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Community Profiles for North Pacific Fisheries - Alaska

Volume 1

by
A. Himes-Cornell, K. Hoelting, C. Maguire, L. Munger-Little,
J. Lee, J. Fisk, R. Felthoven, C. Geller, and P. Little

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ABSTRACT

This document profiles 196 fishing communities in Alaska with information on social, economic and fisheries characteristics. Various federal statutes, including the Magnuson-Stevens Fishery Conservation and Management Act and the National Environmental Policy Act, among others, require agencies to examine the social and economic impacts of policies and regulations. These profiles serve as a consolidated source of baseline information for assessing community impacts in Alaska.

The communities profiled in this document were selected through a quantitative process that assessed involvement in North Pacific fisheries. Demographic and fisheries data from the year 2009, the most recent year for which data were available when community selection occurred, were used to determine fisheries involvement. Data envelopment analysis was used as a quantitatively rigorous method to rank communities based on their overall engagement and/or dependence in North Pacific fisheries (including commercial, recreational and subsistence fisheries). Engagement was defined as the value of each indicator as a percentage of the total present in the state, for example, the percent of all fishing vessels registered in the state that are owned by residents of a given community. Dependence was then defined as a per capita measurement of each indicator within the community, reflecting the importance of fishing to residents. The quantitative indicators used to represent commercial fisheries participation included commercial fisheries landings (e.g., landings, number of processors, number of vessels delivering to a community), communities that are the registered homeports of vessels participating in the fisheries, and communities that are home to documented participants in the fisheries (e.g., crew license holders, state and federal permit holders, and vessel owners). The indicators used to represent recreational fisheries participation included sportfish licenses sold in the community, sportfish licenses held by residents, and the number of charter businesses and guides registered in the community. The indicators used to represent subsistence fisheries participation included participation in the Subsistence Halibut Registration Certificate program, number of subsistence salmon permits issued to households in the community, and local marine mammal harvests. A community was selected to be profiled when it surpassed the median index score on either the ranking of community dependence or engagement.

Each community profile is given in a narrative format that includes six sections: *People and Place, Natural Resources and Environment, Current Economy, Governance, Infrastructure,* and *Involvement in North Pacific Fisheries*. *People and Place* includes information on location, demographics (including age and gender structure of the population, racial and ethnic make-up), education, housing, and local history. *Natural Resources and Environment* presents a description of the natural resources in the vicinity of the community, as well as specific information on local parks and preserves, resource exploration opportunities (e.g., mining and fishing), natural hazards and nearby environmental contamination sites. *Current Economy* analyzes the principal contributions to the local economy, including the distribution of occupations and industries that employ residents, as well as unemployment and poverty statistics. *Governance* lays out information regarding city classification, taxation, Native villages, corporations, and other organizations, proximity to fisheries management and immigration offices, and details regarding municipal revenue and fisheries-related grants received by each community. *Infrastructure* covers connectivity and transportation, facilities (e.g., water, waste, electricity, schools, police), medical services, and educational opportunities. *Involvement in North Pacific Fisheries* details community activities in commercial fishing (e.g., processing, permit holdings, and vessel

ownership), recreational fishing, and subsistence fishing. The term ‘community’ was defined based on Census place-level geographies where possible, and communities were grouped only when constrained by fisheries data. In total, profiles were written for 188 individual communities. Regional characteristics and fisheries issues are briefly described in regional introductions.

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ACRONYMS

ACS	U.S. Census American Community Survey
ADF&G	Alaska Department of Fish and Game
AEL&P	Alaska Electric Light and Power Company
AEWC	Alaska Eskimo Whaling Commission
AFSC	Alaska Fisheries Science Center
AIDEA	Alaska Industrial Development and Export Authority
AJV	APICDA Joint Ventures, Inc.
AKFIN	Alaska Fisheries Information Network
ALARI	Alaska Local and Regional Information
AMA	Arctic Management Area
AMHS	Alaska Marine Highway System
AMNWR	Alaska Maritime National Wildlife Refuge
ANCSA	Alaska Native Claims Settlement Act
ANILCA	Alaska National Interest Land Conservation Act
ANWR	Arctic National Wildlife Refuge
APA	Alaska Packers Association
APIAI	Aleutian Pribilof Islands Association
APICDA	Aleutian Pribilof Island Community Development Association
ASNA	Arctic Slope Native Association
ASRC	Arctic Slope Regional Corporation
AVCP	Association of Village Council Presidents
B.C.	British Columbia
BBAHC	Bristol Bay Area Health Corporation
BBEDC	Bristol Bay Economic Development Corporation
BBNA	Bristol Bay Native Association
BBNC	Bristol Bay Native Corporation
BCIS	U.S. Bureau of Citizenship and Immigration Services
BIA	Bureau of Indian Affairs
BLM	Bureau of Land Management
BLM	U.S. Bureau of Land Management
BOF	Alaska Board of Fish
BSEAG	Bering Sea Elders Advisory Group
BSNA	Bering Straits Native Association
BSNC	Bering Straits Native Corporation
CBSFA	Central Bering Sea Fishermen's Association
CDP	Census Designated Place
CDQ	Community Development Quota
CFEC	Commercial Fisheries Entry Commission
CGSCHA	Clam Gulch State Critical Habitat Area

CHA	Critical Habitat Area
CHAP	Community Health Aid Program
CIRI	Cook Inlet Region, Inc.
CITC	Cook Inlet Tribal Council
CMA	Chignik Management Area
COE	U.S. Army Corps of Engineers
CPI	Consumer Price Index
CQE	Community Quota Entity
CRRC	Chugach Regional Resources Commission
CSIS	Community Subsistence Information System
CVRF	Coastal Villages Regional Fund
CVS	Coastal Villages Seafood
DCCED	Alaska Department of Commerce, Community, and Economic Development
DCRA	Alaska Department of Community and Rural Affairs
DEC	Alaska Department of Environmental Conservation
DNR	Alaska Department of Natural Resources
DOLWD	Alaska Department of Labor and Workforce Development
DOT&PF	Alaska Department of Transportation & Public Facilities
EDA	U.S. Economic Development Administration
EEZ	Exclusive Economic Zone
EMS	Emergency Medical Services
EPA	Environmental Protection Agency
FEMA	Federal Emergency Management Administration
FFP	Federal Fisheries Permits
FMP	Fishery Management Plan
FUDS	Formerly Used Defense Sites
FWS	U.S. Fish and Wildlife Service
GANPP	Gates of the Arctic National Park and Preserve
GHL	Guideline harvest limits
GOA	Gulf of Alaska
IFQs	Individual Fishing Quota
IHS	Indian Health Services
IPHC	International Pacific Halibut Commission
IWC	International Whaling Commission
JEDC	Juneau Economic Development Council
KANA	Kodiak Area Native Association
KIC	Ketchikan Indian Community
KMA	Kodiak Management Area
LACL	Lake Clark National Park and Preserve
LLP	License Limitation Program
LUD	Land Use Designation

MEA	Matanuska Electric Association
MMPA	Marine Mammal Protection Act
MSFCMA	Magnuson-Stevens Fishery Conservation and Management Act
NERRS	National Estuarine Research Reserve System
nm	Nautical Miles
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NPFMC	North Pacific Fishery Management Council
NPRA	National Petroleum Reserve Alaska
NPS	National Park Service
NSC	Nilavena Subregional Clinic
NSEDC	Norton Sound Economic Development Corporation
NSSP	Norton Sound Seafood Products
NWFSC	Northwest Fisheries Science Center
NWR	National Wildlife Refuge
OCS	Outer continental shelf
PAF	Pacific American Fisheries
PFD	Permanent Fund Dividends
PSMFC	Pacific States Marine Fisheries Commission
PWI	Prince of Wales Island
RAC	Regional Advisory Committee
RACR	Roadless Area Conservation Rule
RHA	Reindeer Herders Association
RurAL CAP	Rural Alaska Community Action Program
SEARHC	Southeast Alaska Regional Health Consortium
SHARC	Subsistence Halibut Registration Certificate
SMP	State Marine Park
SRA	State Recreation Area
SWHS	Statewide Harvest Survey
TAC	Total allowable catch
TDX	Tanadgusix
TNWR	Togiak National Wildlife Refuge
U.S.	United States
U.S.CG	U.S. Coast Guard
UAS	University of Alaska Southeast
UCU.S.MA	Upper Copper/Upper Sustina Sport Fish Management Area
VPSO	Village Public Safety Officer
WISGS	Walrus Islands State Game Sanctuary
YDFDA	Yukon Delta Fisheries Development Association
YDNWR	Yukon Delta National Wildlife Refuge
Y-K	Yukon-Kuskokwim

FOREWORD

The Alaska Fisheries Science Center (AFSC) has published this enlarged and updated technical memorandum entitled *Community Profiles for North Pacific Fisheries – Alaska* in order to provide a broad and reliable socioeconomic overview of those communities in Alaska that are engaged in harvesting fishery and aquatic resources. This report creates profiles of selected Alaskan communities that are comprehensive, thorough, and accurate, and that can be used by the National Marine Fisheries Service, the North Pacific Fishery Management Council, and other related state and federal agencies to shape government policy and to evaluate the social and economic impact of existing regulations on these communities. In order to generate these complex community profiles, the AFSC relies on the Alaska Fisheries Information Network (AKFIN) to acquire and process the best available data on Alaska commercial, recreational, and subsistence fisheries. Using a complex database management system, AKFIN is able to process a vast quantity of diverse data into functional information that allows AFSC to construct fact-based community profiles which can guide state and federal agencies in developing and deploying the most effective policies for the Alaska fisheries.

Under the direction of the Pacific States Marine Fisheries Commission (PSMFC), AKFIN was established in 1997 in response to the pressing demand for a comprehensive information management center that would be able to process, store and distribute the growing volume of data being accumulated by the Alaska fisheries. AKFIN functions as an intermediary network that supports the collection and processing of fisheries' statistics gathered in Alaska. Moreover, AKFIN consolidates this information within a single comprehensive database, provides value-added analysis and interpretation, and then disseminates this information to fishery analysts, managers, and scientists. AKFIN operates in accordance with the objectives of the PSMFC, which is to support and promote policies that contribute to the conservation, development, and management of our fishery resources in Alaska and on the West Coast of the United States.

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INTRODUCTION

Purpose

This document profiles 196 Alaska communities significantly involved in commercial, recreational and subsistence fisheries in Alaska, including state waters, and federal waters in the Bering Sea, the Aleutian Islands, the Gulf of Alaska, the Beaufort Sea and Chukchi Sea. For the purposes of this project, these areas are collectively referred to as the North Pacific.

Fishing Communities in Law and Policy

A variety of federal laws make clear the imperative for the National Marine Fisheries Service to consider the human communities that are involved in fisheries. National Standard Eight of the Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA) states:

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

In addition, the National Environmental Policy Act requires that agencies assess the impacts of major federal actions on the environment, including the human environment. Typically, an Environmental Impact Statement will include a description of the social environment, and an assessment of the impacts of alternative policy choices on that environment.

Other laws and policies mandating attention to impacts on human communities include Executive Order 12898 on Environmental Justice, which directs agencies to assess impacts that may disproportionately affect low income and minority populations, Executive Order 12866 on Regulatory Planning and Review, which requires agencies to assess the costs and benefits of proposed regulations and alternatives, and the Regulatory Flexibility Act (RFA), which requires agencies to assess impacts of proposed policies on regulated small entities, meaning small businesses, organizations, and governmental jurisdictions as defined in the RFA and the Small Business Act.[1]

In order to facilitate implementation of these laws, and improve available information on affected communities, the National Marine Fisheries Service (NMFS) has engaged in a nation-wide effort to profile fishing communities. Analysis of social impacts often uses a geographic

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[1] "'Small businesses' are defined in section 3 of the Small Business Act, 15 U.S.C. . 632, and in the SBA's regulations at 13 C.F.R. 121.201 (2002). 5 U.S.C. 601(3). . . . . 'Small organizations' are any not-for-profit enterprises that are independently owned and operated and not dominant in their fields (for example, private hospitals and educational institutions). 5 U.S.C. 601(4). 'Small governmental jurisdictions' are governments of cities, counties, towns, townships, villages, school districts, or special districts with a population of less than 50,000. The size standard used by the Small Business Administration to define small businesses varies by industry; however, the SBA uses the "fewer than 500 employees" cut off when making an across-the-board classification." Quoted from the U.S. Equal Employment Opportunity Commission *Regulatory Flexibility Act Procedures* posted at http://www.eeoc.gov/policy/regflexibilityact.html.

scale larger than the community, such as county or region, to analyze the data because that is the geographic level at which much of the data is available, and because the resources are not available to conduct an analysis with finer geographical resolution. Detailed analysis at the community level usually focuses on those communities which are likely to experience the most significant impacts -- an approach that is entirely appropriate given the limited time allotted for most impact assessments. Thus, there are dozens of communities which may be impacted by policy matters that cannot be analyzed on an individual basis. Because the North Pacific already has regional economic profiles[2] and detailed community-level profiles of some places most heavily involved in federal fisheries,[3] the profiles given here may be particularly useful in providing basic information on some of the fishing communities not included in these other reports.

Fishing Community Profiles

The profiles of Alaskan fishing communities in this document are part of this national endeavor, and represent the first update to the original document published in 2005.[4] The fisheries considered in these profiles include both state and federal fisheries in the commercial, recreational and subsistence sectors. From the perspective of a community dependent on or engaged in fishing, whether a particular fishery is under state or federal jurisdiction is of less importance to the health and resilience of the community than the strength and sustainability of the fishery itself. Furthermore, it can sometimes be challenging to identify from available databases whether a documented fish delivery was taken under a state or federal fishery, particularly where there are parallel seasons for the same species and gear types, and much of the available information concerning involvement in fisheries is not fishery-specific. Finally, this combined state and federal approach was the recommended method for the national profiling project, so the Alaska Fisheries Science Center profiles will be compliant with the larger effort.

The communities profiled in the document were selected by a quantitative assessment method described in detail below. This method was based on commercial, recreational and subsistence fisheries data, recognizing that in the life of a community, one, two or all three types of fishing may be of great importance socially, culturally, and economically. These community profiles include information on all three types of fishing activities as part of the narrative.

Related Projects

Many communities outside of Alaska are also highly involved in North Pacific fisheries. In 2004, the AFSC and the Northwest Fisheries Science Center (NWFSC) undertook a joint project to profile communities in Washington, Oregon, California and other states that are

[2] "Regional Profiles in the North Pacific Groundfish Fisheries" prepared for the National Marine Fisheries Service and the North Pacific Fishery Management Council by Northern Economics, Inc. and EDAW, Inc. posted at http://www.fakr.noaa.gov/npfmc/misc_pub/NorthernEconomics/RegionalProfile.pdf.
[3] Community-level profiles are included in the Social Impact Assessment sections of various NMFS Environmental Impact Statements, e.g., Alaska Groundfish Fisheries Revised DRAFT Programmatic Supplemental Environmental Impact Statement, September 2003 posted at http://www.fakr.noaa.gov/sustainablefisheries/seis/intro.htm.
[4] These community profiles were published as NOAA Technical Memorandum NMFS-AFSC-160 in December 2005.

involved in commercial fisheries. In addition to descriptions of the communities, the profiles included descriptions of local involvement in both North Pacific and West Coast fisheries. In addition, the AFSC is involved in creating more in-depth profiles of significant fishing communities, based on rapid assessment procedures and ethnographic fieldwork in a limited number of communities.

Other NMFS Regional Offices and Science Centers have also profiled communities involved in commercial and recreational fisheries. Eventually, the NMFS will create a national database of fishing community information that will be updated on a regular basis.

The profiling of communities involved in fishing is related to, but is not necessarily the same as, the designation of Fishing Communities according to the definitions of the MSFCMA. The process for designating MSFCMA Fishing Communities is at present being discussed by NMFS social science staff. It will likely bear similarities to the process used in this project to decide which communities to profile, but it will also have significant differences. The results of the MSFCMA Fishing Communities designation process may have an effect on which communities are selected for profiling when this document is updated.

Finally, there are a number of projects that have been undertaken by Fishery Management Councils, Commissions, and other fisheries management and information groups which involve narrative profiling of fishing communities. These include the just-released *West Coast Marine Fishing Communities* by Jennifer Langdon-Pollock of the Pacific States Marine Fisheries Commission (funded by NMFS and the Pacific Fisheries Management Council),[5] the 2001 *New England's Fishing Communities* by Madeleine Hall-Arber et al. at the MIT Sea Grant Program,[6] funded by the Marine Fisheries Initiative of the National Marine Fisheries Service, and the 2004 *Mid-Atlantic Fishing Communities* by Bonnie McCay et al.[7]

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[5] Langdon-Pollock, Jennifer. (2004). *West Coast Marine Fishing Community Descriptions.* Portland: Pacific States Marine Fisheries Commission, Economic Fisheries Information System.

[6] Hall-Arber, Madeline; Dyer, Chris; Poggie, John; McNally, James; & Gagne, Renee. (2001). *New England's Fishing Communities.* Cambridge: MIT Sea Grant College Program.

[7] McCay, Bonnie J., Bryan Oles, Johnelle Lamarque, Brent Stoffle and Kevin St. Martin, eds. (2004). Mid-Atlantic Fishing Communities: A Report to the NEFSC, NMFS, NOAA. New Brunswick, NJ: Rutgers Fisheries Project, Department of Human Ecology, Cook College, Rutgers the State University.

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METHODS

The task of preparing a document about the Alaskan communities involved in North Pacific fisheries, an area of vast scale and diversity, was a daunting one, and one whose complexity is reflected in the research methods used to select communities to be profiled in this document. Fortunately, the fisheries of the North Pacific, large and lucrative as they are, have had a wealth of information collected about them. Our task was to compile these disparate sources of information in order to produce a document that could serve as baseline data for policy analysts and decision-makers, and a starting point for social scientists conducting more complex analytical research. In this section, the research methods, including the community selection process, data sources, and how the data was treated, are explained in detail. In many cases, online publically-available data sources were used, and are cited as such in footnotes. In other cases, specific data requests were made to agencies in order to obtain the necessary information. This section also discusses some of the methodological challenges our team encountered during the course of the project, and how they were resolved.

Determining Fishing Dependence and Engagement

There are hundreds of communities in Alaska involved to some extent in commercial, recreational and/or subsistence fishing. Quantitative selection criteria were used in order to reduce the number of communities to be profiled to a manageable list consisting of those with the most involvement in commercial, recreational and/or subsistence fisheries.

Communities were selected according to two different measurements of fishery participation, following the methods used to select communities in the earlier profiling efforts of the NWFSC (hereafter named the West Coast Profiling Project).[8] These measurements include 1) the community's dependence on fishing and 2) the community's engagement in a specific fishery. The selection process continues to represent an experimental approach towards quantifying fishing involvement.

[8] Norman, Karma, Jennifer Sepez, Heather Lazrus, Nicole Milne, Christina Package, Suzanne Russell, Kevin Grant, Robin Petersen Lewis, John Primo, Emile Springer, Megan Styles, Bryan Tilt and Ismael Vaccaro. (2007). *Community profiles for West Coast and North Pacific Fisheries: Washington, Oregon, California, and other U.S. States*. U. S. Dep. Commer., NOAA Tech. Memo. NMFS-NWFSC-85, 602 p.

However, this is not the only way of estimating participation nor is it the singular approach sanctioned by NMFS. In effect, the project described here presents a novel and defensible means of quantifying the legal language spelled out in the MSFCMA:

> The term "fishing community" means a community which 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 United States fish processors that are based in such community. 16 U.S.C. 1802 §3 (16).

This definition includes commercial, recreational and subsistence fishing. As such, data from all three types of fishing were included in the selection criteria used here. In this project, the terms *dependence* and *engagement* are quantitatively defined in accordance with the definitions used in the West Coast Profiling Project, and then used in the community selection process for profile production. A community's dependence on fishing is:

> *a measure of the level of participation in a fishery relative to other community activities, and relative to all other communities linked to fishing in some way.*

A community's engagement in fishing is:

> *a measure of the level of participation relative to the overall level of participation in a fishery.*

In this study, dependence has been determined through a comparison of community involvement in commercial, recreational, and subsistence fishing to community population. Engagement is determined by comparing indicators that measure a community's participation in a fishery or fisheries relative to the aggregate participation in fisheries across the state of Alaska. Engagement refers to community participation by specific fishery, which required separation of data by fishery for each data element (e.g., weight or value of landings). In this case, all landings made in a community are broken down by fishery, and the community's relative involvement in a specific fishery is measured.

The specific fisheries used to indicate engagement represent the major fisheries management plan (FMP) categories of the North Pacific Fishery Management Council (e.g., Bering Sea/Aleutian Islands king and Tanner crabs, Bering Sea and Aleutian Islands (BSAI) groundfish, Gulf of Alaska (GOA) groundfish, scallops), other major fisheries in Alaska (halibut, herring, salmon), and all remaining fisheries in Alaska divided between finfish and shellfish (i.e., other finish, other shellfish). Throughout each community profile, time series data between 2000 and 2010 were used to provide a look at how communities have changed their involvement in fishing over time.

Determining fishing dependence and engagement involves considering multiple dimensions of fishing history, infrastructure, specialization, social institutions, and gentrification trends in addition to economic characteristics. Due to the limitations of the methods used to select communities, our quantitative measurements of dependence and engagement have been based only on commercial, recreational and subsistence fisheries data. Our expectation is that the methods used here captured most Alaska communities that would qualify as engaged or dependent on the basis of most North Pacific fisheries.

In recognition that fisheries-specific indicators only provide a partial picture of fishing involvement, we have included historical, demographic, and other qualitative information in the narrative profiles. Importantly, while each community profile is intended to stand alone, fishing communities are not economic or social isolates, but contributing partners to regional (and often international) networks of labor pools, marine services, fisheries knowledge, and other socioeconomic phenomena.[9]

Defining "Community"

An important aspect of this project is that it compiles data at the community level. However, it is not always clear what counts as a community, and what a community's boundaries are. For the purposes of generating a list of communities from which to select, we generally considered as communities those localities listed as such in the various other databases we used. For the purposes of profiling, we generally treated as a community any location within the state of Alaska that the U.S. 2000 Decennial Census treats as a "place,"[10] – either an incorporated community or a "census designated place" for unincorporated areas that are nonetheless recognized as place-level communities by the Census.

Some of the indicator data, however, involved self-reported information or data obtained directly from the state management agencies (e.g., Alaska Department of Fish and Game (ADF&G), Commercial Fisheries Entry Commission (CFEC)), often provided by persons who are not concerned with issues of place or community. Thus, every database includes both a creative array of spellings of community names, which needed to be standardized in order to correctly count data by community, and some of these communities are not recognized as 'places' by the Census. For spelling issues, the U.S. Geological Survey Geographical Names Information System was the final arbiter for disagreements.[11] Latitude and longitude information, where available in the data, was particularly helpful in determining whether two communities had similar names, or one community had multiple spellings. In the case of all data, community name spellings were standardized in the AKFIN database in a joint effort between AKFIN and AFSC staff.

Communities listed in the fisheries information databases which were not considered "places" by the Census -- and therefore did not have data for a place-level population -- were generally not included in the selection procedure. Some of these "communities," such as "Bristol Bay," arise in the data because a person recorded something other than a recognized community as their residence, or in the case of "Bristol Bay," listed it as the homeport of their vessel. In other cases, the community or sub-community has been subsumed by a larger "place" in the U.S. Census. Where this latter situation was detected prior to the selection procedures, fisheries data for sub-communities were combined with fisheries data for the Census place-level community for the purpose of selection.

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[9] Sepez, J., K. Norman, A. Poole, B. Tilt. (2006). Fish Scales: Scale and Method in Social Science for North Pacific and West Coast Fishing Communities. Human Organization, Autumn.

[10] "Place" refers to one of the geographies used by the U.S. Census Bureau, which include geographies generally larger than place, such as state and county, and geographies generally smaller than place, such as tract and block group.

[11] U.S. Geological Survey. (n.d.). *Geographical Names Information System*. Retrieved October 29, 2012 from http://geonames.usgs.gov/.

In addition, it is important to note that many communities in this document are extremely intertwined socially and economically with neighboring communities. It is also the case that community boundaries are defined and recognized differently by different agencies, and in different situations. We found that many of our data sources did not always correspond in their treatment of intertwined communities. Thus, for some communities, the fisheries-related data was available for two nearby places, while the U.S. Census gives place-level information that treats the two as one. In addition, we also encountered communities which were named in non-CFEC fisheries data (e.g., fish tickets or vessel registrations), but for which no Census information was available. We dealt with these cross-agency community designation disparities and other data gaps, on a case-by-case basis. More detailed information on each case is available in Table 1.

Table 1.Combined, Unrecognizable and Subsumed Communities.

