFPs/MSs/Seattle	unknown	unknown	unknown	unknown	unknown	unknown	unknown	\$11.61	n/a	n/a	n/a	n/a
Tax Revenue (per mt)	\$13.48	\$8.55	\$22.03	\$6.33	\$2.38	\$8.71	\$10.93	\$53.28	\$14.97	\$1.15	\$16.12	\$32.24
Tax Revenue (from 1% shift)	\$1,617.51	\$1,026.32	\$2,643.83	\$760.01	\$285.00	\$1,045.02	\$1,311.32	\$6,393.19	\$1,796.90	\$137.58	\$1,934.49	\$3,868.93

Abbreviations: CRFT = City Raw Fish Tax; SSFBT = State Shared Fisheries Business Tax; BRFT = Borough Raw Fish Tax; SSRLT = State Shared Resource Landing Tax; c = confidential data suppressed.

Note (1): Shoreside community distribution pattern based on 2018 (most recent year available) landings data (22.66% to Adak/Sand Point/King Cove; 46.19% to Akutan/Unalaska/Dutch Harbor; 27.15% to IFPs/MSs/Seattle).

Note (2): CPs acting as MSs community distribution pattern based on 2017 (most recent year available) state tax data (1.70% to Adak/Sand Point/King Cove; 98.19% to Akutan/Unalaska/Dutch Harbor).

Table 62. Estimated Changes in Selected Alaska Raw Fish Tax Revenues Associated with a 1 Percent Shift of the Catcher Vessel Trawl Sector Bering Sea Non-CDQ Pacific Cod ITAC (less the 5,000 mt set-aside) to Shoreside Processors or Catcher/Processors Acting as Motherships if Ex-Vessel Value = \$500/mt (low bookend) and 1% = 225 mt (2018 TAC)

Community Groupings	Tax Revenue Value to Alaska Communities, Boroughs, and the State from 1 mt of Pacific Cod Delivered to Shoreside Processors and 1% Shift of CV Trawl Sector Allocation of BSAI Pcod to Deliveries to Shoreside Processors							Tax Revenue Value to Alaska Communities, Boroughs, and the State from 1 mt of Pacific Cod Delivered to CPs Acting as MSs and 1% Shift of CV Trawl Sector Allocation of BSAI Pcod to Deliveries to CPs Acting as MSs				
	Groups of Communities			Aleutians East Borough			Alaska	Grand Total	Cities	AEB	Alaska	Grand Total
	CRFT	SSFBT	Total	BRFT	SSFBT	Total	SSFBT		SSRLT	SSRLT	SSRLT	
Adak/Sand Point/King Cove	\$2.67	\$1.63	\$4.30	c	c	c	c	\$7.65	\$0.13	c	c	\$0.25
Akutan/Unalaska/Dutch Harbor	\$4.07	\$2.65	\$6.72	c	c	c	c	\$13.18	\$7.36	c	c	\$15.87
IFPs/MSs/Seattle	unknown	unknown	unknown	unknown	unknown	unknown	unknown	\$5.80	n/a	n/a	n/a	n/a
Tax Revenue (per mt)	\$6.74	\$4.28	\$11.02	\$3.17	\$1.19	\$4.35	\$5.46	\$26.64	\$7.49	\$0.57	\$8.06	\$16.12
Tax Revenue (from 1% shift)	\$1,516.42	\$962.17	\$2,478.59	\$712.51	\$267.19	\$979.70	\$1,229.36	\$5,993.61	\$1,684.60	\$128.98	\$1,813.58	\$3,627.13

Abbreviations: CRFT = City Raw Fish Tax; SSFBT = State Shared Fisheries Business Tax; BRFT = Borough Raw Fish Tax; SSRLT = State Shared Resource Landing Tax; c = confidential data suppressed.

Note (1): Shoreside community distribution pattern based on 2018 (most recent year available) landings data (22.66% to Adak/Sand Point/King Cove; 46.19% to Akutan/Unalaska/Dutch Harbor; 27.15% to IFPs/MSs/Seattle).

Note (2): CPs acting as MSs community distribution pattern based on 2017 (most recent year available) state tax data (1.70% to Adak/Sand Point/King Cove; 98.19% to Akutan/Unalaska/Dutch Harbor).

Table 63. Estimated Changes in Selected Alaska Raw Fish Tax Revenues Associated with a 1 Percent Shift of the Catcher Vessel Trawl Sector Bering Sea Non-CDQ Pacific Cod ITAC (less the 5,000 mt set-aside) to Shoreside Processors or Catcher/Processors Acting as Motherships if Ex-Vessel Value = \$1,000/mt (high bookend) and 1% = 225 mt (2018 TAC)

Community Groupings	Tax Revenue Value to Alaska Communities, Boroughs, and the State from 1 mt of Pacific Cod Delivered to Shoreside Processors and 1% Shift of CV Trawl Sector Allocation of BSAI Pcod to Deliveries to Shoreside Processors							Tax Revenue Value to Alaska Communities, Boroughs, and the State from 1 mt of Pacific Cod Delivered to CPs Acting as MSs and 1% Shift of CV Trawl Sector Allocation of BSAI Pcod to Deliveries to CPs Acting as MSs				
	Groups of Communities			Aleutians East Borough			Alaska	Grand	Cities	AEB	Alaska	Grand
	CRFT	SSFBT	Total	BRFT	SSFBT	Total	SSFBT	Total	SSRLT	SSRLT	SSRLT	Total
Adak/Sand Point/King Cove	\$5.33	\$3.26	\$8.59	c	c	c	c	\$15.30	\$0.25	c	c	\$0.51
Akutan/Unalaska/Dutch Harbor	\$8.15	\$5.29	\$13.44	c	c	c	c	\$26.37	\$14.72	c	c	\$31.73
IFPs/MSs/Seattle	unknown	unknown	unknown	unknown	unknown	unknown	unknown	\$11.61	n/a	n/a	n/a	n/a
Tax Revenue (per mt)	\$13.48	\$8.55	\$22.03	\$6.33	\$2.38	\$8.71	\$10.93	\$53.28	\$14.97	\$1.15	\$16.12	\$32.24
Tax Revenue (from 1% shift)	\$3,032.84	\$1,924.34	\$4,957.18	\$1,425.02	\$534.38	\$1,959.41	\$2,458.73	\$11,987.23	\$3,369.20	\$257.97	\$3,627.16	\$7,254.25

Abbreviations: CRFT = City Raw Fish Tax; SSFBT = State Shared Fisheries Business Tax; BRFT = Borough Raw Fish Tax; SSRLT = State Shared Resource Landing Tax; c = confidential data suppressed.

Note (1): Shoreside community distribution pattern based on 2018 (most recent year available) landings data (22.66% to Adak/Sand Point/King Cove; 46.19% to Akutan/Unalaska/Dutch Harbor; 27.15% to IFPs/MSs/Seattle).

Note (2): CPs acting as MSs community distribution pattern based on 2017 (most recent year available) state tax data (1.70% to Adak/Sand Point/King Cove; 98.19% to Akutan/Unalaska/Dutch Harbor).

To address data confidentiality concerns with the data that were used to generate Table 57, shoreside processing communities have been grouped into the same sets of communities shown in Table 16. It was then further assumed that the patterns of shoreside landings across communities would mirror the pattern of 2018, the most recent year for which data are available. For landings from catcher/processors, 2017 state revenue data was used as a basis for patterns of landings as these are the most recent data available and data on where the catcher/processors brought the fish into state waters to offload are not readily available.

Given that the patterns of landings vary from community to community for the two different sectors, results and the community level (or groups of communities) are different than for grand total results. For example, while in every case the grand total of raw fish taxes deriving from shoreside catcher vessel deliveries is larger than for catcher/processor deliveries, the opposite is true at the community group level for Akutan/Unalaska/Dutch Harbor (and only for this community group). This is because Akutan/Unalaska/Dutch Harbor “captures” approximately 98.2 percent of resource landings tax associated with every metric ton delivered (for transshipment) to all communities combined by all catcher/processors combined (primarily due to Unalaska/Dutch Harbor’s position as the main transshipment port in the Bering Sea). In contrast, Akutan/Unalaska/Dutch Harbor captures approximately 46.2 percent of every metric ton delivered to all shoreside processors in all communities combined (as these types of deliveries are more widely spread amongst other communities, such as Adak/Sand Point/King Cove, and inshore floating processors that could not be assigned to a specific port due to lack of location of operation data). While Akutan/Unalaska/Dutch Harbor derive more raw fish tax revenue from each metric ton delivered to local shoreside processors than from each metric ton delivered to catcher/processors and then transshipped through the communities, in absolute terms the raw fish tax revenue or equivalent from the higher volume of transshipments exceeds that of landings at local processors. It is important to note, however, that raw fish taxes are only one source of public revenue to communities, and do not, for example, take into account multiple other important sources, such as property taxes, personal business property taxes, taxes on fuel sales, harbor fees, fees from other provision of other services, sales taxes generated from economic activity of local support services businesses, and the like.

As noted in Section 5.2.5.1, Adak, despite a range of commercial fishery related community protection measures designed to foster predictability and stability of local shoreside processing opportunities in the western Aleutian region (including both Adak and Atka) is potentially vulnerable to adverse impacts under Alternative 3. Unlike some other community protection measures (such as the Aleutian Islands pollock directed fishery allocation to the Aleut Corporation for benefit of Adak or the Western Aleutian Islands golden king crab Adak community allocation under the BSAI crab rationalization program), the Pacific cod set aside is a time-limited access priority rather than a true allocation. Aleutian Islands shoreside plants west of 170 longitude are required to accept at least 1,000 mt of the Aleutian Islands Pacific cod non-CDQ TAC by February 28 or the access priority is lifted for the year. If the 1,000 mt requirement is met, the western Aleutian Islands shoreplants access priority is removed after March 15 and the Bering Sea limitation is lifted after March 21 or when the Aleutian Islands Pacific cod TAC is achieved, whichever is sooner. Further, as noted in the RIR to which this SIA is appended, if the sideboard under Alternative 3 is too small to allow one week of directed fishing, based on the effort in the fishery and the sector allocation that year/season, NMFS would not likely open the directed fishery for deliveries to Amendment 80 catcher/processors or AFA catcher/processors constrained under Alternative 3. Those catcher/processors may choose to participate in other fisheries as a catcher/processor using their Amendment 80 or AFA quota or they could potentially move to the Aleutian Islands that is not limited under Alternative 3 and have their catcher vessels fish off the Aleutian Islands unrestricted fishery amount. Because that catch would be deducted from both the Aleutian Islands unrestricted fishery amount and the sector’s BSAI

apportionment, it could negatively impact the season length of both those components of the fishery. Additionally, Adak could be impacted by the Aleutian Islands fishery closing earlier than would otherwise be the case if there are high halibut PSC rates in the Bering Sea that cause the sector's halibut PSC limit to be reached. Because the sector's halibut PSC limit is BSAI-wide, reaching the limit by fishing the Bering Sea would close both areas to directed Pacific cod fishing.