Community*	**Data Issues**	**Treated as separate places by:**			**Action**
		CFEC	**Census**	**Other**	
Akhiok and Alitak Bay	There was no individual information available for Alitak Bay in the Census or the Alaska Department of Community and Rural Affairs (DCRA) Community Database. CFEC names it as a separate community, but does not separate the data from Akhiok data. Alitak Bay shows up separately in fish ticket data due to the presence of a processor.	No	No	Yes	Alitak Bay not profiled individually, but fishing information is included in the Akhiok profile. Alitak Bay is also discussed in sub-regional introduction for Kodiak.
Anchorage, Girdwood, Eagle River, Chugiak	Data for Anchorage, Girdwood, and Eagle River/Chugiak are given separately by the CFEC, but these are not treated as separate "places" in Census or other data. For crew data, the overall crew numbers are reported as combined (based on ADF&G data), but CFEC's reported numbers for Girdwood and Eagle River/Chugiak are also reported.	Yes	No	No	Combined during selection procedures, general data reported as combined in Anchorage profile, followed by separated CFEC data.
Excursion Inlet and Funter Bay	Excursion Inlet and Funter Bay are named separately in the CFEC database, but information is only given for the two combined.	No	No	Yes	Combined in Excursion Inlet profile.
Hobart Bay (HB), Idaho Inlet (II), and Skagway (S)	Hobart Bay, Idaho Inlet, and Skagway are all named separately in the CFEC database, but information is only given for the three combined. Hobart Bay and Skagway are treated as separate in all other data sources, while Idaho Inlet does not appear in other data sets.	No	HB = Yes II = No, S = Yes	HB = Yes II = No, S = Yes	Combined in Hobart Bay profile.

Table 1. Cont'd. Combined, Unrecognizable and Subsumed Communities.

Community*	Data Issues	Treated as separate places by:			Action
Juneau (J), Douglas (D)	Douglas was fully annexed into the Juneau City and Borough in 1970. Therefore, the U.S. Census has since combined demographic data for Douglas with Juneau. The CFEC also does not recognize Douglas as a separate place.	No	No	No	Combined in Juneau profile.
		CFEC	**Census**	**Other**	
Ketchikan (K) and Ketchikan East (KE) and Ward Cove (WC)	The CFEC names "Ketchikan East" separately, but does not give separate data for it. Ketchikan East is not recognized as a separate place by other data sources. CFEC data is given separately for Ward Cove and Ketchikan. We combined Ward Cove with Ketchikan data because Ward Cove does not appear separately in other (fish ticket and Census place-level) data.	K and KE = No, K and WC = Yes	No	No	Combined in Ketchikan profile.
Kodiak and Chiniak	Although the U.S. Census treats Kodiak and Chiniak as separate "places," the CFEC does not give separate data for the two.	No	Yes	Yes	Combined in Kodiak profile.
Nome and Council	Council is considered an Alaska Native Village Statistical Area by the U.S. Census Bureau and provided no demographic information in 2010. In addition, the CFEC does not	No	No	No	Combined in Nome profile
Unalaska and Dutch Harbor	Although CFEC separates these data, U.S. Census does not treat Dutch Harbor as a separate "place."	Yes	No	Yes	Combined for profile of "Unalaska/Dutc h Harbor"
Whale Pass (WP), Tokean (To), Tuxekan (Tu), and Noyes Island (NI)	Whale Pass, Tokean, Tuxekan, and Noyes Island are all named in the CFEC database, but information is only given for the five combined. Whale Pass and Port Protection are treated as separate places by the Census, but the others are not. Whale Pass and Port Protection also show up independently in fish ticket data, but the others do not.	No	WP = Yes, T ,T and NI = No	WP = Yes To, Tu and NI = No	Combined in Whale Pass profile

*Bold indicates the main community that was profiled in this document. Other communities listed in the first column were subsumed into the bolded community's profile. The parameters and constraints indicated in the Data Issues column ultimately drove the treatment of the communities as indicated in the Action column.

Data Envelopment Analysis

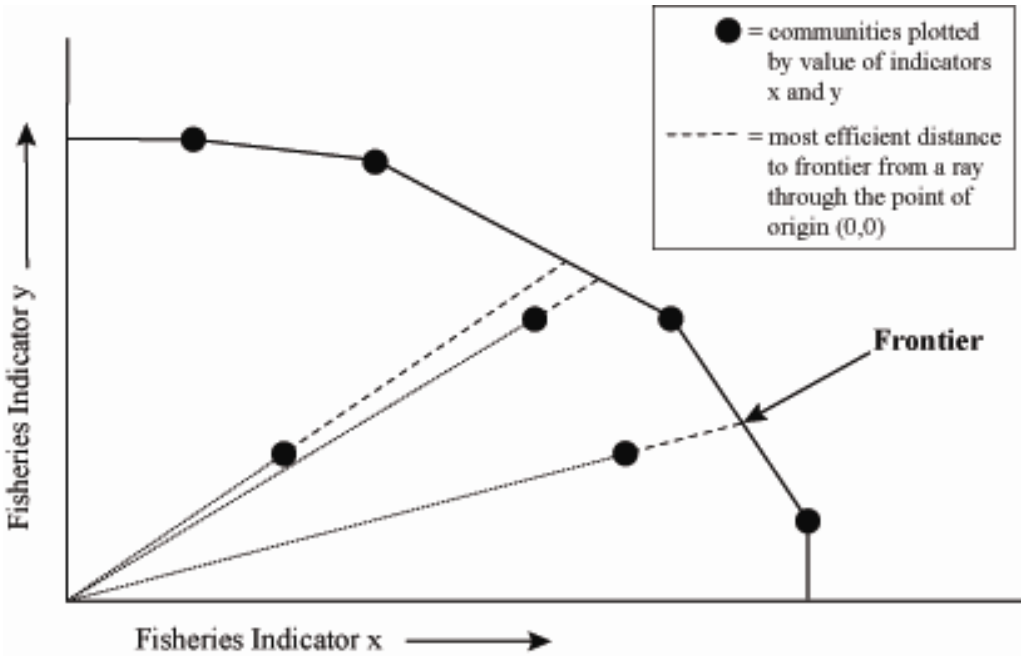
The number of communities to be profiled was determined using a quantitative selection process that entailed two steps. First, indicators were analyzed using a modeling technique referred to as Data Envelopment Analysis (DEA), an established analytical method that attributed a score to each community based on multiple indicators of participation in various fisheries. At its most basic, the DEA technique is a non-parametric approach to measuring participation and allows for the incorporation of multiple indicators simultaneously. Additionally, the method does not require a pre-determined structural relationship between inputs and outputs, which allows for flexibility in the estimation of a "frontier" of fisheries participation.

Typically, DEA produces an efficiency frontier for multiple quantitative indicators, and proximity to that frontier presents a means of comparing units for multiple measures at the same time (Figure 1). Each input is considered with a weight most suitable to that input. For each unit in the analysis, a series of relative efficiencies is obtained using both those weights most favorable to itself and those most favorable to other units in the analysis. Thus, the DEA model provided a means of analyzing and scoring communities according to their proximity to an efficiency frontier (Figure 1), wherein that proximity measured each individual community's relative level of fisheries involvement.

An overall frontier of participation was estimated based on a community's score for each indicator. As a result, communities that lie along the frontier have demonstrated strong participation according to the indicators in the model. Regardless of a community's score either for dependence or engagement in North Pacific fisheries, the amount of attention devoted to profiling the particular community was not affected. All communities, once selected through the rank ordering of their DEA scores, were given the same treatment in the narrative profiles themselves.

In order to consider fishing *engagement* and *dependence* separately, we implemented two separate runs of the DEA model, both of which were output-oriented models. Datasets were selected on the basis of availability and informational value. The community selection process used particular indicators chosen from all the available datasets to best indicate a high level of involvement in fisheries. Indicators based on permit and harvest data from the year 2009 were used to measure a variety of types of involvement in North Pacific fisheries.

Figure 1. Graphic representation of the data envelopment analysis (DEA) model fisheries involvement frontier for two dimensions.



Source: Sepez, J., K. Norman, A. Poole, B. Tilt. (2006). Fish Scales: Scale and Method in Social Science for North Pacific and West Coast Fishing Communities. Human Organization, Autumn.

Twenty-one quantitative indicators of fishing dependence and 48 quantitative indicators of fishing engagement in North Pacific fisheries were used in the community selection process (Tables 2 and 3). The indicators include information specific to state- and federally-managed commercial, recreational and subsistence fisheries in Alaska, across various species and different types of involvement in those fisheries. These indicators allowed for consideration of communities that are engaged in or dependent on commercial, recreational and subsistence fisheries as well as just one or two categories of fishing. Additional data, which we were unable to include in the selection process for a variety of reasons, was included in the community profiles themselves (detailed below the *Profile Structure and Sources* section below).

Data inputs in the first run of the model, measuring *dependence*, were community populations,[12] and outputs were counts associated with each indicator (Table 2). In determining dependence, aggregated tallies of activity in all species categories were used and indicators were not broken down by specific fishery. For example, for the community of Sitka, in Southeast Alaska, the input was a population of 8,627, and outputs were counts of crew licenses and various types of fishing permits held in the community, charter guide businesses, and pounds of fish and marine mammals harvested for subsistence, to name a few.

In a second run of the model, in order to determine engagement, each data element was broken down by specific fishery to illustrate how important a particular community's participation is in that fishery relative to the participation of other communities. Data inputs were

[12] Alaska Department of Labor. (2011). *Current population estimates for Alaskan Communities*. Retrieved April 15, 2011, from http://labor.alaska.gov/research/pop/popest.htm.

all equalized to one. Outputs for each community were the proportions of each North Pacific fishery in which the community was in some way involved divided by the state total for that indicator (Table 3). For example, 5.6% of all crew licenses issued to Alaskan residents were issued to residents of Sitka.

Using these two DEA scores – for dependence and engagement – communities were then ranked based upon their proximity to the participation frontier, determined by their relative counts in each of the indicator categories. The valid results from both lists produced scores ranging between zero and one; one being the highest possible score and showing up on the frontier indicating higher dependency on or engagement in fishing, and zero being the lowest possible score and the farthest point from the frontier indicating lower dependency on or engagement in fishing. The ranked lists of communities were subsequently subjected to a median-based analysis in the second step of the selection process. The scores of the communities in each DEA model (the dependence and engagement models) were used to determine the median score for each model. The median threshold was selected as it provided the clearest method of selecting all communities that are commonly heavily involved in either commercial, recreational or subsistence fishing. Each community received two scores, one for engagement and one for dependence. A community was identified for profiling if it received at least one score above the median. The final list of profiled communities consists of those which demonstrated the highest involvement in commercial, recreational and subsistence fisheries in 2009, relative to the others.

Table 2. Outputs used in the DEA dependence model.

Commercial fishing indicators	
# of permit holders:	Total net pounds landed (all species) [4]
• Gear permits[1]	Total ex-vessel value of landings (all species) [4]
• Setnet permits[1]	# of vessels homeported in community[1]
• Federal fisheries permits[2]	# of vessel owners registered in community[1]
• CFEC permits (all species) [1]	# of crew licenses issued to residents[5]
• American Fisheries Act permits[2]	
• Halibut quota share account holders[3]	
• Sablefish quota share account holders[3]	
• Crab quota share account holders[3]	
Recreational fishing indicators	
# of sportfishing licenses sold in community[5]	# of sportfishing guide businesses[6]
# of sportfishing licenses sold to residents[5]	# of sportfishing guide licenses issued to residents[6]
Subsistence fishing indicators	
# Subsistence Halibut Registration Certificates (SHARC) issued to residents[7]	Total pounds harvested (all fish and marine invertebrates)[8, 9]
# of salmon harvested[7]	Pounds of marine mammals harvested (all species) [10, 11, 12]

Note: Data compiled by Alaska Fisheries Information Network for Alaska Fisheries Science Center, Seattle. URLs for all data sources not publicly available as some information is confidential.

[1] CFEC. (2011). *Alaska commercial fishing permits, permit holders, and vessel licenses, 2000 – 2010*.

[2] NMFS Alaska Regional Office. (2011). *Data on License Limitation Program, Alaska Federal Processor Permits (FPP), Federal Fisheries Permits (FFP), and Permit holders*.

[3] NMFS Alaska Regional Office. (2011). *Alaska Individual Fishing Quota (IFQ) permit data*.

[4] ADF&G and CFEC. (2011). *Alaska fish ticket data*.

[5] ADF&G Division of Administrative Services. (2011). *Alaska sport fish and crew license holders, 2000 – 2010*.

[6] ADF&G Division of Administrative Services. (2011). *Alaska sport fish guide licenses and businesses, 2000 – 2010*.

[7] Fall, J.A. and D. Koster. (2011). *Subsistence harvests of Pacific halibut in Alaska, 2009*. Alaska Department of Fish and Game Division of Subsistence, Technical Paper No. 357, Anchorage.

[8] Fall, J.A., C. Brown, N. Braem, J.J. Simon, W.E. Simeone, D.L. Holen, L. Naves, L. Hutchinson-Scarborough, T. Lemons, and T.M. Krieg. (2011, revised). *Alaska subsistence salmon fisheries 2008 annual report*. Alaska Department of Fish and Game Division of Subsistence, Technical Paper No. 359, Anchorage.

[9] ADF&G Division of Subsistence. (2011). *Community Subsistence Information System (CSIS)*. Retrieved February 2011 from http://www.adfg.alaska.gov/sb/CSIS/.

[10] Frost, Kathy J., and Suydam, Robert S. (2010). *Subsistence harvest of beluga or white whales (Delphinapterusleucas) in northern and western Alaska, 1987–2006*. Journal of Cetacean Research and Management 11(3): 293–299.

[11] U.S. Fish and Wildlife Service Office of Marine Mammals Management. (2011). *Marking, Tagging and Reporting Program data bases for northern sea otter, Pacific Walrus and polar bear*. Anchorage, Alaska.

[12] Wolfe, R.J., Fall, J.A. and M. Riedel. (2009). *The subsistence harvest of harbor seals and sea lions by Alaska Natives in 2008.* Alaska Native Harbor Seal Commission and Alaska Department of Fish and Game Division of Subsistence, Technical Paper No. 347, Anchorage.

Table 3. Outputs used in the DEA engagement model.

Commercial fishing indicators		
# of permit holders:	*Ex-vessel value of:* [3]	*Net pounds landed of:* [3]
• Gear[1]	• Crab	• Crab
• Setnet[1]	• BSAI groundfish	• BSAI groundfish
• Federal fisheries permits (FFP)[2]	• GOA groundfish	• GOA groundfish
• CFEC halibut[1]	• Other finfish	• Other finfish
• CFEC herring[1]	• Halibut	• Halibut
• CFEC salmon[1]	• Herring	• Herring
• CFEC sablefish[1]	• Salmon	• Salmon
• CFEC rockfish[1]	• Other shellfish	• Other shellfish
• CFEC other finfish[1]	• Scallop	• Scallop
• CFEC crab[1]	# of crew licenses[4]	
• CFEC other shellfish[1]	# of halibut quota shares held[5]	
• Groundfish limited license program (LLP)[2]	# of sablefish quota shares held[5]	
• Crab (LLP)[2]	# of crab quota shares held[5]	
Recreational fishing indicators		
# of sportfishing licenses sold in community[4]	# of sportfishing guide businesses[6]	
# of sportfishing licenses sold to residents[4]	# of sportfishing guide licenses issued to residents[6]	
Subsistence fishing indicators		
# Subsistence Halibut Registration Certificates (SHARC) issued to residents[7]	Pounds of halibuts harvested[7]	Pounds of other fish harvested[7, 8]
Pounds of marine invertebrates harvested[8]	# of salmon harvested[11]	Ice seal harvesting importance[10]
Pounds of marine mammals harvested[9]	# of beluga whales harvested[12]	# of Walrus harvested[13]

Note: Data compiled by Alaska Fisheries Information Network for Alaska Fisheries Science Center, Seattle. URLs for all data sources not publicly available as some information is confidential.

[1] CFEC. (2011). *Alaska commercial fishing permits, permit holders, and vessel licenses, 2000 – 2010*.

[2] NMFS Alaska Regional Office. (2011). *Data on LLPs, Alaska Federal Processor Permits (FPP), FFPs, and permit holders*.

[3] ADF&G and CFEC. (2011). *Alaska fish ticket data*.

[4] ADF&G Division of Administrative Services. (2011). *Alaska sport fish and crew license holders, 2000 – 2010*.

[5] NMFS Alaska Regional Office. (2011). *Alaska Individual Fishing Quota (IFQ) permit data*.

[6] ADF&G Division of Administrative Services. (2011). *Alaska sport fish guide licenses and businesses, 2000 – 2010*.

[7] Fall, J.A. and D. Koster. (2011). *Subsistence harvests of Pacific halibut in Alaska, 2009*. ADF&G Division of Subsistence, Technical Paper No. 357, Anchorage.

[8] ADF&G Division of Subsistence. (2011). *Community Subsistence Information System (CSIS)*. Retrieved February 2011 from http://www.adfg.alaska.gov/sb/CSIS/.

[9] Wolfe, R.J., Fall, J.A. and M. Riedel. (2009). The *subsistence harvest of harbor seals and sea lions by Alaska Natives in 2008*. Alaska Native Harbor Seal Commission and Alaska Department of Fish and Game Division of Subsistence, Technical Paper No. 347, Anchorage.

[10] Pers. Comm. with Lori Quakenbush on January 26, 2011, ADF&G, Division of Wildlife Conservation.

[11] Fall, J.A., C. Brown, N. Braem, J.J. Simon, W.E. Simeone, D.L. Holen, L. Naves, L. Hutchinson-Scarborough, T. Lemons, and T.M. Krieg. (2011), revised. *Alaska subsistence salmon fisheries 2008 annual report*. Alaska Department of Fish and Game Division of Subsistence, Technical Paper No. 359, Anchorage.

[12] Frost, Kathy J., and Suydam, Robert S. (2010). *Subsistence harvest of beluga or white whales (Delphinapterusleucas) in northern and western Alaska, 1987–2006*. Journal of Cetacean Research and Management 11(3): 293–299.

[13] U.S. Fish and Wildlife Service Office of Marine Mammals Management. (2011). *Marking, Tagging and Reporting Program data bases for northern sea otter, Pacific Walrus and polar bear*. Anchorage, Alaska.

Scores generated from both models ranged from 0.000 to 1.000.[13] The median score for the engagement model was 0.074, with 135 communities falling above the median, including 22 communities with a score of 1.000.[14] The median score for the dependence model was 0.401, with 140 communities falling above the median, including 54 communities with a score of 1.000.[15] A total of 39 communities fell above the median only in the engagement model, 37 fell above the median only in the dependence model, and 95 communities fell above the median in both models. In total, 171 unique communities fell above the median in one or both models (Table 4).

Based on a variety of other criteria, an additional 24 communities were profiled, for a total of 196 communities profiled for this project. This includes an additional 13 communities that did not meet the threshold for the DEA models; however, they were profiled in the previous version of the *Community Profiles for North Pacific Fisheries – Alaska*. These communities include Alitak Bay, Excursion Inlet, Fritz Creek, Hobart Bay, Ivanof Bay, Karluk, Kwigillingok, Port Moller, Port Protection, Prudhoe Bay, Twin Hills, Whale Pass and Willow. Since they were previously profiled, they are included in this updated version of the profiles as well. In addition, seven communities that are included in the Community Development Quota (CDQ) Program did not meet the threshold set for the DEA models, including Chevak, Ekuk, Ekwok, Levelock, Newtok, Portage Creek and Teller. Given their involvement in the CDQ program, they were also added to the list of communities to be profiled. Finally, an additional four communities were selected for profiling due to their participation in subsistence fisheries for which data was not available in 2009, including Akiak, Lower Kalskag, Shageluk and Tyonek. All communities profiled are presented in Figure 2.

[13] Some invalid results were due to communities having no data for the specific indicators used in the DEA model (due to minimal fisheries involvement), or were due to non-convergence in the DEA model which could have occurred for various reasons (the particular indicator mix, the scale of the different indicators relative to other communities). These communities were removed after consideration. Invalid communities due to DEA Non-Convergence include: Butte, Cohoe, Eklutna, Fox River, Kalifornsky, Kupreanof, Lower Kalskag, Mendeltna, Pope-Vannoy Landing, Thoms Place, Tolsona.

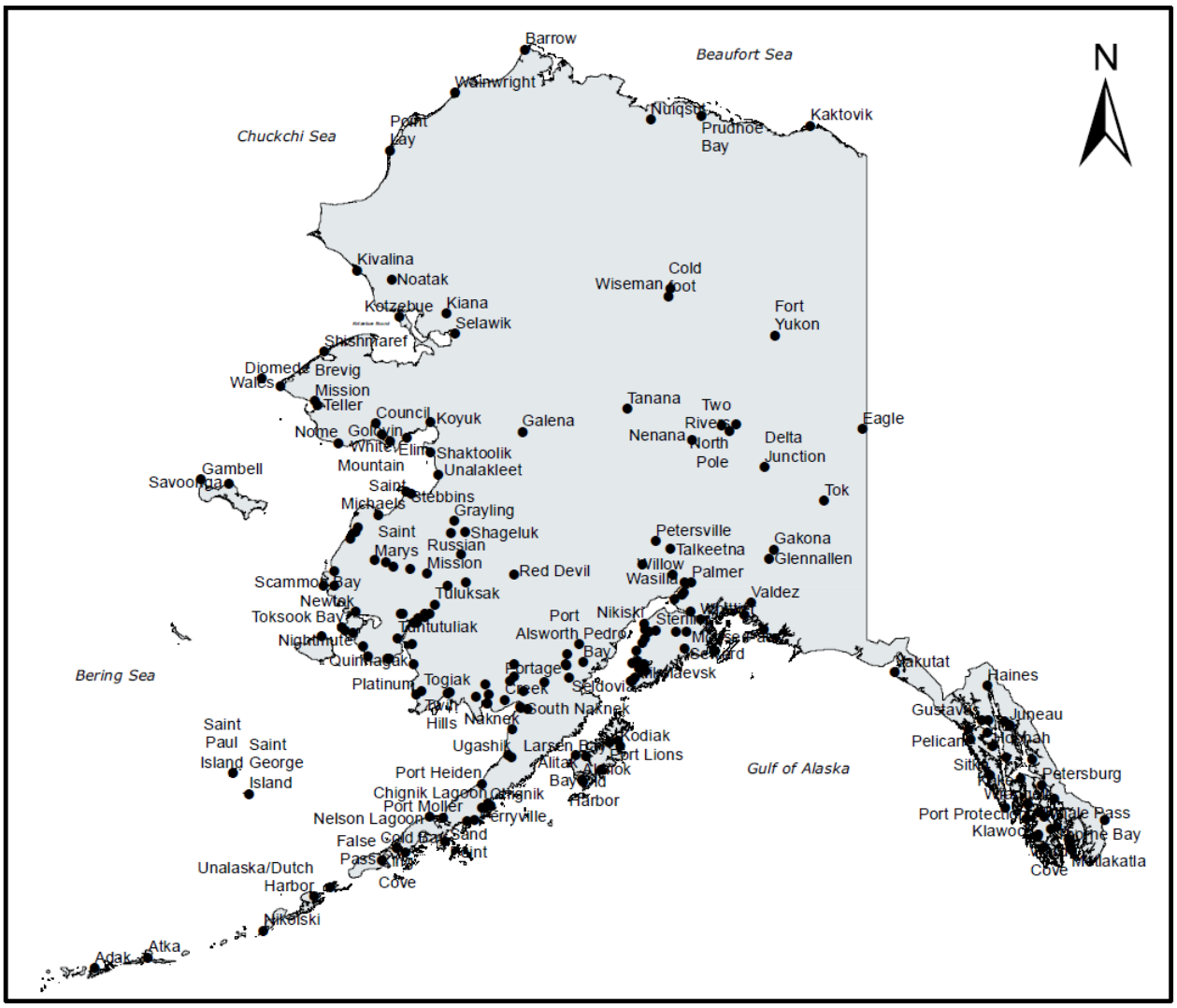
[14] Communities with engagement scores of 1.000 include: Anchorage, Bethel, Cordova, Craig, Emmonak, Gambell, Homer, Hooper Bay, Juneau, Ketchikan, Kiana, Kodiak, Kokhanok, Kotzebue, Petersburg, Petersville, Saint Paul Island, Seward, Sitka, Togiak, Unalaska and Wrangell.

[15] Communities with dependence scores of 1.000 include: Akutan, Alakanuk, Anchorage, Bethel, Chenega, Chignik, Chignik Lagoon, Cooper Landing, Cordova, Council, Dillingham, Edna Bay, Egegik, Elfin Cove, Emmonak, Gakona, Haines, Homer, Hoonah, Iliamna, Juneau, Kasilof, Kenai, Ketchikan, King Cove, Kodiak, Kotzebue, Larsen Bay, Manokotak, Mekoryuk, Meyers Chuck, Mountain Village, Naknek, Nelson Lagoon, North Pole, Old Harbor, Pelican, Petersburg, Pilot Point, Point Baker, Port Alexander, Saint Paul Island, Sand Point, Seward, Shishmaref, Sitka, Skwentna, Soldotna, South Naknek, Togiak, Tununak, Ugashik, Unalaska, Wasilla and Yakutat.

Table 4. Communities with DEA scores above the median.