6.3.3 Alternative 4

Alternative 4, if selected, would be selected in conjunction with Alternative 2. The purpose of Alternative 4 is to ensure that vessels replaced under the Amendment 80 program vessel replacement regulations would also be subject to any mothership limitations developed under this action. Selecting that alternative closes a potential loophole that would allow replaced Amendment 80 vessels to act as a mothership for Pacific cod if they are no longer designated on an Amendment 80 QS permit and an Amendment 80 LLP license or an Amendment 80 LLP/QS license. The Alternative 4 mothership limitation applies to all BSAI and GOA fisheries, whereas Alternative 2 is specific only to the BSAI Pacific cod fishery. From a community impact perspective, the impacts of this alternative have already been covered under the analysis of Alternative 2, as none of the vessels that would qualify under any of the options in Alternative 2 are replaced Amendment 80 vessels.

6.4 Conclusions

The previous alternative-specific sections assessed the likely positive and negative social and economic impacts of the alternative management measures, over both the short and the long term, on fishing communities substantially engaged in and/or dependent on the BSAI non-CDQ directed Pacific cod trawl fishery. As described, each of the alternatives would benefit some communities while adversely affecting others. As the action alternatives would essentially be a reallocation of catcher vessel trawl caught deliveries from one processing sector to another, economic impacts for the group of all affected communities identified as being substantially engaged in and/or dependent on the fishery would be close to neutral, corresponding to the economic analysis in RIR Section 2.7.3 and shown in Table 2-43 in that section. Given that the purpose and need statement for the proposed action contemplates a return to the status quo (i.e., the historic pattern of landings of the BSAI trawl catcher vessel sector allocation), those alternatives that would most constrain deliveries to catcher/processors that recently began acting as motherships would minimize adverse impacts on fishing communities that historically (2015 and earlier) were substantially engaged in and/or dependent on the fishery and continue to be so. This would be true whether that engagement and/or dependency was based on shoreside processing or catcher/processor acting as mothership processing. These most constraining alternatives would cause the greatest adverse impacts to those communities whose engagement and dependency is largely related to those catcher/processor entities acting as motherships that more recently entered the fishery (2016 and later), fostering the trend the purpose and need statement seeks to address. While each of the alternatives would adversely affect some communities, and economic harm would come to some individual operations under each alternative, it is unlikely that the sustained participation of any fishing communities would be put at risk by any of the proposed alternatives, as all communities would retain continued access to the fishery within the constraints of the condition of the resource.

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9 Attachments

9.1 Attachment A: Defining Local Knowledge and Traditional Knowledge (excerpted from Draft Bering Sea Fishery Ecosystem Plan, November 2018⁵³)

[The NPFMC] aims to continue making forward strides in formalizing the use and review of local knowledge (LK) and traditional knowledge (TK) within and alongside natural and social science in the fisheries management process.

LK broadly includes observations and experiences of local people in a region. LK is the product of knowledge formation and dissemination based on personal, shared and inherited experience (Martin et al. 2007). It is a way of knowing that is connected to a specific place. Bearers of local knowledge are often relatively small groups of people, living in or connected to a common geographic location who actively engage with the environment through local harvest of wild resources. These people may or may not be Indigenous to the area or base their understandings on knowledge that evolves over many generations (PFRCC 2011). In the current Council process LK is commonly utilized in the form of public testimony from skippers, coastal community residents, etc., and stakeholder interactions with Plan Teams.

LK is often recently acquired (over a few generations or less) as compared to TK which is deeply embedded in cultures who have dwelled in a landscape since time immemorial (Berkes 1999:8, Ingold 2000:43). TK refers more specifically to knowledge held by Indigenous people, and is:

a living body of knowledge which pertains to explaining and understanding the universe and living and acting within it. It is acquired and utilized by Indigenous communities and individuals in and through long-term sociocultural, spiritual and environmental engagement. [Traditional knowledge] is an integral part of the broader knowledge system of Indigenous communities, is transmitted intergenerationally, is practically and widely applicable, and integrates personal experience with oral traditions. It provides perspectives applicable to an array of human and nonhuman phenomena. It is deeply rooted in history, time, and place, while also being rich, adaptable, and dynamic, all of which keep it relevant and useful in contemporary life. This knowledge is part of, and used in, everyday life, and is inextricably intertwined with peoples' identity, cosmology, values, and way of life. Tradition – and [traditional knowledge] – does not preclude change, nor does it equal only 'the past'; in fact, it inherently entails change. (Raymond-Yakoubian et al., 2017)

In the Bering Sea Ecosystem, LK and TK are relevant for all fisheries sectors and all aspects of fisheries management. LK and TK are relevant to commercial, recreational, and subsistence fisheries issues. For example, LK and TK knowledge holders might be members of remote rural communities that depend on fishing and harvesting activities (e.g., marine mammals, seabirds, ground fish, salmon, and shellfish) for their livelihood as part of the subsistence way of life and might participate in commercial fishing. LK and TK knowledge holders might also be those who are tied to the Bering Sea as commercial fishers who spend considerable time in the region, and are possibly intergenerational participants in the fishery, yet reside part of the year in Pacific Northwest ports such as Seattle or Newport.

⁵³ <http://meetings.npfmc.org/CommentReview/DownloadFile?p=9fd5d027-86a8-4983-a7e7-f456acc478bf.pdf&fileName=C4%20BS%20FEP.pdf>. Accessed 1/11/19.

9.2 Attachment B: Selected Community Community Catcher Vessel Fleet and Shoreside Processor Statistics, All Species, Area, and Gear Fisheries Combined, Unalaska/Dutch Harbor, Akutan, and King Cove, Alaska, 2008-2017

Table 64. Selected Community Catcher Vessel Fleet Statistics, All Species, Area, and Gear Fisheries Combined, Unalaska/Dutch Harbor, Akutan, and King Cove, Alaska, 2008-2017

Community CV Fleets	Vessels and Gross Revenues	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Annual Average 2008-2017
		Commercial CVs with Unalaska/Dutch Harbor Ownership Addresses	Total Number of Commercial CVs	23	25	24	22	17	16	15	15	14
	Total Ex-Vessel Gross Revenues (millions of 2010 dollars)	\$5.781	\$4.104	\$4.698	\$5.713	\$4.349	\$4.040	\$4.469	\$4.055	\$3.979	\$3.847	\$4.504
Commercial CVs with Akutan Ownership Addresses	Total Number of Commercial CVs	6	4	5	3	5	3	4	3	3	1	3.7
	Total Ex-Vessel Gross Revenues (millions of 2010 dollars)	\$0.378	\$0.216	\$0.304	\$0.368	\$0.185	\$0.069	\$0.078	\$0.101	*	*	\$0.212
Commercial CVs with King Cove Ownership Addresses	Total Number of Commercial CVs	32	34	34	33	31	31	31	33	34	31	32.4
	Total Ex-Vessel Gross Revenues (millions of 2010 dollars)	\$11.125	\$6.785	\$5.927	\$9.322	\$6.911	\$8.005	\$6.352	\$9.224	\$8.429	\$13.951	\$8.603

*Confidential data
Source: ADFG/CFEC Fish Tickets, data compiled by AKFIN in Comprehensive_FT

Table 65. Number of Active Unalaska/Dutch Harbor Shoreside Processors and Ex-vessel Value Paid for All Species, Area, and Gear Fisheries, by Year, 2008-2017 (number of processors and millions of real 2010 dollars)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Average 2008-2018 (number)	Unique Shoreside Processors 2008-2018 (number)
Number of Active Shoreside Processors (based on Intent to Operate codes)	6	6	5	6	6	6	7	6	6	5	5.9	8
Total Ex-Vessel Value Paid by All Active Shoreside Processors (all fisheries)	\$250.0	\$176.2	\$166.0	\$233.9	\$227.6	\$196.2	\$203.1	\$212.3	\$195.7	\$168.8	\$203.0	not applicable

Source: ADFG/CFEC Fish Tickets, data compiled by AKFIN in Comprehensive_FT

9.3 Attachment C: Information on Fish Taxes in Alaska

9.3.1 Overview Information Excerpted from the 2017 Groundfish SAFE

The information in this section is excerpted verbatim from the Stock Assessment and Fishery Evaluation Report for the Groundfish Fisheries of the Gulf of Alaska and Bering Sea/Aleutians Islands Area: Economic Status of the Groundfish Fisheries Off Alaska, 2016 by Fissel, et al., of the Alaska Fisheries Science Center.⁵⁴

9.3.1.1 Fish Taxes in Alaska

Taxes generated by the fishing industry, particularly the fish processing sector, are important revenue sources for communities, boroughs, and the state. There are two main sources of fishery taxes in Alaska: shared taxes administered through the State of Alaska, and municipal fisheries taxes independently established and collected at select municipalities. Shared taxes comprise revenue from multiple sources, including liquor sales, electric and telephone cooperatives, etc. There are two shared taxes that are derived from fishing; the fisheries business tax and the fisheries resource landing tax.