Both models			Engagement model		Dependence model	
Adak	Iliamna	Pilot Station	Akhiok	Kwethluk	Aniak	Nikiski
Akiachak	Juneau	Port Alexander	Anvik	Larsen Bay	Brevig Mission	Ninilchik
Akutan	Kake	Port Lions	Atka	Nelson Lagoon	Chefornak	Noatak
Alakanuk	Kasigluk	Quinhagak	Barrow	Nikolski	Diomede	Nome
Aleknagik	Kasilof	Saint Mary's	Chenega	Nunam Iqua	Douglas	Nondalton
Anchor Point	Kenai	Saint Paul	Chignik Lake	Ouzinkie	Fort Yukon	Oscarville
Anchorage	Ketchikan	Scammon Bay	Clam Gulch	Pelican	Galena	Petersville
Angoon	Kivalina	Seldovia	Clarks Point	Pilot Point	Gambell	Point Lay
Bethel	Klawock	Seward	Coffman Cove	Platinum	Kiana	Russian Mission
Chignik	Kodiak	Shaktoolik	Cold Bay	Point Baker	King Salmon	Saint Michael
Chignik Lagoon	Koliganek	Shishmaref	Council	Port Alsworth	Kipnuk	Savoonga
Cooper Landing	Kotlik	Sitka	Edna Bay	Port Graham	Kokhanok	Selawik
Cordova	Kotzebue	Skwentna	False Pass	Port Heiden	Kongiganak	Sterling
Craig	Manokotak	Soldotna	Gakona	Red Devil	Koyuk	Tuluksak
Delta Junction	Marshall	Stebbins	Glennallen	Saint George	Moose Pass	Two Rivers
Dillingham	Mekoryuk	Talkeetna	Haines	Sand Point	Napaskiak	Valdez
Eek	Metlakatla	Tanana	Halibut Cove	South Naknek	Nenana	White Mountain
Egegik	Meyers Chuck	Thorne Bay	Hyder	Tatitlek	Newhalen	Willow
Elfin Cove	Mountain Village	Togiak	Kaktovik	Tenakee Springs	Nightmute	
Elim	Naknek	Toksook Bay	King Cove			
Emmonak	Nanwalek	Tuntutuliak				
Fairbanks	Napakiak	Tununak				
Golovin	New Stuyahok	Ugashik				
Goodnews Bay	Nikolaevsk	Unalakleet				
Grayling	North Pole	Unalaska				
Gustavus	Nuiqsut	Wainwright				
Holy Cross	Nunapitchuk	Wales				
Homer	Old Harbor	Wasilla				
Hoonah	Palmer	Whittier				
Hooper Bay	Pedro Bay	Wrangell				
Hydaburg	Perryville	Yakutat				
Igiugig	Petersburg					

Figure 2. Communities selected to be profiled.



Profile Structure and Sources

Each community profile contains six sections: *People and Place, Natural Resources and Environment, Current Economy, Governance, Infrastructure,* and *Involvement in North Pacific Fisheries*. In general, *People and Place* describes the location, history, and basic demographic structure of the community. *Natural Resources and Environment* describes the status of natural resources in the community and any hazards that may be present. *Current Economy* offers a picture of the current economic situation. *Governance* explains the structure of local and regional governance institutions. *Infrastructure* provides a description of the structure of governance, and the facilities of the community. Finally, *Involvement in North Pacific Fisheries* details the nature and level of community involvement in commercial, recreational, and subsistence fishing. To the extent feasible, data trends and information for the 2000 to 2010 time period, comparisons with equivalent statewide statistics and data related from a survey of Alaskan fishing communities that was conducted by AFSC in 2011 (hereafter referred to as the 2011 AFSC survey) were

provided in each section. In cases where communities provided additional information about their involvement in North Pacific fisheries in the 2011 AFSC survey or where additional information was found, it was included in an *Additional Information* section at the end of the profile. Below, we outline how we compiled and used the data for each of these sections. We also discuss some of the methodological challenges we encountered along the way, and how we sought to resolve them.

People and Place

Each community is situated in time and space by providing information not only on the current condition of the community but also on its historical development. Each community is first described in terms of geographic location and demographics, followed by a brief account of local history. We used data from the U.S. Census Bureau,[16] Alaska Department of Labor and Workforce Development,[17] and the Alaska Department of Community and Rural Affairs (DCRA),[18] as well as scholarly and popular works, to provide a rounded picture of each community. In addition, data related to seasonal and permanent population counts were provided from the 2011 AFSC survey.

The depth of information available at the community level was highly variable from place to place. A wealth of information is available, for example, about urban centers such as Anchorage and Juneau, while information about smaller and more remote communities is less readily available. This is reflected in the level of detail with which we were able to portray the history and development of each community and provide insight into the demographic composition of the communities. All profiles report the number of inhabitants, a short demographic evolution when possible, the gender structure, median age, educational attainment, racial and ethnic composition, and an indication of how many community members were born outside of the U.S. In addition, some profiles report further information if it helped to illustrate the character of the community, such as age structure, percentage of individuals living in family households,[19] and ancestry.

To compile brief accounts of local history, historical information was gleaned from various relevant websites and print material, and was cross-checked for verification between multiple sources. Where we encountered a lack of historical information, we give the best possible illustration of a community's origins but likely do not adequately portray its past. In a few cases

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[16] U.S. Census Bureau. (n.d.). *Profile of selected social, economic and housing characteristics of all places within Alaska*. Datasets utilized include the 2000 (SF1 100% and SF3 sample data) and 2010 (Demographic Profile SF) Decennial Census and the 2010 American Community Survey 5-year estimates. Retrieved November 1, 2011 from http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml.

[17] Alaska Department of Labor and Workforce Development. (2011). Current population estimates for Alaskan Communities. Retrieved April 15, 2011, from http://labor.alaska.gov/research/pop/popest.htm.

[18] The Alaska Department of Community and Rural Affairs (DCRA) provides perhaps the most comprehensive information about the social and economic characteristics of Alaskan communities, boroughs, and census areas. The DCRA maintains the *Community Database* at: http://www.commerce.state.ak.us/dca/commdb/CF_BLOCK.htm..

[19] The U.S. Census Bureau provides this definition of household: "A household includes all of the people who occupy a housing unit. A housing unit is a house, an apartment, a mobile home, a group of rooms, or a single room occupied (or if vacant, intended for occupancy) as separate living quarters. Separate living quarters are those in which the occupants live separately from any other people in the building and that have direct access from the outside of the building or through a common hall. The occupants may be a single family, one person living alone, two or more families living together, or any other group of related or unrelated people who share living quarters."

community history has been reported at the Borough/Census Area level because we were unable to discover more detailed information.

Natural Resources and Environment

This section concentrated on providing an overview of the local climate and terrain, natural resources available locally and the state of the local environment. Information is also presented regarding local parks and protected areas, including the resources that they are designed to protect, natural resource based industries that are relied on locally, natural hazards and hazardous environmental clean-up sites.

Current Economy

For data on the current economic conditions in each community we consulted the U.S. Census Bureau,[20] the Alaska Department of Labor and Workforce Development (DOLWD)[21] and the Denali Commission.[22] The description of the current economy is useful for understanding where fishing stands in relation to other economic opportunities in a community, and predicting how a community might be affected when faced with a change in fishing patterns. Statistics are provided regarding important local job providers, any available information about community members' reliance on subsistence, inflation adjusted income, recognition of distressed status, poverty rates and the distribution of the labor force across various occupational and industry categories. We also report both the percentage of unemployed workers and the percentage in the labor force (not seeking work) in order to provide as complete a picture as possible of unemployment for each community. We faced several challenges during the process of combining data from these disparate sources. Information on unemployment from the DOLWD, for example, occasionally did not match the information reported by the U.S. Census and does not include self-employed or federally employed workers. As such, we routinely provide data from both sources. In addition, it should be noted here that the unemployment statistics have been calculated to report community residents who are in the labor force but are unemployed. This is in an attempt to differentiate it from the indicator with residents who are not in the labor force. However, the graphical representations of employment structure do not make this distinction in order to have all three measures as proportions of the total community population 16 years and above. Finally, the number reported for a community's employment in fishing is most likely an underestimate of the total number of fishermen in the community. The U.S. Census may not accurately capture this demographic as many fishermen are "self employed," an undistinguished category on the U.S. Census forms. Fishermen may also categorize themselves as employed in a different category than fishing if they fish for part of the year and hold another job for the rest of the year.

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[20] U.S. Census Bureau. (n.d.). *Profile of selected social, economic and housing characteristics of all places within Alaska*. Datasets utilized include the 2000 (SF1 100% and SF3 sample data) and 2010 (Demographic Profile SF) Decennial Census and the 2010 American Community Survey 5-year estimates. Retrieved November 1, 2011 from http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml.

[21] Alaska Department of Labor and Workforce Development. (n.d.). *Alaska Local and Regional Information Database*. Retrieved April 23, 2012 from http://live.laborstats.alaska.gov/alari/.

[22] Denali Commission. (2011). *Distressed Community Criteria 2011 Update*. Retrieved April 16, 2012 from www.denali.gov.

Table 5. Governance structures present among Alaskan communities.

Type of governance structure	Type	Description
1st Class or Home Rule city	Municipal	A First Class City, or Home Rule City, must have at least 400 permanent residents.
2nd Class City	Municipal	A Second Class City must have at least 25 resident voters.
Recording district	Municipal	The Alaska Court System established 34 recording districts established for the administration of a system for recording and filing of documents
Strong mayor form of government	Municipal	An elected mayor is given administrative authority for day to day operations of the community
Hired manager form of government	Municipal	The elected mayor is a figurehead or lobbyist with veto powers. A city manager would be hired by the mayor and city council to run the day to day operations
Village and Regional native corporation	Tribal	220 village and 13 regional corporations established under the Alaska Native Claims Settlement Act (ANCSA) that were awarded monetary and property compensation after the path of the Alaska pipeline was determined. These corporations provide economic and social benefits to their members, all of which are Alaska Natives and their descendents born before 1971.
Village Council	Tribal	Each federally recognized Alaska Native group has a village council to act as a politically representative body for the community. There are over 226 Native village councils in the state.

Governance

Governance structures can vary tremendously within Alaska, with city, borough, Native village, and state interests each represented by separate entities. For an explanation of tribal and municipal governance structures present in Alaskan communities, refer to Table 5. Principally, the local governance structure (both Native and municipal) is described as well as trends in the total municipal revenue, sales tax revenue, State and Community Revenue Sharing contributions, and fisheries-related grants over the 2000 to 2010 time period. Information is also provided regarding the location of the nearest offices of governmental organizations important to the fishing industry: NMFS,[23] the ADF&G,[24] the Alaska Department of Natural Resources (DNR), Department of Commerce, Community, and Economic Development (DCCED) and the U.S. Bureau of Citizenship and Immigration Services,[25] formerly known as Immigration and Naturalization Services. As the key bodies regulating fisheries, access to NOAA, ADF&G, DNR and DCCED can help with the flow and clarification of information (from research reports to

[23] NMFS' Alaska Regional Office website (http://www.fakr.noaa.gov/default.htm) provides a list of all branch offices in Alaska.
[24] The Alaska Department of Fish and Game website (http://www.adfg.state.ak.us/) provides a list of all branch offices in Alaska.
[25] The U.S. Bureau of Citizenship and Immigration Services lists most field offices in their Office Locator (https://egov.uscis.gov/crisgwi/go?action=offices.type&OfficeLocator.office_type=LO), although the website does not post a complete list of field offices.

grounds closures), as well as influencing a community's enfranchisement in a regulatory system. In addition, the location of permanent or semi-permanent U.S. Bureau of Citizenship and Immigration Services can affect the labor practices of industry, particularly the seafood processing sector, through level and intensity of monitoring, and may also affect use of local services by undocumented residents.

Infrastructure

The infrastructure section is an overview of the community's connectivity with other areas of the state, physical infrastructure that support the community, medical services and educational opportunities. In many cases, the primary rationale for offering descriptions of facilities is to reveal the accessibility of the outside world to community members, particularly with regard to communication and travel. This is especially significant given the emphasis on stakeholder participation in fisheries management, wherein frequent Fishery Management Council meetings are held in differing locations in each management region. Facilities descriptions also offer insight into a community's investment and dependence in the industry and the relative importance of particular assets. A community, for example, with one fish processing plant may be especially vulnerable to any fish allocation decisions in its associated region. In addition, information about schools, healthcare, utilities, and public safety facilities are important because such amenities may factor into people's decisions about where to live. Marine facilities are described where available to give an illustration of the physical infrastructure serving the local fishing industry in its commercial as well as recreational dimensions. This information has been primarily sourced from the websites of individual communities, the 2011 AFSC survey, harbors and marinas, and when possible or necessary, content has been supplemented by telephone communications with community staff.

More important than distance, in many ways, is cost of travel. Travelocity[26] and Kayak,[27] on-line travel planning services, as well as many small airline companies provided information on the cost of air travel between each community and Anchorage; costs were based on travel during June, 2012. Although Anchorage is not the only place one might need to travel to participate in governance or other aspects of fisheries management, it is such a travel hub for the state that costs for continuing on to locations such as Seattle or Washington, D.C. may be assumed to be uniform.

Descriptions of physical and even social infrastructure may have a tendency to treat communities in isolation. However, the ways in which a community is connected to other places is a critical element of how it functions. Connectivity or isolation can affect language, culture, trade, tourism, health, opportunity, and quality of life – though it is not always possible to say in what manner, as individuals differ in what they consider desirable. Connectivity or isolation can also be difficult to measure, as actual travel is always more than a matter of mere distances. Cost, for example, may be more prohibitive of travel than distance. Weather patterns and landing/docking facilities may also affect connectivity/isolation. If a community's air strip is inaccessible due to visibility or storm conditions for days at a time, price and distance may have less effect on participation in out-of-town business than weather windows. In addition, Anchorage is considered the central economic hub in Alaska, with the assumption that access to

[26] Prices were retrieved from Travelocity's home page at http://www.travelocity.com.
[27] Prices were retrieved from Kayak's homepage at http://www.kayak.com.

urban power centers is an important part of participation in North Pacific Fisheries, and that Anchorage is the most consistent and influential locus (though not the only one) of fisheries governance. Juneau, the state capital, is also important in this respect, but is less of an economic center. Seattle is also very important, except that, from some Southeast Alaska locations, most air trips to Seattle probably go through Anchorage.

Physical infrastructure – as the foundation of a logistical basis for supporting both economic and social activities – is also indicative of how a community may respond to change. The DCRA, community development plans and the 2011 AFSC survey provided detailed information on the physical facilities in each community, including marine, sea and land-based facilities. In addition, individual chambers of commerce, particularly for the larger communities, were consulted regarding local businesses and employment structures. Facilities information includes data on basic support systems such as roads, airports, docks, water, and electricity, as well as institutions which support the community such as and public safety offices. Information was also provided regarding locally and regionally available medical services and educational opportunities.

Involvement in North Pacific Fisheries

In nearly every case, the section on involvement in North Pacific fisheries is the longest and most detailed for each community. It was our goal to provide the most comprehensive information possible on commercial, recreational, and subsistence fishing practices for each community, based on available data. A significant amount of information is provided on the history and evolution of fisheries within each community as well as in the region surrounding the community. Characterization of fisheries is both in terms of the nature and degree of involvement. Sections are included that provide information on shore-side processing plants in the community and fisheries-related revenue that the community received between 2000 and 2010. The commercial fishing section contains information on vessel owners, crew members, commercial permits by species, geographic fishery and gear type, federal catch share program participation, as well as information on processing activities and landings both in the community and by residents of the community. This information was compiled from the CFEC[28] and NMFS Alaska Regional Office.[29] In addition, information provided in the 2011 AFSC survey regarding the most common gear types used, the seasonality of fishing in the community and the most important species to the community.

The recreational fishing section outlines the major sport species in each community, as well as sport license sales and charter and guiding services. ADF&G provided the data for this

[28] The Commercial Fisheries Entry Commission is an agency responsible for promoting the sustained-yield management of Alaska's fishery resources by regulating entry into the fisheries. CFEC provides logs of all fishing permits issued by the State of Alaska. Such a permit is required to land fish at a shore-based processor, even if the fish were taken in a federally-regulated fishery. Source: Alaska Department of Fish and Game, and Alaska Commercial Fisheries Entry Commission. (2011). *Alaska fish ticket data, commercial fishing permits, permit holders, and vessel licenses, 2000 – 2010*. Data compiled by Alaska Fisheries Information Alaska Fisheries Information Network for Alaska Fisheries Science Center, Seattle. [URL not publicly available as some information is confidential.]

[29] National Marine Fisheries Service. (2011). *Alaska Individual Fishing Quota (IFQ) permit and Alaska processors' Weekly Production Reports (WPR) data*. NMFS Alaska Regional Office. Data compiled by Alaska Fisheries Information Network for Alaska Fisheries Science Center, Seattle. [URL not publicly available as some information is confidential.]

section.[30,31,32] Each profile includes data on the number of sport fish guide businesses, guide licenses issued to residents, sport fishing licenses issued to residents (irrespective of point of sale), and sport fishing licenses sold in the community (regardless of license holder residence). In addition, where available, information on the species caught by private anglers and guided charter clients was reported.[33,34] Each community was associated with one of ADF&G's Alaska Sport Fishing Survey Areas, including reports of saltwater and freshwater angler days fished in the area by Alaskan residents and non-Alaska residents.

The subsistence fishing section provides a description of the importance of subsistence harvests to the community. Where available, data were reported regarding subsistence activities in each community, including per capita harvests, percentage of households using subsistence resources, permits held by residents or households (i.e., subsistence salmon permits and Subsistence Halibut Registration Certifications (SHARC)) and the composition of subsistence harvests (i.e., salmon, marine invertebrates, halibut, other fish and marine mammals). Data reported in this section were principally retrieved from the ADF&G Division of Subsistence,[35,36,37,38] the U.S. Fish and Wildlife Service,[39] and published reports;[40] however, additional data from other available sources were available for specific communities and were reported.

Our team encountered various challenges while compiling data for the fisheries section. A principle issue for the team was that certain types of fisheries-related data in Alaska are confidential under NOAA Administrative Order 216-100 and Alaska Statue 16.05.815. The agreement between NMFS and ADF&G regarding the release of data obtained from state fish

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[30] Alaska Department of Fish and Game. (2011). *Alaska sport fish guide licenses and businesses, 2000 – 2010*. ADF&G Division of Administrative Services. Data compiled by Alaska Fisheries Information Network for Alaska Fisheries Science Center, Seattle. [URL not publicly available as some information is confidential.]

[31] Alaska Department of Fish and Game. (2011). *Alaska sport fish and crew license holders, 2000 – 2010*. ADF&G Division of Administrative Services. Data compiled by Alaska Fisheries Information Network for Alaska Fisheries Science Center, Seattle. [URL not publicly available as some information is confidential.]

[32] Alaska Department of Fish and Game. (2011). *Alaska Sport Fishing Survey results, 2000 – 2010*. ADF&G Division of Sport Fish, Alaska Statewide Harvest Survey project. Data compiled by Alaska Fisheries Information Network for Alaska Fisheries Science Center, Seattle. http://www.adfg.alaska.gov/sf/sportfishingsurvey/ (Accessed September 2011).

[33] Ibid.

[34] Alaska Department of Fish and Game. (2011). *Alaska sport fish charter logbook database, 2000 – 2010*. ADF&G Division of Administrative Services. Data compiled by Alaska Fisheries Information Network for Alaska Fisheries Science Center, Seattle. [URL not publicly available as some information is confidential.]

[35] Alaska Department of Fish and Game. (2011). Community Subsistence Information System (CSIS). ADF&G Division of Subsistence. Retrieved February 2011 from http://www.adfg.alaska.gov/sb/CSIS/.

[36] Fall, J.A., C. Brown, N. Braem, J.J. Simon, W.E. Simeone, D.L. Holen, L. Naves, L. Hutchinson-Scarborough, T. Lemons, and T.M. Krieg. (2011), revised. *Alaska subsistence salmon fisheries 2008 annual report*. Alaska Department of Fish and Game Division of Subsistence, Technical Paper No. 359, Anchorage.

[37] Fall, J.A. and D. Koster. (2011). *Subsistence harvests of Pacific halibut in Alaska, 2009*. Alaska Department of Fish and Game Division of Subsistence, Technical Paper No. 357, Anchorage.

[38] Wolfe, R.J., Fall, J.A. and M. Riedel. (2009). *The subsistence harvest of harbor seals and sea lions by Alaska Natives in 2008*. Alaska Native Harbor Seal Commission and Alaska Department of Fish and Game Division of Subsistence, Technical Paper No. 347, Anchorage.

[39] U.S. Fish and Wildlife Service. (2011). *Marking, Tagging and Reporting Program data bases for northern sea otter, Pacific Walrus and polar bear*. Office of Marine Mammals Management. Anchorage, Alaska.

[40] Frost, Kathy J., and Suydam, Robert S. (2010). *Subsistence harvest of beluga or white whales (Delphinapterusleucas) in northern and western Alaska, 1987–2006*. Journal of Cetacean Research and Management 11(3): 293–299.

tickets requires at least four individuals or firms for a given statistic in order for that statistic to be made public. Some of the communities profiled in this document therefore contain no data on fish landings. In such cases, the profile indicates that one or two or three fish buyers or vessels landing catch are present, but contains statements that indicate that fish landings associated with those fish buyers or vessels is considered confidential.

The subsistence fishing section brought unique challenges of its own. First, a shifting policy environment due to conflict between the State and the Federal governments has made the accounting of subsistence practices difficult. Federal authority was extended over subsistence management on federal waters in Alaska in 1999 under Title VIII of the Alaska National Interest Lands Conservation Act (ANILCA). An interagency Federal Subsistence Board is managing most federal subsistence fishing, except for subsistence halibut, which, as a marine species, is now regulated by NMFS in conjunction with the North Pacific Fishery Management Council. Thus, subsistence fishing in a given community may be taking place under any of three jurisdictions: the State of Alaska, the Federal Subsistence Board, and the National Marine Fisheries Service.

Second, much of the subsistence data available at the community level is collected through household surveys conducted by the ADF&G Division of Subsistence that are not necessarily collected every year. Therefore, the data provided represents estimates of subsistence harvests in a community rather than accurate numbers. For example, marine mammal subsistence data for Steller sea lions, harbor seals, and spotted seal are extrapolated based on years where observations were made, where if a survey accounted for eight harbor seals in 2006, and no observations were made in 2007, it was assumed that eight harbor seals would be a sufficient estimate for that year despite the fact that no survey was conducted. In addition, household surveys were not conducted in every year in every community. Therefore, the lack of data reported for a given community in some years does not necessarily mean that residents of that community did not harvest those subsistence resources. Likewise, when harvest data is reported as the same in subsequent years, it is not necessarily an accurate count. In addition, for many of the subsistence harvest data collected by ADF&G, estimates were not available at the time of publication for any years after 2008.

Third, we relied on the quantitative characterization of subsistence harvesting provided by the ADF&G Division of Subsistence electronic Community Subsistence Information System (CSIS). The CSIS provided adequate data for most of our selected communities; however, the data was collected during different years for different communities. Where more than one year of data was available for a community, we used the year designated as most representative of the community's practices by ADF&G. In addition, ADF&G subsistence data is often lacking for a given community – and this is particularly true for the communities selected in Western Alaska, where subsistence uses are known to be high. In some cases, additional data on wild food harvests were found in reports published about individual communities.[41] Finally, it should be noted that the subsistence database contains harvest information for resources taken under a variety of regulations, including subsistence regulations, commercial fishery removals, and in some cases, recreational regulations. There is legitimate scholarly and policy debate over whether such harvests may all be considered subsistence. Although the CSIS uses the terminology of subsistence, it is probably more accurate to say that it reports on "home use" (J.

[41] Reports published by ADF&G are located at http://www.adfg.alaska.gov/sf/publications/.

Fall, ADF&G Division of Subsistence, pers. comm. 2003). In some, but not all, communities, home use and subsistence use are essentially the same.

Finally, it was challenging to understand how 'harvest' and 'use' of subsistence resources were entered into a calculation and resulted in a 'subsistence participation' estimate in the ADF&G database. It is important to understand this caveat because it is hard to characterize what the data in fact represented (not harvest, not use… but some vague 'participation' estimate); for example, the term 'participation' does not necessarily mean 'harvest participation,' and could in fact refer to consumption of subsistence resources rather than actual harvesting activities.

Figures and Tables

In addition to the narrative community profiles, each community has an associated set of figures and tables that provide graphical and tabular displays of various data. The *People and Place* section includes a table showing population counts from 1990 to 2010 and figures showing the racial and ethnic composition and the population structure from 2000 to 2010. The *Current Economy* section includes figures that display changes in local employment by industry and occupation between 2000 and 2010. The *Governance* section provides a table showing annual municipal revenue, sales tax revenue, State and Community Revenue Sharing contributions and fisheries-related grants received by the community between 2000 and 2010. Finally, the *Involvement in North Pacific Fisheries* section includes 13 tables with annual fisheries-related data between 2000 and 2010, including the following:

- Known fisheries-related revenue (in U.S. dollars) received
- Permits and permit holders by species
- Characteristics of the commercial fishing sector
- Community participation in federal halibut fisheries (including quota share account holders, quota shares held, and Individual Fishing Quota (IFQ) allotment)
- Community participation in federal sablefish fisheries (including quota share account holders, quota shares held, and IFQ allotment)
- Community participation in federal crab fisheries in the Bering Sea and Aleutian Islands (including quota share account holders, quota shares held, and IFQ allotment)
- Landed pounds and ex-vessel revenue, by species
- Landed pounds and ex-vessel revenue, by species, by residents
- Sport fishing trends (including sport fish guide businesses, sport fish guide licenses, sport fishing licenses sold to residents, sport fishing licenses sold in the community and angler days fished in salt and freshwater by Alaskan residents and non-residents)
- Subsistence Participation by Household and Species
- Subsistence Fishing Participation for Salmon, Marine Invertebrates and Non-Salmon fish
- Subsistence Halibut Fishing Participation
- Subsistence Harvests of Beluga, Polar Bears, Sea Otters and Walrus
- Subsistence Harvests of Steller Sea Lions, Harbor Seals, and Spotted Seals

Community Comments

After drafting the Alaska community profiles, the profiling team made a substantial effort to solicit comments and suggestions for improvement to the draft from within NOAA and from representatives of the communities profiled. Initially, the draft introduction and methods section, along with a few example profiles, were circulated within NOAA for internal review. Comments were also sought from other social scientists. The introduction and methods section was then revised in response to these comments.