State Taxes

The fisheries business tax, implemented in 1990, is levied on businesses that process or export fisheries resources from Alaska. Tax rates vary under the fisheries business tax, depending on a variety of factors, including how well established the fishery is, and whether processing takes place on a shoreside or offshore facility. Although the fisheries business tax is typically administered and collected by the individual boroughs, revenue from the tax is deposited in Alaska's General Fund. According to state statute, each year the state legislature appropriates 25%-50% of the revenue from the tax to the municipality or borough where processing occurs.⁵⁵

The State of Alaska has collected the fisheries resource landing tax since 1994. This tax is levied on processed fishery resources that were first landed in Alaska, whether they are destined for local consumption or shipment abroad. This tax is collected primarily from catcher/processor and at-sea processor vessels that process fishery resources outside of the state's three-mile management jurisdiction, but within the U.S. Exclusive Economic Zone, and bring their products into Alaska for transshipment. Fishery resource landing tax rates vary from 1% to 3%, depending on whether the resource is classified as "established" or "developing." According to state statute, all revenue from the Fishery Resource Landing Tax is deposited in the state's General Fund, but half of the revenue is available for sharing with municipalities where fishery resources are landed.⁵⁶

Municipal Taxes

In addition to these state taxes, some communities have developed local tax programs related to the fishing industry. These include taxes on raw fish transfers across public docks, fuel transfers,

⁵⁴ <https://www.afsc.noaa.gov/refm/docs/2017/economic.pdf>. Accessed 1/6/2019.

⁵⁵ Alaska Department of Revenue, Tax Division. Annual Reports 2012-2016
<http://tax.alaska.gov/programs/sourcebook/index.aspx>

⁵⁶ Alaska Department of Revenue, Tax Division. Annual Reports 2012-2016
<http://tax.alaska.gov/programs/sourcebook/index.aspx>

extraterritorial fish and marine fuel sales, and fees for bulk fuel transfer, boat hauls, harbor usage, port and dock usage, and storing gear on public land. There is no one source for data on these revenue streams; however, most communities self-report them in their annual municipal budgets collected by the Alaska Division of Community and Regional Affairs. In 2016, 14 communities reported collecting some form of municipal fisheries tax, as well as four boroughs (Aleutians East, Bristol Bay, Kodiak Island, and Lake and Peninsula). Between 2010 and 2016, there was an average of 12 communities who reported collecting a municipal fish tax.

Total fishery related tax income has remained relatively stable, on average, for the top 12 communities over 2012-2016. Total fishery tax income includes the fisheries business tax, fisheries resource landing tax, and any municipal raw fish taxes collected. Unalaska consistently brings in the most fishery related tax revenue through its income through the Fishery Business and Fishery Landing taxes as well as leveraging its own municipal raw fish tax.⁵⁷

Dependence on fishery related tax income is variable, likely due to a number of factors including the amount of revenue generated through other shared taxes, revenue generated through other local municipal taxes, and the vitality of the fisheries being taxed. However, it is worth noting that a few communities have been consistently and exclusively dependent on fishery tax income from 2012-2016, including Akutan.

9.3.2 Resource Landing Tax Related Excerpts from December 2017 Discussion Paper

The information in this section is excerpted from the *Discussion Paper: Participation and Effort in the Bering Sea Trawl Catcher Vessel Pacific Cod Fishery*, December 2017, prepared by: Darrell Brannan (Brannan and Associates LLC.), Jon McCracken (Council staff), and Mike Fey (AKFIN), with input from Rachel Baker and Mary Furuness of NMFS Alaska Region.⁵⁸

The Fishery Resource Landing Tax is defined in Alaska Statutes 43.77. In summary, Alaska levies a fishery resource landing tax on fishery resources processed outside of and first landed in Alaska, based on the unprocessed value of the resource. The unprocessed value is determined by multiplying a statewide average price per pound (derived from Alaska Department of Fish and Game data) by the unprocessed weight.

The Department of Revenue's Tax Division collects the Fishery Resource Landing Tax primarily from factory trawlers and floating processors that process fishery resources outside the state's 3-mile limit and bring their products into Alaska for transshipment. The tax rate for "established" fisheries, like Pacific cod, is 3 percent of the estimated ex-vessel value of the raw fish used to make the product landed.

The Magnuson-Stevens Act (the Act) does not prohibit federally permitted U.S. fishing vessels from catching, processing, and delivering fish to other U.S. fishing vessels in the exclusive economic zone (EEZ) without entering into state waters. U.S. fishing vessels may catch and process U.S. harvested fish in the EEZ and then transport this fish or fish product out of Alaska⁵⁹. The options to deliver to

⁵⁷ Department of Commerce AK Taxable Database, Alaska Division of Community and Regional Affairs. <https://www.commerce.alaska.gov/dcra/dcrepoext/Pages/AlaskaTaxableDatabase.aspx>

⁵⁸ Available at: <http://nrfmc.legistar.com/gateway.aspx?M=F&ID=14769180-2558-4acc-9290-1facf916e0a7.pdf>. Accessed 1/7/2019/

⁵⁹ Information in this section is based in part on a September 15, 2017 memo from Lisa Lindeman, NOAA GC to ADF&G Commissioner Cotten.

U.S. vessels in the EEZ are severely limited by the lack of U.S. transport vessels. The Act does prohibit U.S. fishing vessels from transferring or attempting to transfer at sea any U.S. harvested fish to any foreign vessel “while such foreign vessel is within the exclusive economic zone or within the boundary of any state except to the extent that the foreign fishing vessel has been permitted under section 204(d) or 306(c) (of the American Fisheries Act) to receive such fish.” 16 U.S.C. § 1857(3). Therefore, any U.S. fishing vessel transferring or attempting to transfer at sea processed products from U.S. harvested fish to any unpermitted foreign vessel in the EEZ or in Alaska state waters would be violating the Act.

Notwithstanding the prohibitions noted above, NOAA has interpreted the Act to allow U.S. fishing vessels in Alaska state waters to legally transfer U.S. harvested fish to unpermitted foreign vessels in internal waters or at ports, harbors, or recognized roadsteads (collectively “legal transshipment areas”). Alaska roadsteads are within the 3-mile State waters area, so all catcher/processors and motherships are subject to the Fishery Resource Landing Tax when they offload product in Alaska.

Schedule 6 of the Fishery Resource Landing Tax form allows persons with this tax liability to take a tax credit for charitable contributions to authorized educational institutions of up to \$300,000 per year. The credit allows the person to deduct 50 percent of the first \$100,000 from their Fishery Resource Landing Tax liability and 100 percent of the next \$200,000. Persons electing to take this tax credit are allowed to determine where a portion of their Fishery Resource Landing Tax liability is allocated.

In summary, the information currently available to the analysts indicates that at-sea processors are currently paying the Fishery Resource Landing Tax. The only case where the tax would not be paid is if the vessel never entered into State waters. That may only occur if the last load of product is taken directly to Seattle at the end of the year.

At-sea processors are not required to pay community taxes that are based on landings of raw fish (Table 66). Because the vessels are landing processed product, the fish are not considered raw fish and are not subject to the community tax based on the definition of raw fish landings. Published information is not available to determine whether vessels offloading in these communities are also using services provided by the community.

Table 66. Summary of Community and Borough Raw Fish Taxes for Communities that are Home to Processors that take BSAI Pacific Cod Deliveries from Trawl Vessels

Community/Borough	Tax Rate (exvessel)
Aleutians East Borough (borough tax)	2.0%
Akutan (city tax)	1.5%
King Cove (city tax)	2.0%
Sand Point (city tax)	2.0%
Aleutians West Census Area	
Adak (city tax)	2.0%
Unalaska (city tax)	2.0%

Source: <https://www.commerce.alaska.gov/dcra/DCRARepoExt/RepoPubs/Taxable/2016-AlaskaTaxableSupplement.pdf>

9.3.3 Public Revenue Time Series Data Interpretation Caveats Excerpted from the 2008 Crab Rationalization 3-Year Program Review SIA

The following text taken verbatim from a note in the crab rationalization 3-year program review social impact assessment (EDAW 2008b) regarding the challenges inherent attempting to compare time series fish tax-derived public revenue data from different sources to track changes potentially associated with specific fishery management actions.

All of these numbers must be interpreted with some caution when going beyond a general level, such as when attempting to establish direct links to particular fishing seasons. In some cases, the figures reflect when the money was received by the municipality, and for others they reflect when the transactions from which the revenue derives actually took place (i.e., in accounting terms, the difference between cash-based accounting versus an accrual-based accounting). For example, local fish taxes are paid on the 15th of the month following the month in which the sales transactions took place. An adjustment is taken at the end of the fiscal year, however, to attribute those revenues to the periods where the sales took place. So, for local fish taxes, it is easy to see the link between seasons and revenues (keeping in mind the distinction between calendar and fiscal years). In the case of revenues deriving from the State of Alaska, however, the shared fish taxes are paid for the calendar year by the processors to the state in March of the following year. The State then pays the shared portions out to the local entities in the August-September timeframe. So, for example, ex-vessel value paid by processors in calendar year 2000 is taxed in March 2001. The State then pays the boroughs and cities their share calling it "FY2001 Taxes" in August 2001.

This means that a single sales event that is subject to both local and state fish taxes can show up as revenue to the City of Unalaska in two separate fiscal years (and, because of the divergence of calendar and fiscal years as the basis for accounting, the spread between accrual and appearance on reports can essentially be two fiscal years [e.g., shared taxes accrued in January 2000 received in September 2001 would have been based on sales that took place in FY 2000, but it would show up as revenue during FY 2002]). To further complicate time series analysis, the City of Unalaska has changed accounting procedures in recent years, such that shared taxes have effectively shifted the periods during which they appear in financial statements, making comparability between years less than straightforward. Before the city's FY 2000, the fisheries business tax collected by the State for calendar year 1998 was booked in FY 1999. Under the method currently in place, that revenue would be recorded in FY 2000. This means that the FY 1999 and FY 2000 fisheries business tax figures reflected in Table 2.1-22 are the same revenue (they are not exactly equal due to a second, smaller payment from the State to communities in unincorporated boroughs that falls into a different time period).

In practical terms, this means that detailed fishing season-specific time series analysis is not possible using commonly published data, but that trend information is readily apparent at the individual revenue source level. In terms of fiscal impacts to municipalities, it is a truism that when revenue is received is more important than when fish are landed, but clearly much other economic activity (and important revenue generation) takes place at the time of landings.