The process of requesting comments from communities began with the formulation of a list of official contacts within the community, compiled from DCRA's Community Database Online,[42] as well as from internet searches for additional information. We included governmental bodies, such as city governments and village councils, as well as quasi-governmental resource management bodies such as village Native corporations and regional Native corporations. The goal was to involve a broad representation of any particular community, through official representative bodies, without creating an overwhelming task. The ability to locate contact information for the organizations was also a factor in compiling the list. Unfortunately, no contact information of any kind was located for six communities.[43] A total of 251 separate organizations were contacted by mail for the remaining 190 communities included in the profiling effort.

An initial email was sent out to the list of community contacts in August 2012 to inform them of the project and to provide them with an electronic draft of their community's profile. The email requested that if the recipient was not the correct person to review the profiles, that the correct person and contact information be indicated to the profiling team. Many contact people requested, by telephone, mail, email or fax, that the profiles be sent to someone else in the community. In response, we updated the contact list as appropriate. The email had the additional effect of alerting other people in the communities to the project and the request for comments, and many of these people requested information or copies of the profiles. Following this initial request, comments were received from ten communities. All comments were incorporated into the draft profiles for those communities.

Following this initial attempt, additional revisions were made to the profiling team and a second request for comments was sent to community contacts in November 2012. This time, all draft community profiles were posted to the AFSC website and communities were asked to download their profile from the website or to email us back for a copy by email, mail or fax. Overall, the reaction to the profiles project was positive and those community members who responded appeared to be enthusiastic about the profiling effort and appreciative of the opportunity to give suggestions. The content of the comments ranged from indicating that there were no corrections to be made, to providing a complex description of how subsistence in the village is affected by regulations, and providing whole sections to add to the profile from an already existing source. Some comments included a detailed review of the profile text, indicating such things as incorrect names, whereas others included few or no suggestions, and still others did not pertain directly to the text.

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[42] Alaska Dept. of Comm. and Rural Affairs. (n.d.). *Community Database Online*. Retrieved October 17, 2011 from http://www.commerce.state.ak.us/dca/commdb/CF_BLOCK.htm.

[43] Communities that we were not able to find contact information for included Cold Foot, Council, Kaktovik, Nuiqsut, Petersville and Red Devil.

For the majority of comments, the corrections suggested were to the data elements included in the facilities and governance sections, specifically correcting such things as village school information, the type of garbage collection/disposal, barge service, harbor information, lodging, the borough the community is included in, number of city council members or type of government, heating method, health care center, taxes, plumbing, transportation, and so on. These comments were particularly welcomed by the profiling team, since our limited resources sometimes prevented us from gathering information in this level of detail. Corrections were also included for such things as misspellings, the year a particular event occurred, general history, sport fishing information (such as species and lodges), businesses located in the community, processor information, and changes to commercial fishing permit information.

Disagreements with the Census data (demographics and employment) were expressed somewhat frequently, as were problems with the aggregation of fishing data for multiple communities as presented by the CFEC. In such cases, data from published sources were still relied upon, even if changes were suggested, in order to maintain the same standard for all profiles. These comments prompted us to check our sources, and numerical changes were made only if a recording error had been made; however in some cases the qualitative description was changed based on the comments received.

The comments provided were incorporated into the text using the profiling team's best judgment. Community members were considered experts on their own communities; however, in a few cases the suggested changes or additions could not be made for reasons of length or uniformity. For suggestions regarding facilities, governance, and history, community members' comments were in most cases directly incorporated. The types of comments that could not be incorporated tended to be general suggestions for the complete document which were not feasible given the scope, time frame, and resources of the project. A number of these general suggestions were constructive and will be noted for future profiling efforts.

STATE OVERVIEW

At the time of community selection, the 2010 Decennial Census had not yet been conducted; therefore, communities were selected from the 2000 Decennial Census for inclusion. The 2000 Decennial Census reports a total of 349 "Places" in Alaska; these are cities, towns, and communities with populations.[44] This was the total pool of Alaskan communities from which we selected communities for inclusion in the profile project. Applying the selection criteria described in the Methods section of this document, we selected 196 communities for profiling. As a result, of the 349 Census-recognized Places in Alaska in 2000, just over half (55.9% of Census Designated Places) were profiled in this document.

These numbers say several things about the nature of community involvement in commercial fishing in Alaska. First, the breadth of fishing involvement is significant. Second, it is striking that half of all Alaskan communities were involved enough in fishing to meet the selection criteria for this project. This substantial degree of participation points toward the significance of fishery-related activity to the overall economy and social organization of Alaska.

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[44] U.S. Census Bureau (n.d.). *Profile of selected social, economic and housing characteristics of all places within Alaska*. Datasets utilized include the 2000 (SF1 100% and SF3 sample data). Retrieved August 1, 2009 from http://factfinder.census.gov/home/saff/main.html. Website has since been updated to http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml.

This section of the profile document is meant to serve as an overview of the state as a whole. It provides aggregate information for these communities as well as a context in which to interpret this information.

People and Place

Location

Vast in scale and diverse in latitude and topography, Alaska exhibits tremendous variation in its climate, from maritime climatic zones in the Gulf of Alaska to arctic zones in the far north. All regions, however, are influenced to some extent by storms from the North Pacific Ocean as they move eastward from Asia. There is also a great deal of variability in Alaska's weather from one year to the next, primarily due to the shifting path of the jet stream.

Climate, topography and latitude all have an influence on the ecology of Alaska's different regions, and these ecological differences in turn determine the species composition of fish and patterns of human use. Alaska's diverse marine and terrestrial ecosystems provide habitat for 436 fish species, including 52 freshwater or anadromous species and 384 saltwater species.[45] From pelagic species to estuarine species to freshwater fish living in inland lakes and streams, Alaska produces a huge volume of aquatic life. The people who live in Alaska—Native groups whose ancestral history in the region stretches back thousands of years, and newly arrived residents alike—have co-evolved with Alaska's marine life, and have come to depend on it for their livelihoods.

Figure 2 shows the location of the 196 Alaskan communities selected for profiling in this document. Their geographical dispersion reflects several phenomena. From an ecological perspective, these communities, with a few exceptions, are located on or near the coastline where dependence on marine resources would be expected to be high. Their locations also reflect historical settlement patterns, first by Alaska Natives, and by Europeans beginning in the 18th century.

Demographic Profile

The communities selected for profiling all share a common reliance on fisheries-related activities, but represent a diversity of demographic, socio-economic and historical conditions. In terms of size, some communities are large municipalities that serve as regional economic hubs, such as Anchorage, while other communities are relatively isolated and have only a few dozen inhabitants. There are 145 city governments in Alaska[46] and 16 organized boroughs (Bockhorst 2001).[47] A First Class City, or Home Rule City, must have at least 400 permanent residents. A city may incorporate as Second Class if it has 25 voters. In the rest of the U.S., the difference between a 400-person and a 25-person (voter) community would hardly be recognized, since both communities would be considered quite small. But in Alaska, a population of 400 is

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[45] Armstrong, Rober H. (1996) *Alaska's Fish: A guide to selected species. Anchorage: Alaska Northwest Books.*
[46] Incorporated cities are automatically recognized by the Census as Places.
[47] Bockhorst, Dan. (2001). *Local Government in Alaska.* February 2001. Alaska Department of Community and Economic Development: Anchorage. Retrieved November 5, 2012 from http://www.commerce.state.ak.us/dca/lbc/pubs/Local_Gov_AK.pdf.

relatively substantial. Of the 352 Census communities (Places) in Alaska with a positive population in 2010, 60.5% (213 communities) had fewer than 400 residents, while 8.8% (31 communities) had fewer than 25 residents (Table 6). Other States have a very small percentage of their populations living in communities of less than 400.

One of the most important stories that emerges from these community profiles is how quickly many Alaskan communities have experienced demographic change. Population numbers in certain communities have swelled in recent years, a trend that is in large measure driven by fisheries-related activities. Unalaska, for example, was transformed from a community of less than 200 in 1970 into a booming small city of 4,376 residents in 2010.[48] This dramatic transformation coincided with the Magnuson-Stevens Fisheries Management and Conservation Act's "Americanization" of the groundfish fleet in North Pacific waters and the subsequent growth of the fish processing industry, both onshore and at sea. Communities in Southeast Alaska underwent a similar transformation in response to the growth of the international market in salmon, which has been tempered in recent years by foreign competition from the salmon farming industry. In general, communities that have experienced rapid population growth have also seen an influx of racial and ethnic minorities—particularly Asians and Latinos—as the fishing industry has become a global enterprise that draws labor from around the world. By contrast, many Native communities that participate in commercial fishing have lived in situ for centuries and have maintained relatively stable populations since the beginning of U.S. Census data collection. Some communities have experienced population decline in recent years as local economic conditions (especially those recently influenced by global trends) make getting by more difficult and opportunities elsewhere draw residents away.

Table 6. Census Places in Alaska by population size, and cumulative percent in 2010.

Population	Number of Census Places	Cum. %	Mean	Median	Min	Max
≤25	31	8.8%				
25-400	182	60.5%				
400-4,000	111	92.0%				
4,000-20,000	25	99.1%				
20,000+	3	100%				
Total population	*710,231*		*4,092*	*358*	*0*	*290,588*

Source: U.S. Census Bureau (2010). *Profile of selected social, economic and housing characteristics of all places within Alaska*. Datasets utilized include the 2010 (Demographic Profile SF) Decennial Census. Retrieved November 1, 2011 from http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml.

When considering a snapshot of the nation's population as provided by the decennial U.S. Census, the population is segmented into racial categories (White, Black, Alaska Native or American Indian, Asian, Native Hawaiian or Other Pacific Islander, Some Other Race, and Two

[48] U.S. Census Bureau. (2010). *Profile of selected social, economic and housing characteristics of all places within Alaska*. Datasets utilized include the 2010 (Demographic Profile SF) Decennial Census. Retrieved November 1, 2011 from http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml.

or More Races) as well as ethnic categories (Hispanic or Non-Hispanic).[49] The profiles supply this snapshot for each selected Alaskan community, which is followed by a historical account of the community which helps explain and contextualize the contemporary composition of the specific communities' populations. For purposes of comparison, Table 7 provides the racial and ethnic distribution seen both across Alaska and the U.S.

One of the most interesting characteristics of Alaskan communities is the bi-modal nature of racial structure. Throughout the state, most commonly, communities either have a significant majority of the community that considers themselves White or a majority that considers themselves to be Alaska Native. For example, in the 2010 Decennial Census, 37.2% (132 communities) exhibited more than 75% White residents and 39.7% (141 communities) exhibited more than 75% Native Alaskan residents. Many of the profiled communities with the highest percentages of White residents are located in Southeast Alaska or on the Kenai Peninsula, both areas which had a large boom of White settlers partly because of resource extraction—Southeast Alaska in the late 1800s and early 1900s, and the Kenai Peninsula in the 1950s. Today, both areas are also the densest sites of sport fishing in the state, providing sport lodges and a plethora of guiding services. The communities with the highest percentages of Native residents are predominantly located in Western Alaska. Western Alaska is home to a predominantly Native population, in part because the region has a less extensive history of European colonization and natural resource extraction compared to other areas of the state.

The remaining categories of racial and ethnic groups are not nearly as abundant. The largest communities in the state contain higher percentages of Black or African American residents than many other communities (Fairbanks 11.2% in 2000 and 9% in 2010, Anchorage 5.8% and 5.6% in 2010, and Juneau 0.8% and 0.9% in 2010). The remaining communities with higher percentages of Black residents are located for the most part in on the Alaska Peninsula and Aleutian Islands.

The communities with the largest percentages of Asian residents are primarily major fishing ports with large fish processing plants. Fish processing remains an under-studied sector of Alaska's fisheries; however, according to anecdotal evidence, Asian migrant workers, particularly from the Philippines and other areas of Southeast and East Asia, make up a large portion of fish processing workers in many communities. Unalaska, for example, has a particularly high percentage of Asian processing workers (32.6% of the 2010 population). About 50.4% (46.7% in 2000) of the profiled communities did not include any Asian residents.

In 2010, only about 28.4% of communities included any Native Hawaiians or Other Pacific Islanders, compared to 27.3% in 2000. Many of the communities with the highest percentages of Native Hawaiian or Other Pacific Islanders are small communities where one person or one family can have a large impact on overall percentages.

[49] All data presented here on race and ethnicity was obtained from the following source: U.S. Census Bureau. (n.d.). *Profile of selected social, economic and housing characteristics of all places within Alaska*. Datasets utilized include the 2000 (SF1 100% and SF3 sample data) and 2010 (Demographic Profile SF) Decennial Census. Retrieved November 1, 2011 from http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml.

Table 7. Racial distribution of the Alaskan and U.S. populations in 2000 and 2010.

	Alaska		U.S.	
Total population 2000	**626,932**		**281,421,906**	
One race	592,786	94.6%	274,595,678	97.6%
Two or more races	34,146	5.4%	6,826,228	2.4%
White	434,534	69.3%	211,460,626	75.1%
Black or African American	21,787	3.5%	34,658,190	12.3%
American Indian and Alaska Native	98,043	15.6%	2,475,956	0.9%
Asian	25,116	4.0%	10,242,998	3.6%
Native Hawaiian and Other Pacific Islander	3,309	0.5%	398,835	0.1%
Some other race	9,997	1.6%	15,359,073	5.5%
Hispanic or Latino (of any race)	25,852	4.1%	35,305,818	12.5%
Not Hispanic or Latino	601,080	95.9%	246,116,088	87.5%

	Alaska		U.S.	
Total population 2010	**710,231**		**308,745,538**	
One race	658,356	92.7%	299,736,465	97.1%
Two or more races	45,368	6.4%	9,009,073	2.9%
White	518,949	73.1%	223,553,265	72.4%
Black or African American	33,150	4.7%	38,929,319	12.6%
American Indian and Alaska Native	138,312	19.5%	2,932,248	0.9%
Asian	50,402	7.1%	14,674,252	4.8%
Native Hawaiian and Other Pacific Islander	11,154	1.6%	540,013	0.2%
Some other race	15,183	2.1%	21,748,084	7.0%
Hispanic or Latino (of any race)	39,249	5.5%	50,477,594	16.3%
Not Hispanic or Latino	670,982	94.5%	258,267,944	83.7%

Source: U.S. Census Bureau (2010). *Profile of selected social, economic and housing characteristics of all places within Alaska*. Datasets utilized include the 2010 (Demographic Profile SF) Decennial Census. Retrieved November 1, 2011 from http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml.

On average, Alaskan communities were only 1.8% Hispanic in 2000 and 2.1% Hispanic in 2010, with a range of 0% to 20.8% in both years. Communities with the highest percentage of Hispanic residents tend to be heavily involved in fish processing, which provides job opportunities for seasonal workers. Many of these communities are located on the Alaska Peninsula and the Aleutian Islands.

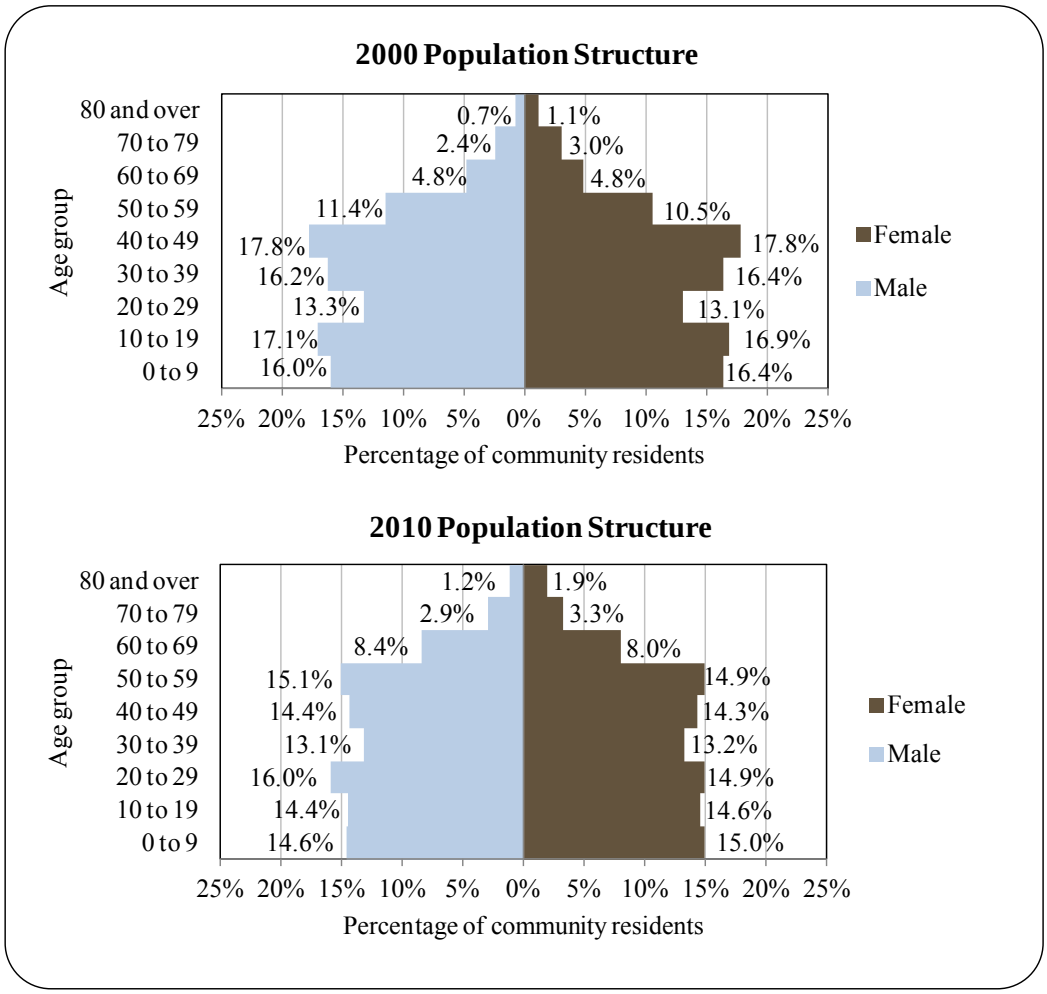
The ratio of men to women in many Alaskan communities tells the peculiar story of labor mobility in industries such as fishing and oil extraction. Most of the communities profiled in this document have more men than women, but this is particularly true of communities that rely heavily on fishing and fish processing. When compared to the overall U.S. population, which is approximately equally distributed between men and women (49.1% male in 2000 and 49.2% in 2010), and even when compared to the overall population of the State of Alaska (51.7% male in 2000 and 52.0% in 2010), a majority of the communities profiled in this document are more heavily skewed toward male residents. Over 70% in 2000 and 66% in 2010 of Alaskan communities had male percentage greater than the state average. A considerable number of those communities which have the highest ratio of men to women are located in Southwest Alaska (in the Alaska Peninsula and Aleutian Islands), and in Southeast Alaska. Both of these areas are

heavily involved in commercial fishing and fish processing, labor sectors that tend to be male-dominated.

By contrast, large communities, communities with less transient employment opportunities, and some traditional Native communities, tend to be much more balanced in terms of gender composition. Anchorage (50.6% male in 2000 and 50.8% in 2010), Ketchikan (50.4% male in 2000 and 50.8% in 2010), and Juneau (50.4% male in 2000 and 51.0% in 2010) are all relatively balanced in terms of gender composition and all have large populations by Alaska standards. These communities also have a wider variety of employment opportunities such as tourism, finance, real estate, communications, government, mining, timber, and oil and gas industries. These more metropolitan communities follow the relatively balanced gender pattern of other major metropolitan areas in the United States. Some remote and largely Native communities, such as Newhalen (50% male in 2000 and 48.4% in 2010) and Hooper Bay (49.7% male in 2000 and 51.5% in 2010), have very balanced gender structures as well, in part because of the somewhat more limited commercial fishing opportunities; neither community had a fish processing plant. Excursion Inlet, Nikolski, Portage Creek and Wiseman all have exactly balanced gender structures; each of these communities has a population under 100 and lack commercial crew or processing employment. Some communities have more females than males, but this is considerably less common, with only 10.4% of Alaskan communities having more than 50% women.

The age structure in many of Alaskan communities is also telling. The average median age of communities was 32.7 years in 2000 and 36.2 years in 2010, somewhat younger than the U.S. median of 35.3 years in 2000 and 37.2 in 2010. This indicates a slight trend toward a young working-age population with few elderly residents for the entire State of Alaska. Approximately 54% of Alaskan communities have a lower median age than the U.S. average. This is due in part to the physical demands of the work and the transient nature of employment in fishing and fish processing. It is also influenced by the relative absence of the elderly in the small coastal communities of Alaska, except in traditionally Native communities. These trends are also represented graphically in Figure 3.

Figure 3.-Population structure of the population as a whole in Alaska.



History of Alaska

Although the precise date of initial occupation of Alaska's coastline is still somewhat in dispute, it is widely confirmed that people from northeast Asia came to Alaska during the peak of the last glacial period more than 10,000 years ago.[50] These early arrivals spread across the coastal (and later interior) lands of Alaska, and gave rise to quite different material cultures, languages, subsistence patterns and cultural identities. There are twenty Alaska Native languages from four distinct language families: Eskimo-Aleut, Tsimshian, Haida, and Athabascan-Eyak-Tlingit. Migration, descent, and cultural diffusion over the millennia help to explain the complex cultural mosaic that is Native Alaska.

The history of contact between Europeans and Alaska Natives is turbulent and ever-changing. The first European to enter Alaskan territory was Vitus Bering, who, sent by Peter the Great of Russia in 1728, sailed into the strait that now bears his name. By the mid-18th century,

[50] Ames, Kenneth W. and Herbert D.G. Maschener. (1999). *Peoples of the Northwest Coast: Their Archaeology and Prehistory.* London: Thames and Hudson.

the intensive resource extraction that would characterize Alaska's colonial history had begun. Russian expeditions began harvesting North Pacific sea otters and fur seals in great quantities for the international market. This early contact for primarily economic purposes resulted in a long and significant cultural exchange; many coastal communities throughout Alaska have residents with Russian surnames and maintain a faith in the Russian Orthodox Church.

In 1867, the U.S. government purchased Alaska from Russia for $7.2 million. The deal, signed by Secretary of State William H. Seward, was widely referred to as "Seward's Folly," as most U.S. citizens could see no use or value in acquiring 586,000 square miles of northern land.[51] Throughout the mid- and late-19th century, gold was discovered in various locations, including near Sitka, Windham Bay, Gastineau, and, most famously, at the mouth of the Klondike River in 1897, beginning the great Klondike gold rush. Many North American towns and cities, including the metropolis of Seattle, owe their early population growth in part to the Alaskan gold rush, which brought supply-hungry miners, explorers and settlers to the area.

Military operations have long been an important part of Alaska's history. Early operations were in support of trading companies, targeting fractious Native groups, as with the shelling of Angoon in 1882. In 1942, during the height of World War II, the Japanese attacked Dutch Harbor where the U.S. had amassed a force 40,000, including civilian support personnel.[52] The Japanese attacked and occupied the island of Attu, taking the Aleut residents back to Japan as prisoners.[53] The U.S. responded by forcibly evacuating the entire Aleut population and holding them in internment camps in Southeast Alaska for the duration of the war.[54] The war also precipitated the Alaska-Canada highway, built through about 1500 miles of Canadian wilderness in just eight months as an overland supply route to the territory, and used today by thousands of adventurous tourists each summer. In the 1960's and 70's, the United States used the Aleutian Islands as a nuclear weapons testing ground, exploding three devices including the largest underground nuclear explosion ever conducted by the United States.[55] Although the end of the Cold War changed Alaska's immediate strategic position, it is still a critical part of U.S. presence in the Pacific. Most recently, Adak was selected as a key site for the new U.S. missile defense system.

Beginning in the early 1900s, and expanding in the 1950s, oil extraction has been a mainstay of the state economy. With the completion of the Trans-Alaska Pipeline from Prudhoe Bay to Valdez in 1977, Alaskan oil began flowing in high volumes to the U.S. and international markets. In 1980, the Alaska Legislature established the Alaska Dividend Fund to distribute Permanent Fund earnings from oil extraction on the North Slope to Alaska residents. For all its benefits, the oil industry in Alaska also brings significant risks and liabilities. In what has become one of the most widely publicized environmental disasters and clean-up efforts in

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[51] Gislason, Eric. (n.d.). *A Brief History of Alaska Statehood (1867-1959)*. Retrieved June 2005 from http://xroads.virginia.edu/~CAP/BARTLETT/49state.html.

[52] Rourke, Norman Edward. (1997). *War Comes to Alaska: The Dutch Harbor Attack, June 3-4, 1942*. Shippensburg, PA: Burd Street Press.

[53] Mitchell, Lt. Robert J. (2000). *The Capture of Attu. A World War II Battle as Told by the Men Who Fought There*. University of Nebraska Press: Lincoln.

[54] Kohlhoff, Dean. (1995). *When the Wind Was a River. Aleut Evacuation in World War II.* University of Washington Press: Seattle.

[55] Kohlhoff, Dean W. (2002). *Amchitka and the Bomb. Nuclear Testing in Alaska.* University of Washington Press: Seattle.

history, the *Exxon Valdez* oil tanker ran aground on March 24, 1989, spilling 11 million gallons, and fouling shoreline from Prince William Sound to the Alaska Peninsula.

Marine species were among the earliest and most important of Alaska's commercial resources, especially marine mammals. The fur trade, based on sea otter and fur seals, drove the economics of the Russian colonial empire. Commercial whaling was an important factor in the late 19th century. Some marine mammal populations have recovered from over-exploitation, while other populations remain low or are declining, affecting subsistence users and commercial fisheries.

Commercial fisheries began in the mid 1800s with salted cod, salmon, and herring, and later canned salmon. Lucrative offshore fisheries were conducted by fishing fleets from Russia, Japan and Korea, until the 1976 Magnuson Fishery Conservation and Management Act claimed the area between 3 and 200 miles offshore as the exclusive economic zone of the U.S.[56] Crab and other shellfish, herring, halibut, salmon and groundfish have all contributed to this important industry for the state, supporting a fishing economy that ranges from family fishing operations to multinational corporations, and transforming the social landscape by the immigration of workers from around the world.

Alaska's economic, social and cultural milieu continues to evolve. Major industries including oil, military and commercial fishing remain tremendously important to the state's continued growth. At the same time, new sectors such as tourism have begun to contribute noticeably to Alaska's economy. Cruise ships, recreational fishing excursions, cultural tourism and eco-tourism are on the rise as people from around the world discover Alaska's unique character.

Current Economy

Important Economic Sectors

There were 304,851 Alaskan residents employed throughout the state in 2010, compared to 284,000 in 2000. The government sector—including federal, state and local levels—was the largest in terms of employment figures, with 70,260 jobs in 2010 and 74,500 jobs in 2000. In 2000, this was followed by services/miscellaneous (73,300), trade (57,000), transportation, communications and utilities (27,300), manufacturing (13,800, with seafood processing contributing the bulk of jobs at 8,300) and mining (10,300, with oil and gas extraction contributing the most jobs at 8,800).[57] This changed slightly in 2010 to where trade transportation and utilities (63,028 or 20.7%) providing the most jobs, followed by educational and health services (42,534 or 14.0%), leisure and hospitality (29, 835 or 9.8%) and professional and business services (25,777 or 8.5%).[58] Employment in commercial fishing has declined over

[56] Rigby, Phillip W., Ackley, David R., Funk, Fritz, Geiger, Harold J., Kruse, Gordon H., and Murphy, Margaret C. (1995). *Management of the Marine Fisheries Resources of Alaska.* Regional Information Report 5J95-04. Juneau, AK: Alaska Department of Fish and Game.

[57] Alaska Department of Labor and Workforce Development. (2001). The Year 2000 in Review: Growth Picks up in Alaska in 2000. *Alaska Economic Trends 2001.* Anchorage: Alaska Department of Labor and Workforce Development.

[58] Alaska Department of Labor and Workforce Development (n.d.). *Alaska Local and Regional Information Database.* Retrieved August 4, 2012 from http://live.laborstats.alaska.gov/alari/.

the past decade. Despite this decline, the commercial fishing and fish processing industries remain an important factor in Alaska's employment picture.[59]

Governance

The governance structure of Alaska differs from that of the rest of the U.S. The state is divided into 19 boroughs which are roughly analogous to counties in many other states, though certainly larger in terms of land and smaller in terms of population than a typical county. This includes four "unified municipalities" (Anchorage, Juneau, Sitka and Wrangell) that are borough-level jurisdictions. However, not every community is contained in an organized borough. In fact, over half of the state's land mass is not included within the borders of the 18 organized boroughs, including the Municipality of Anchorage.[60] The remainder of the state is considered one 'unorganized borough,' which has been divided into 11 Census Areas.[61] In all other states in the U.S., cities are organized within counties (except in the case of Louisiana, in which they are located within parishes). This higher level of governance can assist in providing various services at the local level, which may include jails and courts, housing, emergency, solid waste, transportation and additional community services.

Although fewer than 50% of Alaskan communities are located within organized boroughs, boroughs play a vital part in the governance and support of communities that are located within them. In the case of the Kenai Peninsula Borough, for example, the borough devotes a 2% consumer sales tax to the schools of the borough. Other typical responsibilities of borough-level government include: solid waste disposal, 911 communications, college funding, senior citizen funding, planning and zoning, solid waste disposal, education, and tax assessment and collection.[62] Boroughs have the ability to institute taxes including such taxes as sales and use tax and property tax.

As described in Table 5, in Alaska, an incorporated place falls into one of three municipal classifications: home rule cities, first class cities, and second class cities. City classification depends largely on population. Home-rule and first-class cities must each have at least 400 residents, while second-class cities must have at least 25 registered voters. The municipal classification scheme determines the powers that municipalities may exercise, including the passage of land use regulation and the assessment and collection of taxes. Many Alaskan communities are unincorporated, and so do not fall under the municipal system, although most of these are nonetheless designated as Places by the Census. The communities profiled in this document are divided between various types of incorporation, but are made up largely of second-

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[59] Carothers, Courtney and Jennifer Sepez. (2005). Commercial Fishing Crew Demographics and Trends in the North Pacific. Poster presented at the *Managing Our Nation's Fisheries: Focus on the Future* Conference, Washington D.C., March 2005. Available at ftp://ftp.afsc.noaa.gov/posters/pCarothers01_comm-fish-crew-demographics.pdf.

[60] Aleutians East Borough, Municipality of Anchorage, Bristol Bay Borough, Denali Borough, Fairbanks North Star Borough, Haines Borough, City and Borough of Juneau, Kenai Peninsula Borough, Ketchikan Gateway Borough, Kodiak Island Borough, Lake & Peninsula Borough, Matanuska-Susitna Borough, North Slope Borough, Northwest Arctic Borough, City and Borough of Sitka, and City and Borough of Yakutat.

[61] Alaska Dept. of Labor and Workforce Development, Research and Analysis. *Alaska Borough & Census Area Boundaries – 2010.* Retrieved November 19, 2012 from http://labor.alaska.gov/research/census/2010CNTY.pdf.

[62] Kenai Peninsula Borough. (n.d.). *Our government.* Retrieved November 5, 2012 from http://www.borough.kenai.ak.us/our-government.

class cities or unincorporated communities, although some first-class cities and unified home rule municipalities were selected for profiling.

Communities generate revenue in a variety of ways, including the implementation of taxes, the sale of permits, involvement in enterprise, and through outside funding programs. Incorporated communities have two types of municipal revenues: local operating revenues (generated from taxes, licenses/permits, service charges, bingo, enterprise, and other sources) and outside operating revenues (generated from federal operating revenues, state revenue sharing, state safe communities, state fish tax sharing, other state revenue, and other inter-government sources), and state/federal education funds. For many communities, much of their local operating revenue (and much of their total revenue in general) is generated by locally administered taxes, which may include sales tax, property tax, accommodations tax, bed tax, rental car tax, raw fish tax (see *Fish Taxes in Alaska* section), alcohol tax, tobacco tax, and gaming tax.

Unincorporated communities and communities located outside of organized boroughs are eligible for the State/Community Revenue Sharing program (as are communities which are incorporated which are in either an organized or unorganized borough). This program helps to fund public services including education, water and sewer, police, road maintenance, health care, and fire protection.[63]

Alaska is the only state that does not collect state sales or income tax (sales tax in many cases is collected by cities and boroughs). However, other state taxes are in place including: alcoholic beverages, games of chance and contests of skill, conservation surcharge on oil, corporate net income, dive fishery management assessment, electric cooperative, estate (phased out in 2003), fisheries business, fishery resource landing, mining license, motor fuel, oil & gas property, oil and gas production, regulatory cost charge, salmon enhancement, salmon marketing (repealed in 2005), telephone cooperative, tire fee, tobacco, and vehicle rental tax. The largest percentage of General Fund taxes collected in 2000 by the State was made-up of oil and gas severance (production tax and conservation surcharge) which was 53% of the $1,334,388,911 in total tax collections. A large percentage as well of the total taxes were from other oil and gas taxes: oil and gas property (20%) and oil and gas corporate (12%). The remaining pieces of the total tax collections were made-up of: other corporation (4%), fisheries business (3%), other fisheries (1%), motor fuel (3%), tobacco (1%), alcohol (1%), and other taxes (2%).[64] By comparison, in 2010, taxes on the oil and gas industry (production) made up a significantly larger percentage (76.7%) of all revenue collections. Other large tax contributors included oil and gas corporate income (11.4%), oil and gas property taxes (2.7%), other corporate income (1.9%), tobacco (1.7%), alcohol (0.7%), commercial passenger vessel (1.0%), and fisheries business (0.3%).[65]

Village councils are the politically representative bodies of federally recognized Alaskan Native groups. A village council is either an Indian Reorganization Act (IRA) council or a

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[63] Information about the State and Community Revenue Sharing programs can be found at the following websites: http://commerce.state.ak.us/dca/LOGON/srs/srs-srs.htm and http://commerce.alaska.gov/dca/pub/Community_Revenue_Sharing.pdf

[64] Alaska Department of Revenue, Tax Division. (2000). *Fiscal Year 2000 Annual Report.* Anchorage: Alaska Department of Revenue. Retrieved November 5, 2012 from http://www.tax.alaska.gov/programs/annualrpt2000.pdf.

[65] Alaska Department of Revenue, Tax Division. (2011). *Fiscal Year 2011 Annual Report.* Anchorage: Alaska Department of Revenue. Retrieved November 5, 2012 from http://www.tax.alaska.gov/programs/documentviewer/viewer.aspx?2470f

traditional council. There are over 226 Native village councils in the State of Alaska. Some communities which have village councils also have a municipal city government, and some do not. Many communities have additional layers of tribal representation through Alaska Native Claims Settlement Act (ANCSA) village and regional corporations that manage natural resources. There are 13 such Native regional corporations (12 for the state, and one to represent those living outside of Alaska), 168 village corporations, and four urban corporations. In addition, many Native villages are members of the 12 regional Alaska Native 501(c)(3) nonprofit organizations that were originally identified under ANCSA and charged with naming incorporators to create regional for-profit corporations. Today, these regional Native Associations receive federal funding to administer a broad range of social services to villages in their regions.[66]

Infrastructure

The accessibility of Alaskan communities profiled in this document varies tremendously, largely due to significant varying levels of economic development across different regions of Alaska. While some communities such as Anchorage, Dutch Harbor/Unalaska, and Bethel have airport facilities capable of handling jet aircraft, others have only small airstrips; still others are accessible primarily by sea. Many small communities in the Bethel and Dillingham Census Areas of Western Alaska, for example, have no roads at all, relying primarily on marine and river transport, and in some places, winter ice landing strips; ground transportation in these areas is by ATVs in the summer and snowmobiles in the winter.

Similarly, there is a great deal of variation between the communities in terms of fisheries-related and other marine facilities, also reflecting significant differences in economic development. Some of the larger communities, such as Juneau and Kodiak, serve as major commercial fishing and seafood processing centers. These communities have more than one boat harbor with moorage for hundreds of vessels, several commercial piers as well as numerous shore-side processing plants. By contrast, many smaller coastal communities, especially in Western and Northern Alaska, lack dock and harbor facilities. Many of these communities do not have stores, and residents rely on coastal supply shipments by barge from Seattle. Where there are no harbor facilities, residents must use small skiffs to offload the supplies and lighter them to shore. Although fishing activity occurs in these areas and provides a vital source of employment and income, the relative underdevelopment of infrastructure and facilities remains a significant barrier to economic development.

In addition to marine facilities, there is tremendous variation in access to other types of facilities, such as hospitals, hotels, and shopping centers. A few large metropolises and many smaller micropolises serve as regional hubs, providing an array of services to surrounding villages.

[66] U.S. Government Accountability Office. 2005. *Alaska Native Villages: Report to Congressional Addressees and the Alaska Federation of Natives*. Retrieved February 7, 2012 from http://www.gao.gov/new.items/d05719.pdf.

Involvement in North Pacific Fisheries

Fish Taxes in Alaska

Taxes generated by the fishing industry, particularly the fish processing sector, are a very important revenue source for communities, boroughs and the state. The Fisheries Business Tax, begun in 1913, is levied on businesses that process or export fisheries resources from Alaska. The tax is generally levied on the act of processing, but it is often referred to as a "raw fish tax," since it is based on the ex-vessel value paid to commercial fishers for their catch. 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 processing 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 half the revenue from the tax to the municipality where processing takes place or to the Department of Community and Economic Development. The Fisheries Business Tax contributed $18.2 million in fiscal year 2000 and $32 million in fiscal year 2010 to total Alaska state revenue. [67]

In addition to the Fisheries Business Tax, the state has collected the Fisheries Resource Landing Tax since 1993. 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 to other locales. 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. The Fishery Resource Landing Tax contributed $2.2 million in fiscal year 2000 and $12.6 million in fiscal year 2010 to total Alaska state revenue. Taken together, the Fisheries Business Tax and the Fishery Resource Landing Tax make up only a small portion of Alaska's budget, contributing only 0.3% of total state fiscal revenues in both 2000 and 2010.[68]

In addition to these state taxes, many communities have developed local tax programs related to the fishing industry. These include taxes on raw fish transfers across public docks, fuel transfers, 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, many communities report them in their annual municipal budgets. In addition, a request was made to communities to report this information in the 2011 AFSC survey. Where this information was provided, it has been reported in each community's profile.

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[67] Figures are reported in two sources: (1) Alaska Department of Revenue, Tax Division. (2000). *Fiscal Year 2000 Annual Report.* Anchorage: Alaska Department of Revenue. Retrieved November 5, 2012 from http://www.tax.alaska.gov/programs/annualrpt2000.pdf. (2) Alaska Department of Revenue, Tax Division. (2011). *Fiscal Year 2011 Annual Report.* Anchorage: Alaska Department of Revenue. Retrieved November 5, 2012 from http://www.tax.alaska.gov/programs/documentviewer/viewer.aspx?2470f

[68] Ibid.

Commercial Fishing

The profiles in this document examine Alaskan communities and their involvement in North Pacific fisheries. Even with brief regional introductions, however, analysis at the community level of geography does not allow for the larger picture of fisheries in Alaska to emerge. In view of that, the following section examines statewide fisheries data in order to provide a rough picture of the larger fisheries context in which the selected communities operate.

In particular, fisheries in Alaska have a high volume of landings compared to other areas of the country. The industry supplies the largest source of employment in the state through harvesting and processing jobs, and the economic activity of fishing produces important sources of both private and public (tax) income. Each of these topics will be discussed more below. Together, they indicate that Alaska is a very important contributor to U.S. fisheries, and that the fishing industry is a very important aspect of Alaska's economy.

A notable characteristic of Alaska fisheries from a statewide perspective is that the types of fisheries conducted are fairly diverse. Groundfish, salmon, crab, and herring all make substantial contributions to the state's fishery profile, and except for herring, each of those resource groupings involves multiple species which can be very different from one another. These fisheries are engaged in by a diverse fishing fleet with vessels ranging in size from small skiffs to more than 300 feet. These vessels utilize many harvest methods, including pelagic trawl, bottom trawl, troll, longline, purse seine, drift gillnet, setnet, pot, jig, and other commercial gear types. Divided, as they are, by species, gear type, vessel size and management area, the state limited entry permit system issues harvest permits in 326 different categories.[69] However, this diversity at the state level does not necessarily translate to communities. While a few communities, such as Kodiak, participate in the broadest range of fisheries, most communities are sustained largely by a single dominant fishery and/or gear type.

The North Pacific's commercial fisheries have changed through time with increased technology, man-power, demand, and legislation. The 1860s saw the earliest commercial fishing efforts by U.S. vessels in Alaskan waters, primarily targeting Pacific cod.[70] After the purchase of Alaska from Russia in 1867, U.S. interest in Alaska fisheries increased. Salmon and herring were two of the earliest commercial fisheries in Alaska. In the late 1800s, the product was salted for storing and shipment.[71] Improved canning technology and expanded markets led to dramatic growth in the Alaska salmon industry, with 59 canneries throughout Alaska by 1898 and 160 in operation by 1920.[72] With the development of diesel engines, commercial fisheries for Pacific halibut and groundfish had also expanded north to the Gulf of Alaska (GOA) and into the Bering

[69] State of Alaska, Commercial Fisheries Entry Commission. (2011). *Current Fishery Codes Description Table.* Retrieved November 5, 2012 from http://www.cfec.state.ak.us/misc/FshyDesC.htm.
[70] Rigby, Phillip W., Ackley, David R., Funk, Fritz, Geiger, Harold J., Kruse, Gordon H., and Murphy, Margaret C. (1995). *Management of the Marine Fisheries Resources of Alaska.* Regional Information Report 5J95-04. Juneau, AK: Alaska Department of Fish and Game.
[71] Woodby, Doug, Dave Carlile, Shareef Siddeek, Fritz Funk, John H. Clark, and Lee Hulbert. (2005). *Commercial Fisheries of Alaska.* Alaska Dept. of Fish and Game, Special Publication No. 05-09. Retrieved December 29, 2011 from http://www.adfg.alaska.gov/FedAidPDFs/sp05-09.pdf.
[72] Clark, McGregor, Mecum, Krasnowski and Carroll. 2006. "The Commercial Salmon Fishery in Alaska." *Alaska Fisheries Research Bulletin* 12(1):1-146. Alaska Dept. of Fish and Game. Retrieved January 4, 2012 from http://www.adfg.alaska.gov/static/home/library/PDFs/afrb/clarv12n1.pdf.

Sea region by the 1920s.[73] Catch of herring for bait began around 1900. A boom in herring reduction for fish meal and oil took place from the 1920 to 1960s, and sac roe fisheries developed in the 1970s to provide high value product to Japanese markets. By the mid-1900s, fisheries were also developing for crab, shrimp and other shellfish, as well as an expanding variety of groundfish species. Substantial commercial exploitation of crab began in the 1950s with the development of Bering Sea king crab fisheries. Today, king crab harvests are well below their peak in 1980, when crab fisheries rivaled the highly profitable salmon industry in terms of landings value.[74]

Between 2000 and 2009, groundfish were caught in the highest volume and accounted for the highest percentage of total landings revenue of all Alaskan fisheries. In particular, walleye pollock landings averaged 3 billion pounds through the 2000-2009 period, compared to an average of 680 million pounds of salmon landings per year. Although walleye pollock was valued at an average of only $0.13 per pound during this period, pollock landings still accounted for the highest landings revenue of any fishery between 2000 and 2009, averaging $371 million per year compared to $262 million per year from salmon fisheries. Pacific cod fisheries produced the third greatest volume and landings value over the decade, averaging 520 million pounds harvested per year and an average of $168 million in landings revenue. It is also important to note that sablefish had the highest average annual ex-vessel price between 2000 and 2009 ($2.47), followed by crab ($2.42), and Pacific halibut ($2.33), although these fisheries accounted for smaller overall portions of total Alaska catch volume.[75]

Salmon. The majority of commercial salmon are caught on a large fleet of small vessels using troll, gillnet, and purse seine gear. Salmon fisheries are restricted by a limited entry permit system. All five species of Pacific salmon found along the west coast of North America are harvested commercially: pink (humpback) salmon, sockeye (red) salmon, chum (dog) salmon, coho (silver) salmon, and Chinook (king) salmon.[76] The profitability of salmon for Alaskan fishermen has gone down greatly through the 1990s and early 2000s, brought about largely by the year-round availability of farmed salmon to the world, mostly grown in Chile and British Columbia, Canada (farming salmon is not allowed by law in the State of Alaska). Correspondingly, the value of fishermen's permits, vessels and gear, and the amount of money received for their catch also crashed, despite the fact that the commercial catches of wild Alaska salmon continue to be high. From the years of 1990 to 2000, the number of salmon fishermen declined by 37% which also resulted in a decline in the number of opportunities for crew members. Processors in many cases have dealt with this collapse in salmon prices with plant closures and the consolidation of operations, including the ceasing of salmon operations by the Wards Cove Packing Company in 2002.[77] However, since 2002, salmon ex-vessel prices and value have rebounded as a result of new marketing efforts and techniques, new product forms,

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[73] International Pacific Halibut Commission. 1978. *The Pacific Halibut: Biology, Fishery, and Management*. Technical Report No. 16 (Revision of No. 6).
[74] See footnote 71.
[75] National Marine Fisheries Service. (2010). *Fisheries Economics of the United States, 2009*. U.S. Dept. of Commerce, NOAA Tech. Memo. NMFS-F/SPO-118, 172 p. Retrieved November 20, 2012 from http://www.st.nmfs.noaa.gov/st5/publication/econ/2009/FEUS%202009%20ALL.pdf.
[76] See footnote 71.
[77] Gilbertson, Neal. (2003). The global salmon industry and its impacts in Alaska. *Alaska Economic Trends*, October 2003, 3-11.

improved quality, and development of new markets. In addition, an increase in the price of farmed salmon on the world market after 2002 meant reduced price competition, since buyers no longer had a cheaper alternative to wild salmon.[78]

Overall, Alaska's salmon runs remain relatively healthy as a result of good fisheries management, minimal freshwater habitat disturbance compared to highly developed regions further south on the west coast of North America, and favorable ocean conditions in recent decades.[79] However, it is important to note that specific stocks have experienced declines. For example, commercial fishery failures were declared on the Yukon and Kuskokwim Rivers and in the Cook Inlet in 2012 due to low Chinook salmon returns that year.[80] Previously, salmon fishery failures were also declared for Bristol Bay/Kuskokwim River in 1998, Bristol Bay/Kuskokwim River/Yukon River in 1999, Norton Sound/Kuskokwim River/Yukon River in 2000 and 2001, and the Yukon River in 2010.[81] These poor salmon returns have adversely affected many rural Alaskan communities included in this document.

Herring. Herring has been important as subsistence for Alaska Natives for a very long time. As subsistence, it is still commonly utilized by Bering Sea villages in the dried form or as eggs gathered on hemlock boughs by those in the Southeast. The commercial herring fishery began in the Northwest by European settlers who salted the herring as a method of preservation. After World War I, the production of both pickled and salted herring peaked. In Alaska, around the 1920s plants sprung up from Kodiak to Craig to turn herring into meal and oil, or "reduce" the herring. As with other fisheries, the herring fishery hit a high in the 1920s and 1930s and has declined since. Stocks may have been impacted by the high catches during those years, but also another cheaper alternate for herring meal and oil, Peruvian anchoveta became dominant in the 1950s. By 1966, all of the Alaskan herring reduction plants had closed. In the 1960s and 70s, a herring food products foreign fishery was in place, but this was extinguished by the MSFCMA).

Today, herring is harvested for bait or for sac roe (for Japanese consumption (using purse seine or gillnet), and roe is also harvested in spawn on kelp fisheries (collected by scuba, rake, or by hand – or gathered on fronds from impounded herring).[82] The largest aggregation of herring in Alaska spawns along the northern shore of Bristol Bay near the village of Togiak. Commercially exploitable quantities of herring are also found in Southeast Alaska, Kodiak, the Kuskokwim Delta and Norton Sound. Norton Sound has the northernmost fishery for Pacific herring. Although the Norton Sound herring spawning biomass has been relatively stable in

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[78] Knapp, Gunnar. (2012). *Trends in Alaska Salmon Markets*. Institute of Social and Economic Research, University of Alaska Anchorage. Power Point presentation prepared for the Northwest Fisheries Association meeting in Seattle, WA, March 7, 2012. Retrieved November 19, 2012 from http://www.iser.uaa.alaska.edu/Publications/presentations/2012_03-GunnarKnapp-TrendsInAlaskaSalmonMarkets.pdf.

[79] Woodby, Doug, Dave Carlile, Shareef Siddeek, Fritz Funk, John H. Clark, and Lee Hulbert. (2005). *Commercial Fisheries of Alaska.* Alaska Dept. of Fish and Game, Special Publication No. 05-09. Retrieved December 29, 2011 from http://www.adfg.alaska.gov/FedAidPDFs/sp05-09.pdf.

[80] NOAA Fisheries Service. September 13, 2012. "Secretary of Commerce declares disaster for Alaska King Salmon." Retrieved November 19, 2012 from http://www.nmfs.noaa.gov/mediacenter/2012/09/13_secretary_of_commerce_declares_disaster_for_alaska_king_salmon.html.

[81] Upton, Harold F. (2010). *Commercial Fishery Disaster Assistance*. Congressional Research Service Report for Congress. Retrieved October 3, 2012 from http://www.fas.org/sgp/crs/misc/RL34209.pdf.