9.4 Attachment D: Number of Crew Positions on GOA Trawl Catcher Vessels Also Participating in the BSAI Non-CDQ Directed Pacific Cod Trawl Fishery, by Community of Vessel Ownership Address and Community of Crew Member Residence Address, 2016

Table 67. Number of Active Unalaska/Dutch Harbor Shoreside Processors and Ex-vessel Value Paid for All Species, Area, and Gear Fisheries, by Year, 2008-2017 (number of processors and millions of real 2010 dollars)

Community of Vessel Ownership Address	State of Crew Member Residence	Community of Crew Member Residence	Number of ADFG Crew License Holders	Number of CFEC Gear Operator Permit Holders	Total Crew Positions
Alaska					
Kodiak	Alaska	Anchor Point	1	0	1
	Alaska	Anchorage	0	1	1
	Alaska	Kodiak	20	8	28
	Alaska	Soldotna	1	0	1
	Oregon	Albany	0	1	1
	Oregon	Lebanon	1	0	1
	Oregon	Newport	0	2	2
	Oregon	Port Orford	1	0	1
	Oregon	Portland	1	0	1
	Oregon	Waldport	1	0	1
	Washington	Puyallup*	1	0	1
	California	Napa	1	0	1
	Florida	New Port Richey	1	0	1
	Illinois	Bolingbrook	0	1	1
	Unknown	Unknown	7	1	8
	Kodiak Subtotal			36	14
Alaska Subtotal			36	14	50
Oregon					
Newport	Alaska	Kodiak	2	3	5
	Oregon	Beaverton	0	1	1
	Oregon	Dallas	1	0	1
	Oregon	Depoe Bay	1	0	1
	Oregon	Eugene	1	0	1
	Oregon	Newport	3	0	3
	Oregon	Toledo	1	0	1

Community of Catcher Vessel Ownership Address	State of Crew Member Residence	Community of Crew Member Residence	Number of ADFG Crew License Holders	Number of CFEC Gear Operator Permit Holders	Total Crew Positions
	Oregon	Tualatin	1	0	1
	Colorado	Fountain	1	0	1
	Newport Subtotal		11	4	15
Siletz	Alaska	Anchorage	1	0	1
	Alaska	Kodiak	1	1	2
	Alaska	Wasilla	1	0	1
	Oregon	Coos Bay	1	0	1
	Oregon	Molalla	1	0	1
	Oregon	Newport	5	3	8
	Oregon	Portland	0	1	1
	Oregon	Siletz	0	1	1
	Oregon	Yachats	1	0	1
	Hawaii	Pearl City	1	0	1
	Unknown	Unknown	2	0	2
	Siletz Subtotal		14	6	20
Toledo	Alaska	Kodiak	4	0	4
	Alaska	Wasilla	1	0	1
	Oregon	Newport	1	0	1
	Oregon	Toledo	0	1	1
	Washington	Anacortes	1	0	1
	Washington	Federal Way	1	0	1
	Washington	La Conner	1	0	1
	Washington	Seattle	0	1	1
	Unknown	Unknown	1	0	1
	Toledo Subtotal		10	2	12
Oregon Subtotal			35	12	47
Washington					
Bellingham	Washington	Bellingham	2	0	2
	Washington	Edmonds	1	0	1
	Washington	Lake Stevens	1	0	1
	Washington	Port Orchard	1	0	1
	Unknown	Unknown	0	2	2
	Bellingham Subtotal		5	2	7
Camas	Alaska	Kodiak	3	1	4
	Alaska	Palmer	1	0	1
	Washington	Camas	0	1	1

Community of Catcher Vessel Ownership Address	State of Crew Member Residence	Community of Crew Member Residence	Number of ADFG Crew License Holders	Number of CFEC Gear Operator Permit Holders	Total Crew Positions
Camas Subtotal			4	2	6
Edmonds	Alaska	Anchorage	1	0	1
	Alaska	Sand Point	0	1	1
	California	Bishop	1	0	1
	California	Temecula	1	0	1
	Idaho	Coeur d'Alene	1	0	1
	Unknown	Unknown	0	1	1
	Edmonds Subtotal			4	2
Seattle*	Alaska	Anchorage	1	0	1
	Alaska	Kenai	1	0	1
	Alaska	Kodiak	14	6	20
	Alaska	Palmer	1	0	1
	Alaska	Petersburg	0	1	1
	Alaska	Seward	1	0	1
	Oregon	Aumsville	1	0	1
	Oregon	Bend	0	1	1
	Oregon	Eddyville	1	0	1
	Oregon	Grant's Pass	0	1	1
	Oregon	Newport	5	2	7
	Oregon	North Bend	1	0	1
	Oregon	Nyssa	0	1	1
	Oregon	Salem	1	0	1
	Oregon	Siletz	0	1	1
	Oregon	South Beach	1	0	1
	Oregon	Toledo	4	2	6
	Oregon	West Linn	1	0	1
	Washington	Anacortes	1	1	2
	Washington	Baring	1	0	1
	Washington	Belfair	0	1	1
	Washington	Bellingham	1	0	1
	Washington	Buckley	1	0	1
	Washington	Chehalis	1	0	1
	Washington	Federal Way	1	0	1
	Washington	Kent	1	0	1
	Washington	Poulsbo	1	0	1
Washington	Puyallup	0	1	1	
Washington	Redmond	1	0	1	