[82] See footnote 105.

recent times, the market for herring roe has declined due to decreasing consumption of herring roe in Japan. Processor interest in the Norton Sound sac roe fishery has declined more than in other areas of the state, largely due to the timing of the fishery, which takes place later than sac roe fisheries elsewhere in the state and conflicts with the opening of the first salmon fisheries of the season. In addition, ice floes are often present in Norton Sound during the herring season. Along the Yukon-Kuskokwim coast, herring harvests have been declining in recent years, in part due to lack of processing capacity in the region.[83]

In addition, large aggregations of herring were historically found in both Cook Inlet and Prince William Sound. However, Cook Inlet stocks never recovered from overfishing in the first half of the 20th Century,[84,85] and Prince William Sound herring stocks collapsed in 1993 as a result of an outbreak of hemorrhagic septicemia virus, four years after the Exxon Valdez oil spill. The relationships between the oil spill, the virus, and the stock collapse remain unclear, and the population has shown little sign of recovery.[86,87]

Groundfish and halibut. The earliest commercial venture by U.S. vessels in the North Pacific was in 1865, when the first schooner reached the Bering Sea to explore the Pacific cod resource. The Pacific cod fishery had its peak at about 1916 to 1920 and then declined until approximately 1950.[88] By the 1880s, the commercial fishery for halibut had also expanded north from Washington State and B.C. to the inside waters of Southeast Alaska, with sablefish targeted as a secondary fishery.[89] With the rise of diesel engines in the 1920s, the range of fishing vessels expanded, and more consistent commercial exploitation of halibut and groundfish extended into the Gulf of Alaska and Bering Sea regions.[90]

The groundfish fisheries off of Alaska have been fished by a series of foreign nations; including Japan, Russia and Canada as major players. Canada was very active in the fishing of halibut in Alaska waters, but after 1980 the Canadian fishery in U.S. waters was phased out. Japan has been involved in flounder (yellowfin sole) and the pollock fishery, as has Russia. The flounder fisheries by both Japan and Russia declined with the collapse of yellowfin sole, with the peak in the fishery having been in 1960 at about 500,000 metric tons. More heavily targeted by both the Russians and the Japanese was the pollock fishery which started in the 1960s by Japanese trawlers. The peak of the pollock catch was in 1972 with over 1.7 million metric tons harvested by the Japanese in the Bering Sea. Russian maximum harvests of Pollock were also

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[83] Woodby, Doug, Dave Carlile, Shareef Siddeek, Fritz Funk, John H. Clark, and Lee Hulbert. (2005). *Commercial Fisheries of Alaska.* Alaska Dept. of Fish and Game, Special Publication No. 05-09. Retrieved December 29, 2011 from http://www.adfg.alaska.gov/FedAidPDFs/sp05-09.pdf.
[84] Ibid.
[85] Alaska Dept. of Fish and Game. (2012). *Commercial Fisheries Overview: Lower Cook Inlet Management Area*. Retrieved June 19, 2012 from http://www.adfg.alaska.gov/index.cfm?adfg=commercialbyarealci.main.
[86] See footnote 83.
[87] Alaska Dept. of Fish and Game. 2012. *Pacific Herring Species Profile: Status, Trends, and Threats*. Retrieved April 30, 2012 from http://www.adfg.alaska.gov/index.cfm?adfg=herring.main.
[88] Rigby, Phillip W., Ackley, David R., Funk, Fritz, Geiger, Harold J., Kruse, Gordon H., and Murphy, Margaret C. (1995). *Management of the Marine Fisheries Resources of Alaska.* Regional Information Report 5J95-04. Juneau, AK: Alaska Department of Fish and Game.
[89] See footnote 83.
[90] Thompson, William F. and Norman L. Freeman (1930). *History of the Pacific Halibut Fishery*. Report of the International Fisheries Commission. Number 5. Retrieved June 1, 2012 from http://ww.iphc.int/publications/scirep/Report0005.pdf.

during this time, but were on somewhat of a smaller scale of 300,000 metric tons per year. The Bering Sea was also fished during the 60s and 70s by a small Korean fleet. The maximum total foreign catch of pollock, flatfish, rockfish, cod, and other groundfish was in 1972 at 2.2 million metric tons. The foreign fleets also moved into the Gulf of Alaska in 1960 and targeted additional species. Additional foreign nations became involved and added to this time of overexploitation including: Taiwan, Poland, West Germany, and Mexico. By the 1970s it was in Alaska's obvious interest to control foreign involvement. The groundfish fishery was Americanized with the MSFCMA in 1976, and by 1991 the foreign fishers had been transitioned out and the entire American groundfish fisheries were harvested by U.S. vessels. The fisheries changed with the introduction of the first independent factory trawler in 1980 and subsequent over-harvest.[91]

Pacific halibut fisheries are managed under the International Pacific Halibut Commission (IPHC). Other federally managed groundfish species have been organized into a License Limitation Program (LLP) permitting system. In addition to federal groundfish fisheries, the state manages parallel fisheries for Pacific cod and walleye pollock along the southern coast of the Aleutian Islands and Alaska Peninsula, Kodiak Island, and Gulf of Alaska. The Total Allowable Catch (TAC) set by NMFS in each fishery applies to both federal and parallel harvest. In addition to federally-managed groundfish fisheries, beginning in 1997, 'state-waters fisheries' for Pacific cod were initiated in Prince William Sound, Cook Inlet, Chignik, Kodiak, and the southern Alaska Peninsula areas. Management plans for state-waters fisheries are approved by the Alaska Board of Fisheries (BOF), and guideline harvest limits (GHL) are set by the ADF&G. Typically, state-waters fisheries are opened once federal and parallel fisheries close. In addition, the ADF&G manages lingcod fisheries in both state and EEZ waters off Alaska, and beginning in 1998, management of black rockfish and blue rockfish in the GOA was transferred from NMFS to ADF&G.[92]

In 1995, management of the commercial Alaskan halibut and sablefish fisheries shifted from limited entry to a system of catch shares. Motivations for the shift included overcapitalization, short seasons, and the derby-style fishery that led to loss of product quality and safety concerns. As a result of program implementation, the number of shareholders and total vessels participating in the halibut and sablefish fisheries declined substantially, and product quality has improved. This shift to catch shares has been controversial, raising concerns about equity of catch share allocation, reduced crew employment needs, and loss of quota from coastal communities to outside investors. The program includes allocation of the annual TAC of halibut and sablefish to commercial fishermen via Individual Fishing Quota (IFQ), and in the Bering Sea – Aleutian Islands (BSAI) region, quota shares are also allocated to six Community Development Quota (CDQ) non-profit organizations representing 65 communities in Western

[91] See footnote 88.
[92] Woodby, Doug, Dave Carlile, Shareef Siddeek, Fritz Funk, John H. Clark, and Lee Hulbert. (2005). *Commercial Fisheries of Alaska.* Alaska Dept. of Fish and Game, Special Publication No. 05-09. Retrieved December 29, 2011 from http://www.adfg.alaska.gov/FedAidPDFs/sp05-09.pdf.

Alaska.[93] Managers of CDQ organizations authorize individual fishermen and fishing vessels to harvest a certain portion of the allocated CDQ.[94]

Although the 1995 catch share program implementation resulted in many benefits to commercial fishermen, processors, and support businesses, an unintended consequence was that many quota holders in smaller Alaskan communities either transferred quota outside the community or moved out of smaller communities themselves. In addition, as quota became increasingly valuable, entry into halibut or sablefish fisheries became difficult. In many cases, it was more profitable for small-scale operators to sell or lease their quota rather than fish it due to low profit margins and high quota value. While this issue had been addressed for the BSAI region through the CDQ program, these factors also lead to decreased participation in communities traditionally dependent on the halibut or sablefish fisheries in other regions of Alaska. To address this issue, the North Pacific Fishery Management Council (NPFMC) implemented the Community Quota Entity (CQE) program in 2005. Under the program, eligible communities could form a non-profit corporation to purchase and manage quota share on their behalf. As of 2010, the Prince of Wales Island Community Holding Corporation, which represents Craig, was the only CQE non-profit that had purchased quota share.[95] More recently, at the October 2012 meeting of the NPFMC, Council members voted to approve a new catch sharing plan for halibut that would combine the allocations given to the commercial and recreational sectors;[96] however, as of the printing of this document, NMFS has not issued a final rule solidifying this new management structure.

Halibut and sablefish are primarily caught using longline gear on vessels of between approximately 50 to 100 feet in length,[97] although some state-managed sablefish fisheries in inside waters allow for use of pot, jig, hand-troll gear, or bottom-trawl gear.[98] Groundfish are still caught in trawl nets and some of this is delivered to onshore processors or floating processors, but the majority are caught on large catcher/processors the size of a football field and frozen at sea.[99] Today the groundfish fisheries are the largest in terms of both weight and value out of all the North Pacific fisheries. Walleye pollock independently accounted for almost half of all landings weight in North Pacific fisheries between 2000 and 2009,[100] and in fact the Eastern

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[93] Fina, Mark. 2011. "Evolution of Catch Share Management: Lessons from Catch Share Management in the North Pacific." *Fisheries*, Vol. 36(4). Retrieved September 12, 2012 from http://www.fakr.noaa.gov/npfmc/PDFdocuments/catch_shares/Fina_CatchShare_411.pdf.

[94] International Pacific Halibut Commission. 2012. *Pacific Halibut Fishery Regulations 2012*. Retrieved October 16, 2012 from http://www.iphc.int/publications/regs/2012iphcregs.pdf.

[95] North Pacific Fishery Management Council. (2010). *Review of the Community Quota Entity (CQE) Program under the Halibut/Sablefish IFQ Program.* Retrieved October 23, 2012 from: http://www.fakr.noaa.gov/npfmc/PDFdocuments/halibut/CQEreport210.pdf.

[96] North Pacific Fishery Management Council. (2012). Draft for Public Review: Regulatory Amendment for a Catch Sharing Plan for the Pacific Halibut Charter Sector and Commercial Setline Sector in International Pacific Halibut Commission Regulatory Area 2C and Area 3A – Environmental Assessment/Regulatory Impact Review/Initial Regulatory Flexibility Analysis. Anchorage. Retrieved November 21, 2012 from http://www.fakr.noaa.gov/analyses/halibut/drafthalibut_csp0912.pdf.

[97] Gay, Joel. (1997). Commercial fishing in Alaska. *Alaska Geographic*, 24(3).

[98] See footnote 92.

[99] See footnote 97.

[100] National Marine Fisheries Service. (2010). *Fisheries Economics of the United States, 2009*. U.S. Dept. of Commerce, NOAA Tech. Memo. NMFS-F/SPO-118, 172 p. Retrieved November 20, 2012 from http://www.st.nmfs.noaa.gov/st5/publication/econ/2009/FEUS%202009%20ALL.pdf.

Bering Sea pollock fishery is the largest 'by-volume fishery' in the U.S.[101] Pacific cod was landed in the third greatest volume in Alaska over the decade, after salmon.[102]

Walleye pollock remains a top volume fishery in Alaska despite limitations placed on the fishery due to concerns about Steller sea lion populations. Between the late 1970s and the early 1990s, Steller sea lion populations in the western Gulf of Alaska (GOA) and Aleutian Islands (AI) declined by almost 80%. Pollock is a primary food source for the Steller sea lion, and expansion of the high volume pollock fishery into the AI region in the 1970s was implicated in the decline.[103] In order to protect Steller sea lions, pollock fisheries management measures include time and area closures around critical sea lion habitat, and reductions in total allowable catch (TAC) that can be harvested from critical habitat areas.[104] In addition, NMFS listed the eastern Aleutian Islands population segment of Steller sea lions as endangered under the Endangered Species Act in 2011. Conflict still occurs, however, as the decision was legally challenged and NMFS is redoing its analysis regarding whether the population should continue to be listed.

Crab. Crab is commercially harvested in the North Pacific using pot gear or ring nets. The baited pots range in different sizes to catch different target species, and target species are also caught at varying depths ranging from 20m for Dungeness to as deep as 200-1000m for golden king crab. Seven species of crab are commercially caught in the North Pacific: red king crab (*Paralithodes camtschaticus*), blue king crab (*Paralithodes platypus*), golden king crab (*Lithodes aequispinus*), Tanner crab (*Chionoecetes bairdi*), snow crab (*Chionoecetes opilio*), hair crab (*Erimacrus isenbeckii*), and Dungeness crab (*Cancer magister*). Commercial fisheries for these species constitute approximately one-third of the total catch of crab in the U.S.[105]

Red king crab stocks range from Norton Sound to the Bering Sea / Aleutian Island (BSAI) region, as well as the Gulf of Alaska and Southeast Alaska. Blue king crabs are more concentrated, with small populations around islands in the Bering Sea and areas of the Gulf of Alaska and Southeast Alaska. Golden king crabs are distributed along the Aleutian Island chain, the Bering Sea, and Gulf of Alaska, and are also harvested in Southeast Alaska. Tanner crabs are found in the eastern Bering Sea, Aleutian Islands, and Gulf of Alaska, while snow crab are found in the north and central regions of the Bering Sea.[106]

Initially, Bering Sea crab stocks were targeted by Japanese trawlers starting in the late 1800s with a break during World War II, with Japanese fishers returning in the mid-1950s. In the 1920s American boats began fishing in Cook Inlet, Kodiak, and the Alaska Peninsula and the first crab cannery opened at that time. Crabbing was revolutionized with the freezing of catches which had never been done before. In 1959, tangle nets and trawlers were banned in the state of Alaska and it was necessary that crab fishermen find a new harvest method. Alaskan crabbers

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[101] NOAA Fisheries Service, Alaska Fisheries Science Center. (2010). Walleye Pollock Fact Sheet. Retrieved November 21, 2012 from http://www.afsc.noaa.gov/Education/factsheets/10_Wpoll_FS.pdf.
[102] See footnote 100.
[103] Prince William Sound Science Center. (2007). *Steller Sea Lion Research*. Retrieved November 21, 2012 from http://www.pwssc.org/research/biological/Stellar/ssl.shtml.
[104] Alaska Department of Fish and Game. (2012). *Walleye Pollock Species Profile*. Retrieved November 21, 2012 from http://www.adfg.alaska.gov/index.cfm?adfg=walleyepollock.main.
[105] Alaska Department of Fish and Game. (n.d.) *Information by Fishery: Commercial Crab Fisheries.* Retrieved November 26, 2012 from http://www.adfg.alaska.gov/index.cfm?adfg=CommercialByFisheryShellfish.crab
[106] Ibid.

developed new pots based on those used by fishermen in the Lower 48, but immensely stronger – in the end weighing up to 800 pounds and reaching eight feet by three feet.[107]

In the 1960s, the demand and price for crab increased and by the end of that decade the crab fisheries around the Alaska Peninsula and Kodiak had decreased and fishermen's attention was focused on the eastern Bering Sea where "the average boat's catch quadrupled from 1968 to 1978" and prices rose immensely "from 38 cents a pound to $1.23 in four years."[108] Fortunes could be made overnight or at least in a short derby-style crabbing season for both boat owners and crewmembers and money flowed freely. The peak of the lucrative Bristol Bay king crab fishery was in 1980, where 130 million pounds was landed by a fleet of 236 boats in fewer than six weeks, for an average amount landed per boat of $500,000, and an average crew share of about $10,000 per week. Suddenly, the next year the fishery crashed to only 34 million pounds landed, and in 1982 only 3 million were landed.[109] The cause of this collapse remains unclear, and king crab stocks have never recovered to the extremely high levels of 1980.[110] In addition to king crab, Tanner crab harvests saw a peak in the late 1970s, while snow crab harvests increased in the 1980s and 1990s.[111]

By the early 2000s, king and snow crab fisheries were highly overcapitalized. The entire Bristol Bay red king crab season lasted several days, and the Bering Sea snow crab fishery lasted less than 2 weeks each year. Due to concerns about crew safety and inefficiency in these fisheries, NMFS implemented a crab rationalization program in 2005. The crab rationalization program resulted in a reduction of fleet size and is credited with improved crew safety and reduced fuel consumption. The program also led to a dramatic reduction in the number of crew positions available in BSAI crab fisheries, which has led to hardship for crew members from remote communities lacking other sources of employment.[112]

Dungeness crab is also an important commercial species ranging from Southeast Alaska to the Aleutian Islands. Important centers of the Dungeness crab fishery were historically located in Prince William Sound, Cook Inlet, Kodiak, the Alaska Peninsula and eastern Aleutian Islands, and Southeast Alaska. However, Dungeness crab stocks in Prince William Sound, the Copper River delta and the Kachemak Bay area of Cook Inlet have declined to levels that no longer support commercial fisheries. The decline may be due to some combination of overfishing, sea otter predation, and unfavorable climatic conditions. Small commercial fisheries are still viable in Kodiak and Southeast Alaska. However, the expanding range of sea otters in Southeast Alaska has had a sizeable impact on Dungeness crab stocks in recent years, leading to significant harvest and economic losses.[113]

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[107] See footnote 105.
[108] Gay, Joel. (1997). Commercial fishing in Alaska. *Alaska Geographic*, 24(3).
[109] Ibid.
[110] Loy, Wesley. (2005). Last great crab race, open derbies to be eliminated in favor of catch quotas for each boat. *Anchorage Daily News*, January 16, 2005. Retrieved August 18, 2005 from http://www.ifqsforfisheries.org/cover_story/news_crab.php.
[111] See footnote 79.
[112] Fina, Mark. 2011. "Evolution of Catch Share Management: Lessons from Catch Share Management in the North Pacific." *Fisheries*, Vol. 36(4). Retrieved September 12, 2012 from http://www.fakr.noaa.gov/npfmc/PDFdocuments/catch_shares/Fina_CatchShare_411.pdf.
[113] McDowell Group. 2011. *Sea Otter Impacts on Commercial Fisheries in Southeast Alaska*. Prepared for Southeast Alaska Regional Dive Fisheries Association. Retrieved September 11, 2012 from http://www.scribd.com/doc/74857876/MCDOWELL-GROUP-2011-Sea-Otter-Impacts-Report.

It is also important to mention the historical hair crab fishery that took place between the 1960s and 2000 near the Pribilof Islands. The fishery was started by the Japanese in the 1960s, and U.S. vessels began participating in1979. However, the commercial fishery for hair crab was closed in 2000 due to low stock abundance. The stock remains depressed despite the closure.[114]

Other shellfish. In addition to North Pacific crab fisheries, a number of other shellfish species support commercial fisheries around Alaska. These include pot and trawl fisheries for shrimp, a dredge fishery for scallops, dive fisheries for sea urchin, sea cucumber, and Geoduck clams, and shovel fisheries for razor, littleneck, and other hardshell clams.

Pot fisheries targeting spot shrimp (*Pandalus platyceros*) currently take place in Southeast Alaska and Prince William Sound. The Prince William Sound spot shrimp fishery reopened in 2010 after being closed since the early 1990s due to low stock abundance. Spot shrimp stocks in Southeast Alaska are relatively stable, and annual harvest is capped at 800,000 pounds.[115,116] Historically important trawl fisheries for northern shrimp (*Pandalus borealis*) are now closed following dramatic population declines in the late 1970s and 1980s.[117,118] Today, shrimp trawl harvest is focused on sidestriped shrimp (*Pandalopsis dispar*), a larger and more valuable species.[119]

Weathervane scallops are harvested using dredges. Commercial scallop beds are located in the Gulf of Alaska, Bering Sea, and the Aleutian Islands. Given overharvest of scallop stocks throughout the world, Alaska's management of the scallop fishery is conservative, requiring 100% observer coverage in federal waters and scallop bycatch limits for crab vessels. Area closures are also common to protect bottom habitats from the impact of dredging.[120]

Intertidal clam harvests in Alaska are concentrated along the sandy beaches of Cook Inlet, the Alaska Peninsula, and the Cordova area. Littleneck and other hardshell clams (cockles and butter clams) are dug by hand shovel, and razor clams are dug with shovels and 'guns'.[121] In addition, a dive fishery for Geoduck clams has grown in Southeast Alaska in recent decades, after a market for Geoduck had already been established by fisheries in Washington State and B.C., Canada.[122]

In addition, dive fisheries for sea urchin and sea cucumber take place in Southeast Alaska, as well as more limited harvests in the Kodiak Island and Alaska Peninsula regions. Red sea urchin is the primary target of the Southeast Alaska fishery, while green sea urchin is harvested in the Kodiak area. Red sea cucumber is the only commercially harvested species of

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[114] State of Alaska Commercial Fisheries Entry Commission. (2007). A Brief Overview of the Bering Sea Hair Crab Fishery and the Vessel Limited Entry Program. CFEC Report No. 07-1N. Retrieved November 20, 2012 from http://www.cfec.state.ak.us/RESEARCH/07-1N/Rpt07-1N.pdf.
[115] Woodby, Doug, Dave Carlile, Shareef Siddeek, Fritz Funk, John H. Clark, and Lee Hulbert. (2005). *Commercial Fisheries of Alaska.* Alaska Dept. of Fish and Game, Special Publication No. 05-09. Retrieved December 29, 2011 from http://www.adfg.alaska.gov/FedAidPDFs/sp05-09.pdf.
[116] Alaska Dept. of Fish and Game. (2012). *Spot Shrimp Species Description*. Retrieved November 20, 2012 from http://www.adfg.alaska.gov/index.cfm?adfg=northernshrimp.printerfriendly.
[117] See footnote 115.
[118] Alaska Dept. of Fish and Game. (2012). *Northern Shrimp Species Description*. Retrieved April 2, 2012 from http://www.adfg.alaska.gov/index.cfm?adfg=northernshrimp.printerfriendly.
[119] Ibid.
[120] See footnote 115.
[121] Ibid.
[122] Ibid.

sea cucumber in Alaska.[123] As in the case of Southeast Alaska Dungeness crab stocks, the impact of an increasing sea otter population has led to significant economic losses in these fisheries in recent years.[124]

Fish Landings and Processing

One notable aspect of many Alaskan fisheries is the high volume of processing activity that occurs offshore on floating processors. Because this document focuses on "fishing communities" as defined in the MSFMCA (16 U.S.C 38 §1802 (16) and further specified in NMFS guidelines,[125,126] we are primarily concerned with inshore processing activity. Offshore activities are relevant insofar as they affect local communities through purchase and loading of goods and services, employment, employee furloughs, and processed product offloading. Fish processed offshore and offloaded in Alaska communities as processed product is converted into a whole fish weight by NOAA for statewide tabulation.[127] Offshore product is not credited to specific communities.

The amount of landings in each community depends in large part on the community's proximity to productive fisheries, the size of the local fleet, and existing port facilities. In addition, the fish processing industry provides vital employment opportunities, income sources, and tax revenues for many Alaskan communities. In many cases, it is the most value-added point in the fishery process. Whether a community serves as a processing center, and whether fish processing is economically productive for a community, depend on a number of factors including location, population size, proximity to major fishing fleets, and the composition of species being processed.

Tables 8 and 9, below, list the top ten communities by weight and value of landings purchased by local fish buyers. Not surprisingly, in both 2000 and 2010, Dutch Harbor ranked highest both in terms of ex-vessel weight of landings and in terms of the monetary value of landings. In 2000, Akutan, ranked third in terms of weight, comes in behind Kodiak in terms of value. This is because Akutan is located along the Aleutian Island chain and processes primarily pollock and other groundfish species, a high volume, low per-unit value niche, while Kodiak processes salmon, halibut and other high-value species. This shows that geographic location affects community access to particular species of fishery resources, and this access in turn exerts an important influence on the community's economic vitality. By 2010, processing in Kodiak activities had increased significantly, moving it ahead of Akutan in both pounds landed and ex-vessel value. But the changing order of communities between volume and value underscores the difference in fishery resource value.

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[123] Ibid.
[124] McDowell Group (2011). *Sea Otter Impacts on Commercial Fisheries in Southeast Alaska*. Prepared for Southeast Alaska Regional Dive Fisheries Association. Retrieved September 11, 2012 from http://www.scribd.com/doc/74857876/MCDOWELL-GROUP-2011-Sea-Otter-Impacts-Report.
[125] National Oceanic and Atmospheric Administration. (1998). *50 CFR Part 600, Magnuson-Stevens Act Provisions; National Standard Guidelines; Final Rule.* Federal Register 63 (84): 24211-24237.
[126] National Oceanic and Atmospheric Administration. (2001). *Guidance for Social Impact Assessment* in Appendix 2G, page 13. Retrieved from http://www.st.nmfs.gov/st1/econ/cia/sia_appendix2g.pdf.
[127] National Oceanic and Atmospheric Administration. (2003). *Commercial Fisheries Landings: Data Caveats.*

Table 8. Top Ten Communities by Landings (ex-vessel weight) in 2000 and 2010.[128]

	Year 2000		Year 2010	
Rank	**Community**	**# of Fish Buyers**	**Community**	**# of Fish Buyers**
1	Unalaska/Dutch Harbor	29	Unalaska/Dutch Harbor	14
2	Akutan	3	Kodiak	33
3	Kodiak	27	Akutan	4
4	Cordova	50	Cordova	33
5	Sitka	147	Ketchikan	76
6	Sand Point	4	Sitka	115
7	King Cove	9	King Cove	7
8	Naknek	17	Sand Point	6
9	Valdez	13	Valdez	20
10	Seward	18	Naknek	23
	Top Ten Communities: Total Fish Buyers	**317**		**331**
	Top Ten Communities Combined Landings (weight)	**911,156 tons**		**853,304 tons**
	Total Statewide Landings (weight)	**992,809 tons***		**1,053,702 tons***

* Total tons of fish landed in Alaskan communities. Landings for the top ten communities listed here sum to 91.8% of landings made in all Alaskan communities in 2000 and 81.0% of landings made in all Alaskan communities in 2010.

Table 9. Top 10 Communities by Landings (ex-vessel value) in 2000 and 2010.[129]

	Year 2000		Year 2010	
Rank	**Community**	**# of Fish Buyers**	**Community**	**# of Fish Buyers**
1	Unalaska/Dutch Harbor	29	Unalaska/Dutch Harbor	14
2	Kodiak	27	Kodiak	33
3	Akutan	3	Cordova	33
4	Cordova	50	Akutan	4
5	Sitka	147	Sitka	115
6	Seward	18	Homer	27
7	King Cove	9	Naknek	23
8	Homer	37	Seward	13
9	Naknek	17	Ketchikan	76
10	Petersburg	36	Dillingham	18
	Top Ten Communities: Total Fish Buyers	**337**		**338**
	Top Ten Communities Combined Landings (U.S. dollars)	**$581.2 million**		**$835.9 million**
	Total Landings made in Alaskan communities (U.S. dollars)	**$1,232.3 million***		**$733.5 million***

* Total value of all landings made in Alaskan communities. The value of landings for the top ten communities listed here sum to 79% of the value of all landings made in Alaskan communities in 2000 and 68% of landings made in all Alaskan communities in 2010.

[128] Alaska Department of Fish and Game, and Alaska Commercial Fisheries Entry Commission. (2011). *Alaska fish ticket data*. Data compiled by Alaska Fisheries Information Alaska Fisheries Information Network for Alaska Fisheries Science Center, Seattle. [URL not publicly available as some information is confidential.]
[129] Ibid.

In addition to the value-per-unit factor affected by the types of fish processed, the structure of processing differs by community. For example, Akutan, with only a single shore-side processing facility present between 2000 and 2010, processed a greater volume of fish than Kodiak with its 13 shore-side processors in 2000 and 11 in 2010. This underscores the profitability of operating many small-scale specialty processors in a high per-unit value market such as Kodiak.

Of the 196 communities which were profiled, 65 communities included fish buyers that filed fish tickets with the CFEC in 2010 (Table 10). Twenty-four communities included more than 10 fish buyers, 20 communities had 3 to 10 fish buyers, 1 community had 2 fish buyers, 20 communities had 1 fish buyer, and 130 communities did not have an active fish buyer present in 2010.[130] Similarly few communities have shore-side processing facilities available to them. Again, of the 196 profiled communities, 66 had shore-side processing facilities that filed Intent to Operate declarations with ADF&G in 2010 (Table 10). Of these, two communities had more than 10 shore-side processing facilities, 8 had 6 to 10 shore-side facilities, 11 had 3 to 5 shore-side facilities, 7 had two shore-side facilities, and 38 had only one shore-side facility.

Table 10. Profiled communities with more than three shore-side processors in 2000 and 2010.[131]

Year 2000				Year 2010		
Rank	**Community**	**# of Shore-side Processors**	**# of Fish Buyers**	**Community**	**# of Shore-side Processors**	**# of Fish Buyers**
1	Anchorage	17	8	Anchorage	13	11
2	Kodiak	15	27	Kodiak	11	33
3	Juneau	13	31	Juneau	9	85
4	Naknek	13	17	Naknek	9	23
5	Homer	12	37	Ketchikan	8	76
6	Kenai	11	11	Petersburg	8	52
7	Sitka	10	147	Kenai	8	43
8	Ketchikan	10	80	Cordova	7	33
9	Cordova	9	50	Unalaska/Dutch Harbor	7	14
10	Petersburg	9	36	Seward	6	13
11	Unalaska/Dutch Harbor	8	29	Sitka	5	115
12	Haines	6	87	Craig	5	42
13	Yakutat	5	21	Homer	5	27
14	Seward	5	18	Haines	4	21
15	Valdez	5	13	Yakutat	4	18
16	Craig	4	27	Egegik	4	13
17	Egegik	4	6	Klawock	4	3
18	Kasilof	4	3			
19	Soldotna	4	0			

[130] Alaska Department of Fish and Game. (2011). Data on Alaska fish processors. ADF&G Division of Commercial Fisheries. Data compiled by Alaska Fisheries Information Network for Alaska Fisheries Science Center, Seattle. [URL not publicly available as some information is confidential.]

[131] Alaska Department of Fish and Game, and Alaska Commercial Fisheries Entry Commission. (2011). Alaska fish ticket data. Data compiled by Alaska Fisheries Information Network for Alaska Fisheries Science Center, Seattle. [URL not publicly available as some information is confidential.]

Labor in Alaska's Commercial Fishing Industry

The commercial fishing sector is the largest private employer in Alaska. The fishing industry provides a variety of employment opportunities, including fishing, processing, transport, and dock and harbor work. According to the CFEC, in 2000 there were 21,009 commercial permits sold for all fisheries in Alaska; 58% of which were actively fished. The number of permits issued to residents of Alaskan communities declined over the decade to 17,698 in 2010 with 56% being actively fished (Table 11).

The number of licensed crew members employed annually in Alaskan commercial fisheries has declined over recent decades, from more than 32,000 in 1993 to approximately 17,500 in 2003 to 11,387 in 2010, an average decrease of 5.7% per year during that period (Table 12).[132,133] The decline is likely due to a combination of declining salmon prices, fishery management policy changes, and other factors. Although the majority of licensed crew members are Alaska residents (59%), the labor pool also draws from Washington (22%), other U.S. states, and around the world. The industry remains male-dominated, with women accounting for just 14% of licensed crew over the past decade. In addition, personnel turnover is high; the average crew member holds a license for just 1.8 years.[134] Similar declines were seen in the total number of vessels primarily owned by Alaskan residents, vessels homeported in Alaskan communities and vessels landing catch in Alaskan communities (Table 12).

The employment data collected by the U.S. Census noticeably under-represents those involved in the fishing industry. Despite the heavy reliance on data supplied by the Census for the composition of the profiles contained in this document, the employment data given on fishing was not reported in the profiles because of its visible deficiencies. The figures originate from Census form questions which are phrased in a way that likely deters answers from self-employed persons (as most fishermen are). In the results of the Census, agriculture, forestry, fishing and hunting were combined together into one reported figure, which makes it difficult to discern which individuals were involved in the fishing portion of the category. Also, when examining the total figure for the category which includes fishing, the number is simply too small to be accurate even when compared to just the number of individuals in a community which fished their permits.

[132] Alaska Department of Fish and Game. (2011). *Alaska sport fish and crew license holders, 2000 – 2010*. ADF&G Division of Administrative Services. Data compiled by Alaska Fisheries Information Network for Alaska Fisheries Science Center, Seattle. [URL not publicly available as some information is confidential.]
[133] Carothers, Courtney and Jennifer Sepez. (2005). Commercial Fishing Crew Demographics and Trends in the North Pacific. Poster presented at the *Managing Our Nation's Fisheries: Focus on the Future* Conference, Washington D.C., March 2005. Available at ftp://ftp.afsc.noaa.gov/posters/pCarothers01_comm-fish-crew-demographics.pdf.
[134] Ibid.

Table 11. Total Permits Held and Permit Holders by Species in Alaskan communities: 2000-2010.

Species		2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Groundfish (LLP) [1]	Total permits	1,593	1,557	1,536	1,531	1,518	1,528	1,533	1,530	1,538	1,542	1,550
	Active permits	668	660	635	635	610	591	564	562	565	575	590
	% of permits fished	41%	42%	41%	41%	40%	38%	36%	36%	36%	37%	38%
	Total permit holders	1,414	1,384	1,370	1,360	1,346	1,353	1,359	1,358	1,366	1,360	1,366
Crab (LLP) [1]	Total permits	206	204	198	194	194	186	188	188	196	200	201
	Active permits	73	83	80	82	83	80	67	63	61	60	59
	% of permits fished	35%	40%	40%	42%	42%	43%	35%	33%	31%	30%	29%
	Total permit holders	176	176	174	172	166	166	163	161	165	166	171
Federal Fisheries Permits[1]	Total permits	1,184	1,228	1,256	1,031	1,083	1,113	920	1,044	1,110	942	971
	Fished permits	9	11	9	604	607	584	578	618	635	614	614
	% of permits fished	%	%	%	58%	56%	52%	62%	59%	57%	65%	63%
	Total permit holders	1,087	1,121	1,146	959	1,005	1,025	871	987	1,044	895	920
Crab (CFEC) [2]	Total permits	931	1,156	1,110	987	961	1,028	885	832	811	782	867
	Fished permits	580	733	756	620	565	594	444	433	424	392	471
	% of permits fished	62%	63%	68%	62%	58%	57%	50%	52%	52%	50%	54%
	Total permit holders	753	965	908	812	755	878	776	755	739	711	790
Other shellfish (CFEC) [2]	Total permits	973	1,024	883	855	848	858	833	816	821	789	990
	Fished permits	498	447	427	432	426	414	366	327	310	305	420
	% of permits fished	51%	43%	48%	50%	50%	48%	43%	40%	37%	38%	42%
	Total permit holders	748	782	731	715	712	707	702	692	684	676	875
Halibut (CFEC) [2]	Total permits	2,925	2,851	2,725	2,656	2,492	2,363	2,325	2,309	2,180	2,131	2,052
	Fished permits	2,172	2,080	2,111	2,096	1,991	1,925	1,946	1,965	1,871	1,767	1,738
	% of permits fished	74%	72%	77%	78%	79%	81%	83%	85%	85%	82%	84%
	Total permit holders	2,787	2,713	2,614	2,546	2,398	2,292	2,263	2,253	2,128	2,077	2,003
Herring (CFEC) [2]	Total permits	2,703	2,474	2,271	2,211	2,120	2,097	2,062	1,988	1,976	1,988	2,002
	Fished permits	866	664	653	613	519	514	361	293	384	417	402
	% of permits fished	32%	26%	28%	27%	24%	24%	17%	14%	19%	20%	20%
	Total permit holders	2,183	2,072	1,915	1,892	1,832	1,812	1,778	1,726	1,733	1,732	1,736

Table 11. Cont'd. Total Permits Held and Permit Holders by Species in Alaskan communities: 2000-2010.

Species		2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Sablefish (CFEC) [2]	Total permits	698	699	653	649	642	621	620	613	594	592	581
	Fished permits	580	602	584	571	575	559	562	552	536	541	530
	% of permits fished	83%	86%	89%	87%	89%	90%	90%	90%	90%	91%	91%
	Total permit holders	619	619	587	579	576	561	558	547	537	537	527
Groundfish (CFEC) [2]	Total permits	2,712	2,363	1,992	1,908	1,905	1,761	1,358	1,298	1,399	1,289	1,190
	Fished permits	1,048	772	635	709	674	583	485	505	588	556	540
	% of permits fished	38%	32%	31%	37%	35%	33%	35%	38%	42%	43%	45%
	Total permit holders	1,841	1,656	1,415	1,376	1,367	1,279	1,044	1,017	1,053	990	936
Other Finfish (CFEC) [2]	Total permits	50	36	26	77	65	69	106	80	95	116	92
	Fished permits	2	4	2	39	3	16	34	24	26	42	44
	% of permits fished	4%	11%	7%	50%	4%	23%	32%	30%	27%	36%	47%
	Total permit holders	47	34	26	77	65	68	106	80	95	116	92
Salmon (CFEC) [2]	Total permits	10,017	9,998	9,950	9,944	9,956	9,978	9,943	9,931	9,940	9,892	9,924
	Fished permits	6,501	5,486	5,110	5,353	5,532	5,774	5,712	5,782	5,734	5,607	5,865
	% of permits fished	64%	54%	51%	53%	55%	57%	57%	58%	57%	56%	59%
	Total permit holders	10,287	10,148	9,923	9,953	9,966	10,042	9,963	9,892	9,903	9,845	9,964
Total CFEC Permits[2]	*Permits*	*21,009*	*20,601*	*19,610*	*19,287*	*18,989*	*18,775*	*18,132*	*17,867*	*17,816*	*17,579*	*17,698*
	Fished permits	*12,247*	*10,788*	*10,278*	*10,433*	*10,285*	*10,379*	*9,910*	*9,881*	*9,873*	*9,627*	*10,010*
	% of permits fished	*58%*	*52%*	*52%*	*54%*	*54%*	*55%*	*54%*	*55%*	*55%*	*54%*	*56%*
	Permit holders	*13,271*	*13,114*	*12,754*	*12,785*	*12,698*	*12,714*	*12,603*	*12,568*	*12,496*	*12,404*	*12,558*

[1] National Marine Fisheries Service. (2011). *Data on Limited Liability Permits, Alaska Federal Processor Permits (FPP), Federal Fisheries Permits (FFP), and Permit holders*. NMFS Alaska Regional Office. Data compiled by Alaska Fisheries Information Network for Alaska Fisheries Science Center, Seattle. [URL not publicly available as some information is confidential.]

[2] Alaska Commercial Fisheries Entry Commission. (2011). *Alaska commercial fishing permits, permit holders, and vessel licenses, 2000 – 2010*. Data compiled by Alaska Fisheries Information Network for Alaska Fisheries Science Center, Seattle. [URL not publicly available as some information is confidential.]

Table 12. Characteristics of the Commercial Fishing Sector in all Alaskan communities: 2000-2010.

Year	Crew license holders[1]	Count of all fish buyers[2]	Count of shore-side processing facilities[3]	Vessels primarily owned by Alaskan residents[4]	Vessels homeported in Alaska[4]	Vessels landing catch in Alaskan communities[2]	Total net pounds landed in Alaskan communities[2]	Total ex-vessel value of landings in Alaskan communities[2]
2000	13,969	233	583	12,028	13,017	6,466	2,188,769,897	$733,483,275
2001	11,467	214	531	11,538	12,528	6,027	2,378,957,389	$627,142,796
2002	9,837	220	545	10,882	11,832	5,647	2,508,194,612	$676,262,504
2003	10,461	199	512	10,555	11,576	5,624	2,599,980,888	$797,536,302
2004	10,518	194	583	10,370	11,466	6,088	2,720,867,260	$863,035,877
2005	10,754	200	613	7,479	8,265	6,295	2,925,949,753	$975,161,750
2006	10,709	194	598	7,219	8,044	6,101	2,772,927,194	$1,029,754,286
2007	10,957	195	597	7,184	8,015	6,017	2,739,863,072	$1,137,916,591
2008	10,828	192	606	7,140	8,017	6,006	2,245,098,643	$1,317,397,706
2009	10,779	187	591	7,069	8,010	6,020	2,025,613,609	$1,008,743,788
2010	11,387	181	595	7,218	8,140	6,010	2,323,017,267	$1,232,334,327

Note: Cells showing – indicate that the data are considered confidential.

[1] Alaska Department of Fish and Game. (2011). *Alaska sport fish and crew license holders, 2000 – 2010*. ADF&G Division of Administrative Services. Data compiled by Alaska Fisheries Information Network for Alaska Fisheries Science Center, Seattle. [URL not publicly available as some information is confidential.]

[2] Alaska Department of Fish and Game, and Alaska Commercial Fisheries Entry Commission. (2011). *Alaska fish ticket data*. Data compiled by Alaska Fisheries Information Network for Alaska Fisheries Science Center, Seattle. [URL not publicly available as some information is confidential.]

[3] Alaska Department of Fish and Game. (2011). *Data on Alaska fish processors*. ADF&G Division of Commercial Fisheries. Data compiled by Alaska Fisheries Information Network for Alaska Fisheries Science Center, Seattle. [URL not publicly available as some information is confidential.]

[4] Alaska Commercial Fisheries Entry Commission. (2011). *Alaska commercial fishing permits, permit holders, and vessel licenses, 2000 – 2010*. Data compiled by Alaska Fisheries Information Network for Alaska Fisheries Science Center, Seattle. [URL not publicly available as some information is confidential.]

The numbers of CFEC permits fished/not fished are given in the profiles, however; as well as the number of community members which held a crew license. Processing sector employment data was not available to us at the community level and is not included in the profiles. However, processing sector data is available at a higher aggregation level, such as at regional levels. Employment information for the important offshore processing sector is also not discussed in the profiles because the effect on Alaska communities is indirect and is brokered for the most part out of Seattle. Information regarding Seattle and other West Coast fishing communities is provided in the community profiles produced for that region.[135]

Finally, over the last two decades, a number of catch share programs have been implemented in Alaskan fisheries. Three of which were implemented with respect to federal fisheries for halibut, sablefish and crab. The community profiles specifically call out these three programs as they are perhaps the most important to residents of Alaskan fishing communities. Data is provided in each profile on the participation of residents in these fisheries. Statewide, these catch share fisheries have allotted a significant number of pounds to quota share holders that are residents in Alaskan communities. However, allocation of individual fishing quota (IFQ) has decreased steadily for both the halibut and sablefish programs from approximately 31.1 million pounds of halibut and 13.2 million pounds of sablefish in 2000 to approximately 23.6 million pounds of halibut and 10.7 million pounds of sablefish in 2010 (Tables 13 and 15). On the contrary, the annual allocation of IFQ in the federal crab fisheries increased substantially from approximately 8.8 million pounds at the beginning of the program in 2005 to approximately 19.1 million pounds in 2010 (Table 17).

When broken down to the community level, the quota shares and annual IFQ allocation held by Alaskan residents associated with all three of these federal catch share fisheries is concentrated in few communities (Tables 14, 16 and 18). In addition, significant consolidation of quota shares owned by Alaskans has occurred in the federal halibut fishery, where residents of 137 Alaskan communities owned quota shares in 2000, but only 84 Alaskan communities had residents who owned quota shares in 2010. Both the federal sablefish and crab fisheries maintained steady numbers of Alaskan communities that participated in these fisheries between 2000 and 2010. In 2000, 50 communities were allocated sablefish quota and 14 were allocated crab quota in 2005 (when the program commenced), compared to 49 and 15 in 2010, respectively.[136]

Tables 14, 16 and 18 provide further information on the top ten communities with holdings in each of these federal fisheries. Between 2000 and 2010, the rankings of the top ten communities with regards to annual IFQ allocations in all three fisheries changed minimally. In fact for sablefish, the top five communities with IFQ stayed the same of this time period and for halibut, the top four communities remained the same. For both of these fisheries, the top ten communities with IFQ are concentrated in southcentral and southeastern Alaska, with the exception of Dillingham in Bristol Bay. With regards to crab, the rank of communities changed slightly; however the magnitude of IFQ and quota share holdings changed dramatically for some

[135] Norman, Karma, Jennifer Sepez, Heather Lazrus, Nicole Milne, Christina Package, Suzanne Russell, Kevin Grant, Robin Petersen Lewis, John Primo, Emile Springer, Megan Styles, Bryan Tilt and Ismael Vaccaro. (2007). Community profiles for West Coast and North Pacific Fisheries: Washington, Oregon, California, and other U.S. States. U. S. Dep. Commer., NOAA Tech. Memo. NMFS-NWFSC-85, 602 p.

[136] National Marine Fisheries Service. (2011). Alaska Individual Fishing Quota (IFQ) permit data. NMFS Alaska Regional Office. Data compiled by Alaska Fisheries Information Network for Alaska Fisheries Science Center, Seattle. [URL not publicly available as some information is confidential.]

communities. Anchorage residents, for example, increased their holdings of crab quota shares by almost five fold. In addition, the community of St. Paul acquired a significant number of holdings in the first five years of the program ranking it fourth in terms of IFQ allotment in 2010.

Table 13. Halibut Catch Share Program Participation by Residents of Alaskan Communities: 2000-2010.

Year	Number of Halibut Quota Share Holders	Halibut Quota Shares Held	Halibut IFQ Allotment (pounds)
2000	2,922	209,539,280	31,120,476
2001	2,881	204,268,510	33,552,017
2002	2,854	202,850,549	33,572,824
2003	2,773	200,408,826	33,289,195
2004	2,665	199,617,812	34,361,282
2005	2,593	200,874,442	33,916,535
2006	2,567	203,595,726	32,583,898
2007	2,421	200,862,015	29,988,439
2008	2,295	203,552,163	28,383,640
2009	2,246	204,365,178	25,589,203
2010	2,182	204,936,856	23,647,385

Source: National Marine Fisheries Service. (2011). *Alaska Individual Fishing Quota (IFQ) permit data.* NMFS Alaska Regional Office. Data compiled by Alaska Fisheries Information Network for Alaska Fisheries Science Center, Seattle. [URL not publicly available as some information is confidential.]

Table 14.Top Ten Communities Participating in the Halibut Catch Share Program in 2000 and 2010.

Rank	Year 2000 Community	Year 2000 Halibut IFQ Allotment (pounds)	Year 2000 Halibut Quota Shares Held	Year 2010 Community	Year 2010 Halibut IFQ Allotment (pounds)	Year 2010 Halibut Quota Shares Held
1	Kodiak	9,255,627	57,080,447	Kodiak	6,444,672	47,765,032
2	Homer	3,881,334	23,729,260	Homer	2,906,081	22,477,522
3	Petersburg	3,473,528	26,393,894	Petersburg	2,746,515	29,696,587
4	Sitka	2,539,671	18,087,132	Sitka	1,763,397	18,673,731
5	Juneau	1,680,389	12,475,251	Anchorage	1,414,021	11,277,243
6	Anchorage	1,305,305	9,858,411	Juneau	1,126,851	11,869,905
7	Wrangell	786,869	5,694,096	Cordova	898,079	7,881,097
8	Ketchikan	770,792	5,830,642	Wrangell	479,945	5,778,992
9	Sand Point	757,064	2,724,455	Sand Point	449,399	2,465,946
10	Cordova	557,379	5,623,735	Seward	424,203	3,598,299
Top Ten Communities: Total Halibut IFQ Allotment/Quota Shares		**25,007,958**	**167,497,323**		**18,653,163**	**161,484,354**
Top Ten Communities: Percentage of Total Halibut IFQ		**80.4%**	**78.8%**		**78.9%**	**80.0%**

Source: National Marine Fisheries Service. (2011). *Alaska Individual Fishing Quota (IFQ) permit data.* NMFS Alaska Regional Office. Data compiled by Alaska Fisheries Information Network for Alaska Fisheries Science Center, Seattle. [URL not publicly available as some information is confidential.]

Table 15. Sablefish Catch Share Program Participation by Residents of Alaskan Communities: 2000-2010.

Year	Number of Sablefish Quota Share Holders	Sablefish Quota Shares Held in Alaska	Sablefish IFQ Allotment (pounds)
2000	579	135,581,211	13,205,712
2001	567	136,447,347	12,798,801
2002	552	133,236,225	12,486,873
2003	535	130,355,839	14,368,161
2004	532	128,426,655	15,383,671
2005	522	126,257,695	14,321,610
2006	518	125,471,016	13,705,736
2007	512	123,984,148	13,082,730
2008	515	124,571,050	12,028,038
2009	511	129,818,524	11,056,962
2010	517	132,636,856	10,664,165

Source: National Marine Fisheries Service. (2011). *Alaska Individual Fishing Quota (IFQ) permit data.* NMFS Alaska Regional Office. Data compiled by Alaska Fisheries Information Network for Alaska Fisheries Science Center, Seattle. [URL not publicly available as some information is confidential.]

Table 16. Top Ten Communities Participating in the Sablefish Catch Share Program in 2000 and 2010.

Rank	Year 2000 Community	Year 2000 Sablefish IFQ Allotment (pounds)	Year 2000 Sablefish Quota Shares Held	Year 2010 Community	Year 2010 Sablefish IFQ Allotment (pounds)	Year 2010 Sablefish Quota Shares Held
1	Sitka	3,468,534	33,407,542	Sitka	2,331,889	29,734,443
2	Petersburg	2,713,036	27,963,913	Petersburg	2,059,608	27,422,822
3	Kodiak	1,573,109	17,988,783	Kodiak	1,447,274	19,086,362
4	Homer	1,303,948	14,348,725	Homer	917,114	9,611,888
5	Juneau	1,110,894	10,691,521	Juneau	836,744	9,679,945
6	Seward	481,446	5,348,346	Anchorage	752,348	7,656,130
7	Dillingham	286,564	3,176,112	Seward	480,714	6,659,312
8	Pelican	259,299	2,362,394	Dillingham	263,166	3,181,804
9	Ketchikan	255,102	2,471,368	Cordova	249,802	3,386,595
10	Halibut Cove	251,087	2,766,565	Wrangell	131,150	1,501,025
Top Ten Communities: Total Sablefish IFQ Allotment/Quota Shares		11,703,019	120,525,269		9,469,809	117,920,326
Top Ten Communities: Percentage of Total Sablefish IFQ/Quota Shares		**88.7%**	**88.9%**		**88.8%**	**88.9%**

Source: National Marine Fisheries Service. (2011). *Alaska Individual Fishing Quota (IFQ) permit data.* NMFS Alaska Regional Office. Data compiled by Alaska Fisheries Information Network for Alaska Fisheries Science Center, Seattle. [URL not publicly available as some information is confidential.]

Table 17. Crab Individual Fishing Quota Participation by Residents of Alaskan Communities: 2005-2010.

Year	Number of Crab Quota Share Holders	Crab Quota Shares Held in Alaska	Crab IFQ Allotment (pounds)
2005	96	279,055,343	8,840,502
2006	97	375,550,500	10,139,010
2007	99	415,678,073	18,366,989
2008	102	439,929,323	18,200,864
2009	116	517,769,501	17,428,510
2010	112	535,516,137	19,054,430

Source: National Marine Fisheries Service. (2011). *Alaska Individual Fishing Quota (IFQ) permit data.* NMFS Alaska Regional Office. Data compiled by Alaska Fisheries Information Network for Alaska Fisheries Science Center, Seattle. [URL not publicly available as some information is confidential.]

Table 18. Top Ten Communities Participating in the Crab Individual Fishing Quota Program in 2005 and 2010.

Rank	Year 2005 Community	Year 2005 Crab IFQ Allotment (pounds)	Year 2005 Crab Quota Shares Held	Year 2010 Community	Year 2010 Crab IFQ Allotment (pounds)	Year 2010 Crab Quota Shares Held
1	Kodiak	4,459,871	146,078,033	Anchorage	8,043,956	213,051,176
2	Anchorage	1,832,134	49,486,504	Kodiak	5,715,071	174,235,081
3	Homer	838,857	28,276,099	Homer	1,641,051	47,440,206
4	Dillingham	626,024	19,973,229	St. Paul	1,388,538	35,569,158
5	Petersburg	491,302	15,201,889	Dillingham	823,238	23,425,807
6	Seldovia	190,769	6,654,936	Petersburg	573,533	14,825,512
7	Unalaska/Dutch Harbor	169,993	5,409,814	Seldovia	236,868	7,549,411
8	Yakutat	125,908	4,098,229	Unalaska/Dutch Harbor	183,863	5,534,552
9	King Cove	85,871	2,973,739	Yakutat	150,853	4,014,849
10	Soldotna	8,279	286,797	Sand Point	142,125	4,097,380
Top Ten Communities: Total Crab IFQ Allotment/Quota Shares		8,840,496	278,439,269		18,899,096	529,743,132
Top Ten Communities: Percentage of Total Crab IFQ/Quota Shares		**99.9%**	**99.8%**		**99.2%**	**98.9%**

Source: National Marine Fisheries Service. (2011). *Alaska Individual Fishing Quota (IFQ) permit data*. NMFS Alaska Regional Office. Data compiled by Alaska Fisheries Information Network for Alaska Fisheries Science Center, Seattle. [URL not publicly available as some information is confidential.]