Community of Catcher Vessel Ownership Address	State of Crew Member Residence	Community of Crew Member Residence	Number of ADFG Crew License Holders	Number of CFEC Gear Operator Permit Holders	Total Crew Positions
	Washington	Seattle	14	2	16
	Washington	Sedro Woolley	1	0	1
	Washington	Tacoma	2	0	2
	California	Simi Valley	1	0	1
	Florida	Clermont	1	0	1
	Florida	Palatka	1	0	1
	Hawaii	Kihei	1	0	1
	Kentucky	Versailles	1	0	1
	Montana	Bigfork	1	0	1
	Unknown	Unknown	2	0	2
	Seattle Subtotal		67	20	87
South Bend	Alaska	Kodiak	2	0	2
	Washington	Everett	1	0	1
	Washington	South Bend	0	1	1
	South Bend Subtotal		3	1	4
Washington Subtotal			83	27	110
GRAND TOTAL (Positions)			154	53	207
GRAND TOTAL (Unique Persons)			152	52	204

Source: GOA trawl catcher vessel EDR data.

9.5 Attachment E: Catcher/Processor Crew Community of Residence for Amendment 80 Catcher/Processors that Accepted BSAI Non-CDQ Directed Pacific Cod Trawl Fishery Catcher Vessel Deliveries, 2016

Table 68. Catcher/Processor Crew Community of Residence for Amendment 80 Catcher/Processors that Accepted BSAI Non-CDQ Directed Pacific Cod Trawl Fishery Catcher Vessel Deliveries, 2016

Number of States and Territories	Number of Unique Communities	Number of Communities by State	Name of State or Territory and Community
1			Washington
	1	1	BREMERTON
	2	2	BURIEN
	3	3	CHELAN
	4	4	CLINTON
	5	5	COUPEVILLE
	6	6	EAGLE POINT
	7	7	EAST WENATCHEE
	8	8	EVERETT
	9	9	FEDERAL WAY
	10	10	FERNDALE
	11	11	FRIDAY HARBOR
	12	12	GIG HARBOR
	13	13	KENT
	14	14	KIRKLAND
	15	15	LACEY
	16	16	LAKE STEVENS
	17	17	LANGLEY
	18	18	LYNNWOOD
	19	19	NAMPA
	20	20	OAK HARBOR
	21	21	OLYMPIA
	22	22	PACIFIC
	23	23	PORT ORCHARD
	24	24	POULSBO
	25	25	PUYALLUP
	26	26	RENTON
	27	27	RICHLAND
	28	28	SEATTLE

Number of States and Territories	Number of Unique Communities	Number of Communities by State	Name of State or Territory and Community
	29	29	SOAP LAKE
	30	30	SPANAWAY
	31	31	SPOKANE
	32	32	TACOMA
	33	33	WENATCHEE
2			Alaska
	34	1	ANCHORAGE
	35	2	CORDOVA
	36	3	DUTCH HARBOR
	37	4	KODIAK
	38	5	WASILLA
3			Oregon
	39	1	GRESHAM
	40	2	MILTON FREEWATER
	41	3	PORTLAND
	42	4	TIGARD
4			California
	43	1	BREA
	44	2	SAN DIEGO
	45	3	STOCKTON
5			Pennsylvania
	46	1	ALLENTOWN
	47	2	GOULDSBORO
	48	3	WAYNESBORO
6			Alabama
	49	1	CHUNCHULA
7			Arizona
	50	1	TUCSON
8			Colorado
	51	1	RIFLE
9			Florida
	52	1	GULF BREEZE
10			Hawaii
	53	1	PAIA
11			Illinois

Number of States and Territories	Number of Unique Communities	Number of Communities by State	Name of State or Territory and Community
	54	1	LOVINGTON
12			Maine
	55	1	BEDFORD
13			Montana
	56	1	FORTINE
14			Nebraska
	57	1	FREMONT
15			Nevada
	58	1	LAS VEGAS
16			Ohio
	59	1	FINDLAY

Source: Amendment 80 EDR data

9.6 Attachment F: Demographic Information by Job Category for Ten Amendment 80 BSAI Groundfish Trawl Catcher/Processors Owned by Four Seattle MSA-Based Firms, 2014

Table 69. Demographic Information by Job Category for Ten Amendment 80 BSAI Groundfish Trawl Catcher/Processors Owned by Five Seattle MSA-Based Firms, 2014

Job Categories	Total Employees	Non-Hispanic or Latino Employees (by Race)						Hispanic or Latino Employees (any Race)	Total Minority Employees*	
		White	Black or African American	Native Hawaiian or other Pacific Islander	Asian	American Indian or Alaska Native	Other Race or Two or More Races		Number	Percent
Captains	31	31	0	0	0	0	0	0	0	0.0%
Mates and deck crew/purser	147	71	1	36	13	0	3	23	76	51.7%
Engineers	86	65	2	4	4	1	0	10	21	24.4%
Factory foreman/quality control	94	24	3	29	13	0	4	21	70	74.5%
Processing labor/galley crew/cleaning	776	189	89	153	69	1	16	259	587	75.6%
Cook	50	23	4	5	2	1	0	15	27	54.0%
Total	1,184	403	99	227	101	3	23	328	781	66.0%

*Note: Total minority consists of all individuals except those self-identified as being both White and non-Hispanic or Latino.
Source: Industry-supplied spreadsheet generated from 2014 EEOC data, in AECOM 2016.