Recreational Fishing

Sport fishing continues to be an important part of Alaska's economy. Opportunities for recreational fishing vary widely by region. Southeastern Alaska, Kodiak and the Kenai Peninsula are the most popular sport fishing destinations in the state; license sales and guide/charter businesses play a vital role in the local economies of these regions (Tables 19-21). In 2000, ADF&G sold 235,316 sport licenses, 16.9% of which were sold to visitors from other states or countries. The number of sport fish licenses sold almost doubled by 2010, where 441,044 licenses were sold, 52.9% of which were sold to visitors to the state indicating that almost the entire increase in licenses was due to license sales to visitors to the state.

The charter fishing industry, which caters to many of these out of state visitors, is especially strong in southcentral and southeast Alaska. The communities most active in catering to charter fishing have stayed relatively stable between 2000 and 2010, with Anchorage, Soldotna, and Sitka at the top, as well as other popular destinations such as Homer and Ketchikan (Table 20). However, it too has seen a relative decrease since 2000. Of the 196 profiled communities, 81 communities had charter businesses in 2010. Overall, the number of sport fish guide businesses in Alaska has dropped steadily from 2,002 in 2000 to 1,259 in 2010. The number of licensed sport fish guides has gone through an even stronger decrease. The number of guides between 2000 and 2004 remained relatively steady at approximately 3,300 and then dropped to a third that in 2005, likely due to the implementation of a 2-fish per person bag limit that was instituted by NOAA in 2005. In recent years, the number of licensed guides has continued to drop, although not as dramatically.

Table 19. Sport Fishing Trends in Alaskan Communities: 2000-2010.

Year	Sport Fish Guide Businesses in Alaska[1]	Sport Fish Guide Licenses Sold to residents of Alaska[1]	Sport Fishing Licenses Sold to residents of Alaska[2]	Sport Fishing Licenses Sold in Alaskan communities[2]
2000	2,002	3,169	195,527	235,316
2001	1,923	3,213	196,768	246,346
2002	1,881	3,334	193,751	263,664
2003	1,853	3,316	200,117	343,936
2004	1,843	3,366	203,828	398,430
2005	1,483	1,020	204,311	424,241
2006	1,486	1,100	198,181	422,625
2007	1,496	1,135	199,270	446,099
2008	1,455	1,102	197,058	455,038
2009	1,321	963	206,031	426,832
2010	1,259	945	207,756	441,044

[1] Alaska Department of Fish and Game. (2011). *Alaska sport fish guide licenses and businesses, 2000 – 2010.* ADF&G Division of Administrative Services. Data compiled by Alaska Fisheries Information Network for Alaska Fisheries Science Center, Seattle. [URL not publicly available as some information is confidential.]

[2] Alaska Department of Fish and Game. (2011). *Alaska sport fish and crew license holders, 2000 – 2010.* ADF&G Division of Administrative Services. Data compiled by Alaska Fisheries Information Network for Alaska Fisheries Science Center, Seattle. [URL not publicly available as some information is confidential.]

Table 20. Top Ten Communities Selling Sport Fishing Licenses in Alaska in 2000 and 2010.

Rank	Year 2000		Year 2010	
	Community	**Sportfish licenses sold**	**Community**	**Sportfish licenses sold**
1	Anchorage	75,997	Anchorage	101,073
2	Ketchikan	25,686	Juneau	77,313
3	Homer	13,646	Ketchikan	33,183
4	Wasilla	13,216	Soldotna	32,797
5	Juneau	12,908	Wasilla	28,511
6	Soldotna	10,087	Fairbanks	25,854
7	Fairbanks	9,589	Homer	19,211
8	Sitka	8,425	Sitka	15,117
9	Kodiak	6,402	Kodiak	11,436
10	Palmer	4,979	Kenai	7,278
Top Ten Communities: Total Sportfish Licenses Sold		**180,935**		**351,773**
Top Ten Communities: Percentage of Total Sportfish Licenses Sold in Alaska		**76.9%**		**79.8%**

Source: Alaska Department of Fish and Game. (2011). *Alaska sport fish and crew license holders, 2000 – 2010*. ADF&G Division of Administrative Services. Data compiled by Alaska Fisheries Information Network for Alaska Fisheries Science Center, Seattle. [URL not publicly available as some information is confidential.]

Table 21. Top Ten Communities With Charter Businesses in Alaska in 2000 and 2010.

Rank	Year 2000		Year 2010	
	Community	**# of Charter Businesses**	**Community**	**# of Charter Businesses**
1	Anchorage	347	Anchorage	144
2	Soldotna	166	Soldotna	141
3	Sitka	147	Sitka	85
4	Juneau	114	Ketchikan	81
5	Ketchikan	111	Homer	72
6	Homer	95	Kodiak	65
7	Kodiak	81	Juneau	58
8	Fairbanks	57	Kenai	47
9	Wasilla	56	Wasilla	40
10	Kenai	40	Ninilchik	38
Top Ten Communities: Total Charter Businesses		**2,002**		**771**
Top Ten Communities: Percentage of Total Charter Businesses in Alaska		**60.6%**		**61.2%**

Source: Alaska Department of Fish and Game. (2011). *Alaska sport fish guide licenses and businesses, 2000 – 2010*. ADF&G Division of Administrative Services. Data compiled by Alaska Fisheries Information Network for Alaska Fisheries Science Center, Seattle. [URL not publicly available as some information is confidential.]

The five species of Pacific salmon, halibut, steelhead, trout and northern pike are the most commonly fished sport species. Most other areas of the state offer sport fishing opportunities to some extent, but do not see the high volume of fishermen that the southeast and central regions attract. These other areas tend to offer less productive stocks of sport species and have more remote locations.

Although revenues generated from sport fishing license sales and guide/charter businesses are important, they are by no means the only forms of community development that stem from the sport fishing industry. Communities that have a reputation as good fishing locations also tend to be linked to the tourism industry in general, with more tourism infrastructure such as lodging accommodations, restaurants and other amenities. Sport fishing, in many cases, is merely one component of a growing tourism industry throughout the state.

Subsistence Fishing

Residents of many Alaskan communities participate in the harvest of fish, wildlife and other wild resources to a higher degree than in other parts of the U.S. A high reliance on subsistence resources characterizes many Native Alaskan communities, both as a source of sustenance and cultural identity.[137,138] The subsistence way of life is also highly valued by non-Native residents of many Alaskan communities, and is often identified as a primary motivation for living in Alaska.[139,140] In remote communities and places lacking full-time employment opportunities, subsistence resource use is typically high. Among several types of legally recognized uses of fish and wildlife (including subsistence, commercial and recreational), subsistence harvest is accorded the highest priority in Alaska by both the state and federal government.[141,142]

The regulations governing the harvest of subsistence resources in Alaska are complex and changing. For many years, the federal government allowed the State of Alaska to manage subsistence harvesting on federal lands. Beginning in 1980 with the adoption of Title VIII of the Alaska National Interest Lands Conservation Act (ANILCA), "non-rural" area residents were prohibited from harvesting subsistence resources on federal lands and waters. A 1989 court case, *McDowell v. State of Alaska,* challenged this designation and a decade-long legal battle ensued. By 1999, the federal government had taken over subsistence management of its own lands and waters; residents of populated areas like the Matanuska-Susitna area and the Kenai Peninsula have been designated "non-rural" and are thus ineligible to harvest subsistence resources on

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[137] Thornton, Thomas F. (1998). "Alaska Native Subsistence: A Matter of Cultural Survival." *Cultural Survival Quarterly*, Issue 22.3. Retrieved November 21, 2012 from http://www.culturalsurvival.org/ourpublications/csq/article/alaska-native-subsistence-a-matter-cultural-survival.

[138] Berger, Thomas R. (1985). *Village Journey: The Report of the Alaska Native Review Commission*. New York: Hill and Wang.

[139] As an example, see the Gustavus Strategic Plan. (Gustavus Strategic Planning Committee (2005). *Gustavus Strategic Plan 2005: Protecting and Planning Our Future.* Retrieved June 15, 2012 from http://cms.gustavus-ak.gov/services/planning/strategic.)

[140] Alaska Dept. of Fish and Game, Division of Subsistence. (2010). *Subsistence in Alaska: A Year 2010 Update*. Retrieved November 21, 2012 from http://www.adfg.alaska.gov/static/home/library/pdfs/subsistence/subsistence_overview2010.pdf.

[141] Alaska Dept. of Fish and Game. (2012). *Subsistence in Alaska: Overview*. Retrieved November 21, 2012 from http://www.adfg.alaska.gov/index.cfm?adfg=subsistence.main.

[142] See footnote 140.

federal lands and waters. Residents of non-rural areas, however, are eligible to harvest subsistence resources on lands and waters of the State of Alaska.[143] This divided system of management between state and federal agencies, known as "dual management," creates a patchwork of differing regulations mapped to the different jurisdictions. For State lands, the Board of Game and the Board of Fisheries, whose members are appointed by the governor and approved by the legislature, create subsistence regulations. For federal lands, the Federal Subsistence Board, whose membership is comprised of leaders from five federal agencies in Alaska and an appointee of the Secretary of Interior, create subsistence regulations.[144,145]

Both the state and federal government designate eligibility to harvest subsistence resources based on customary and traditional uses and availability of alternative resources. In addition, the federal government considers residence when designating subsistence eligibility. Since 1992, in order to reduce resource pressure, the state government has designated several "non-subsistence areas" where subsistence fishing and hunting is not allowed. These areas include the Fairbanks area, the Anchorage-Mat-Su-Kenai area, Juneau and Ketchikan.[146] The federal government limits access to certain subsistence resources. Halibut, for example, may be harvested for subsistence only by residents of communities with customary and traditional uses of halibut who hold a Subsistence Halibut Registration Certificate (SHARC) issued by NMFS.[147] The state government issues permits for the subsistence harvest of salmon.[148]

The majority of Alaskan communities participate in subsistence harvesting to some degree; however, limited documentation of subsistence harvests is available. Based on subsistence harvest surveys conducted by the ADF&G Division of Subsistence in communities throughout Alaska, in 2010, urban communities were estimated to have an average per capita subsistence harvest of 23 pounds per person per year, while rural communities were estimated to have an average per capita harvest of 316 pounds. In rural communities, 75%-98% of households were estimated to harvest fish and 48%-70% were estimated to harvest wildlife in 2010. It is important to note that a greater percentage of households were estimated to *use* subsistence resources in these communities (92%-100% using fish and 29%-92% using wildlife resources) than were estimated to participate directly in harvest, highlighting the importance of subsistence food sharing between households.[149] Subsistence sharing networks have been shown to exist both within and between communities.[150,151]

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[143] McGee, Jack B. (2010). "Subsistence Hunting and Fishing in Alaska: Does ANILCA's Rural Subsistence Priority Really Conflict with the Alaska Constitution?" *Alaska Law Review*, 27:2 (221-255).
[144] See footnote 140.
[145] U.S. Fish and Wildlife Service. (2012). *Federal Subsistence Management Program: Federal Subsistence Board*. Retrieved November 21, 2012 from http://alaska.fws.gov/asm/board.cfml.
[146] Alaska Dept. of Fish and Game. (2012). *Subsistence in Alaska: Nonsubsistence Use Areas*. Retrieved November 21, 2012 from http://www.adfg.alaska.gov/index.cfm?adfg=subsistence.nonsubsistence.
[147] NOAA Fisheries Service. (2012). *Subsistence Halibut Registration Certificate (SHARC) Frequently Asked Questions*. Retrieved November 21, 2012 from http://alaskafisheries.noaa.gov/ram/subsistence/halibutFAQ.pdf.
[148] Alaska Dept. of Fish and Game, Division of Subsistence. (2009). *Alaska Subsistence Salmon Fisheries 2007 Annual Report.* Technical Paper No. 346. Retrieved November 21, 2012 from http://www.subsistence.adfg.state.ak.us/techpap/TP346.pdf.
[149] Alaska Dept. of Fish and Game, Division of Subsistence. (2010). *Subsistence in Alaska: A Year 2010 Update*. Retrieved November 21, 2012 from http://www.adfg.alaska.gov/static/home/library/pdfs/subsistence/subsistence_overview2010.pdf.
[150] Magdanz, J.S., Braem, N.S., Robbins, B.C., and Koster, D.S. (2010). *Subsistence Harvests in Northwest Alaska, Kivalina and Noatak, 2007.* Alaska Dept. of Fish and Game Technical Paper No. 354. Retrieved September 25, 2012 from: http://www.subsistence.adfg.state.ak.us/techpap/TP354.pdf.

The ADF&G subsistence surveys utilize several measures of participation in subsistence fishing, and we have reported on these measures in the community profiles. They include: the percentage of households participating in subsistence for various marine resources, the per capita yearly harvest of marine and terrestrial subsistence resources, and the total annual subsistence harvest of salmon and halibut. Based on these measures, there is tremendous variation in the amount and type of subsistence resources harvested in Alaska. This variation in volume of subsistence harvest can be clearly observed at the regional level. In 2010, the regions of Alaska with the highest per capita subsistence harvest were Western Alaska (490 pounds of useable weight harvested per person per year), the Arctic (436 pounds per person), and the Rural Interior (370 pounds per person).[152]

Salmon is by far the widest relied upon subsistence resource in the state. In 2008 (the last year data was available), 220 communities harvested salmon for subsistence use, compared to 234 in 2000. The top ten salmon harvesting communities are widely spread across the state, ranging from Nome to Bethel to Kodiak and Anchorage (Table 23). By comparison, in 2009 (the last year data was available), 78 communities harvested halibut for subsistence use, compared to 80 in 2003 when the program started. The main halibut harvesting communities are located in Southcentral and Southeast Alaska from Kodiak towards the north to Hydaburg in the south. However, in recent years, residents of Unalaska on the Aleutian Islands chain have also recorded fishing for halibut for subsistence (Table 25). Tables 22 and 24 show the overall harvests of salmon, marine invertebrates, other fish (not including salmon and halibut), and halibut in the state.

Marine mammal harvests are also extremely important to many communities in Alaska. However, limited information is available about annual harvests by community. The information that was retrieved for use in these community profiles was obtained from ADF&G on seal and sea lion harvests, from the U.S. Fish and Wildlife Service for sea otter, walrus and polar bear harvests, and from the Alaska Beluga Whale Commission for beluga whale harvests. Tables 26 to 33 present overall harvests in the state and the top ten communities reporting harvests for each species. It is known that some communities in the northern areas of Alaska also hunt for whales for subsistence purposes; however, data on harvests by community was not available.

Overall, a total of 228 belugas were harvested in 2006 by residents of 26 communities, compared to 280 belugas harvested in 2000 by 25 communities. In general, harvests of belugas were consistent between 2000 and 2006, with the exception of a spike in 2001 to 415 whales harvested (Table 26). The top ten communities that reported harvesting belugas between 2000 and 2006 are exclusively located along the coast in Western and Northwestern Alaska (Table 27). At least 75% of all beluga harvests were made by the top ten harvesting communities.

In comparison, very few polar bears were harvested between 2000 and 2010. On average 51 polar bears were harvested each year with a maximum of 98 in 2002 and minimum of 14 in 2010. Since 2006, harvests of polar bears have been in decline, most likely due to its new status as threatened under the Endangered Species Act (Table 26). The number of communities harvesting polar bears is lower than any other subsistence resource, with only ten communities harvesting them in 2000 and five communities harvesting them in 2010. These low numbers

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[151] Brock, Mathew, Philippa Coiley-Kenner and the Sitka Tribe of Alaska. 2009. *A Compilation of Traditional Knowledge about the Fisheries of Southeast Alaska*. ADF&G Technical Paper No. 332. Retrieved March 30, 2012 from http://alaska.fws.gov/asm/pdf/fisheries/reports/04-652Final.pdf.
[152] See footnote 149.

suggest that polar bear harvests are linked to only those communities that are within the range of the polar bear above the Arctic Circle (Table 28).

Similar trends are seen for the subsistence harvest of walrus. In 2010, 16 communities harvested walrus, compared to 33 in 2000; however, between 75.5% (in 2000) and 85.6% (in 2010) of total harvests in the state were undertaken by residents of Savoonga and Gambell on St. Lawrence Island. The rest of the harvests are undertaken by relatively few communities located in Western and Northwestern Alaska (Table 29). On average, 1,417 walrus are taken each year for subsistence use; however, these numbers too have been in decline in recent years (Table 26).

Finally, harvests of sea otters, sea lions, harbor seals and spotted seals are undertaken annually by relatively few communities. On average, 782 sea otters, 150 sea lions, 1,574 harbor seals and 149 spotted seals are taken annually for subsistence use (Table 26). In general for these four species, the same communities participate in harvest activities from year to year. In 2010, 27 communities harvested sea otters, compared to 26 in 2000. The top ten communities harvesting sea otters are generally located in Southcentral and Southeast Alaska (with the exception of Shishmaref in 2000) and have harvested up to 98.3% of all sea otters taken (Table 30). In 2008, 16 communities harvested sea lions, compared to 18 in 2000. The top ten communities harvesting sea lions are generally located the Aleutian Islands and on the Alaska Peninsula and generally account for 90% of all harvests (Table 31). In 2008, 48 communities harvested harbor seals, compared to 56 in 2000. Harbor seal harvest is generally more evenly dispersed among communities, with only 56-60% of total harbor seal harvests taken by the top ten communities. The communities harvesting the greatest number of harbor seals are spread out between Southcentral and Southeast Alaska (Table 32). Finally, six Alaskan communities reported harvests of spotted seals to ADF&G between 2000 and 2008. All of these communities are located in Western Alaska near the Kuskokwim River delta (Table 33).

Table 22. Total Yearly Harvest of Salmon, Marine Invertebrates and Other Fish (Not Including Salmon and Halibut) by Alaskan Communities.

Year	Subsistence Salmon Permits Issued[1]	Salmon Permits Returned[1]	Chinook Salmon Harvested[1]	Chum Salmon Harvested[1]	Coho Salmon Harvested[1]	Pink Salmon Harvested[1]	Sockeye Salmon Harvested[1]	Lbs of Marine Inverts[2]	Lbs of Non-Salmon fish[2]
2000	29,135	24,152	135,830	252,906	106,880	55,550	475,261	34,445	15,386
2001	28,385	23,390	151,369	241,066	88,610	45,148	412,517	n/a	n/a
2002	23,985	20,574	132,684	224,471	83,476	83,964	326,029	n/a	172,808
2003	25,076	20,947	146,134	238,979	96,973	67,539	351,646	42,677	83,624
2004	27,067	20,942	176,414	241,025	103,921	92,317	453,647	609	462,956
2005	25,060	18,513	155,657	257,978	100,101	77,032	461,809	258	373,026
2006	23,923	16,652	142,100	291,209	88,007	70,348	426,654	1,659	317,215
2007	23,791	15,934	157,508	273,628	75,989	33,162	433,919	3,450	223,708
2008	26,074	18,766	173,354	264,627	112,716	83,472	404,840	n/a	n/a
2009	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
2010	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Note: n/a indicates that no data were reported for that year.

[1] Fall, J.A., C. Brown, N. Braem, J.J. Simon, W.E. Simeone, D.L. Holen, L. Naves, L. Hutchinson-Scarborough, T. Lemons, and T.M. Krieg. (2011, revised). *Alaska subsistence salmon fisheries 2008 annual report*. Alaska Department of Fish and Game Division of Subsistence, Technical Paper No. 359, Anchorage. Data compiled by Alaska Fisheries Information Network for Alaska Fisheries Science Center, Seattle.

[2] Alaska Department of Fish and Game. (2011). *Community Subsistence Information System (CSIS).* ADF&G Division of Subsistence. Data compiled by Alaska Fisheries Information Network for Alaska Fisheries Science Center, Seattle. http://www.adfg.alaska.gov/sb/CSIS/ (Accessed February 2011).

Table 23. Top Ten Communities Harvesting Salmon for Subsistence by Numbers of Fish Harvested.

	Year 2000		Year 2008	
Rank	**Community**	**# of Salmon**	**Community**	**# of Salmon**
1	Bethel	59,461	Bethel	88,757
2	Anchorage	58,064	Fairbanks	42,113
3	Fairbanks	41,153	Anchorage	39,595
4	Kotzebue	37,737	Kwethluk	26,777
5	Dillingham	26,823	Nome	26,239
6	Ketchikan	25,664	Tanana	25,927
7	Sitka	25,330	Dillingham	25,907
8	Kodiak	23,619	Akiachak	21,984
9	Unalakleet	21,982	Unalakleet	20,464
10	Tanana	21,476	Kodiak	19,996
Top Ten Communities: Number of Salmon Harvested		**341,309**		**337,759**
Top Ten Communities: Percentage of Number of Salmon Harvested in Alaska		**33.3%**		**32.5%**

Source: Fall, J.A., C. Brown, N. Braem, J.J. Simon, W.E. Simeone, D.L. Holen, L. Naves, L. Hutchinson-Scarborough, T. Lemons, and T.M. Krieg. (2011, revised). *Alaska subsistence salmon fisheries 2008 annual report*. Alaska Department of Fish and Game Division of Subsistence, Technical Paper No. 359, Anchorage. Data compiled by Alaska Fisheries Information Network for Alaska Fisheries Science Center, Seattle.

Table 24. Subsistence Halibut Fishing Participation by Alaskan Communities: 2003-2010.

Year	SHARC Issued	SHARC Cards Fished	SHARC Halibut Lbs Harvested
2003	11,464	4,905	1,039,959
2004	13,572	5,941	1,581,787
2005	14,076	5,775	1,175,795
2006	14,029	5,896	1,121,175
2007	14,794	5,916	1,029,931
2008	11,455	5,272	880,954
2009	11,600	5,252	851,878
2010	n/a	n/a	n/a

Note: n/a indicates that no data were reported for that year.
Source: Fall, J.A. and D. Koster. (2011). *Subsistence harvests of Pacific halibut in Alaska, 2009*. Alaska Department of Fish and Game Division of Subsistence, Technical Paper No. 357, Anchorage. Data compiled by Alaska Fisheries Information Network for Alaska Fisheries Science Center, Seattle.

Table 25. Top Ten Communities Harvesting Halibut for Subsistence by Weight in 2003 and 2010.

Rank	Year 2003 Community	Year 2003 Pounds of Halibut	Year 2009 Community	Year 2009 Pounds of Halibut
1	Sitka	174,880	Kodiak	182,340
2	Kodiak	157,746	Sitka	97,424
3	Hoonah	61,096	Craig	48,930
4	Petersburg	55,718	Petersburg	46,766
5	Craig	45,658	Wrangell	46,668
6	Ketchikan	38,221	Ketchikan	37,170
7	Wrangell	33,006	Haines	29,635
8	Haines	31,765	Unalaska/Dutch Harbor	29,306
9	Klawock	30,831	Cordova	23,364
10	Metlakatla	26,185	Hydaburg	21,853
Top Ten Communities: Pounds of Halibut Harvested		**655,106**		**563,456**
Top Ten Communities: Percentage of Total Pounds of Halibut Harvested in Alaska		**66.1%**		**63.0%**

Source: Fall, J.A. and D. Koster. (2011). *Subsistence harvests of Pacific halibut in Alaska, 2009*. Alaska Department of Fish and Game Division of Subsistence, Technical Paper No. 357, Anchorage. Data compiled by Alaska Fisheries Information Network for Alaska Fisheries Science Center, Seattle.

Table 26. Subsistence Harvests of Marine Mammal Resources by Alaskan Communities: 2000-2010.

Year	# of Beluga Whales[1]	# of Polar Bears[2]	# of Sea Otters[2]	# of Walrus[2]	# of Sea Lions [3]	# of Harbor Seals [3]	# of Spotted Seals [3]
2000	280	42	834	2,059	147	1,975	217
2001	415	71	653	1,324	156	1,797	106
2002	366	98	667	1,710	144	1,585	185
2003	250	58	778	1,725	165	1,812	52
2004	234	37	816	1,215	150	1,581	124
2005	335	59	918	903	172	1,470	171
2006	228	73	716	982	137	1,423	140
2007	n/a	54	708	1,659	166	1,267	137
2008	n/a	29	664	1,105	116	1,260	213
2009	n/a	24	878	1,631	n/a	n/a	n/a
2010	n/a	14	977	1,271	n/a	n/a	n/a

Note: n/a indicates that no data were reported for that year.

[1] Frost, Kathy J., and Suydam, Robert S. (2010). *Subsistence harvest of beluga or white whales (*Delphinapterusleucas*) in northern and western Alaska, 1987–2006*. Journal of Cetacean Research and Management 11(3): 293–299. Data compiled by Alaska Fisheries Information Network for Alaska Fisheries Science Center, Seattle.

[2] U.S. Fish and Wildlife Service. (2011). *Marking, Tagging and Reporting Program data bases for northern sea otter, Pacific Walrus and polar bear*. Office of Marine Mammals Management. Anchorage, Alaska. Data compiled by Alaska Fisheries Information Network for Alaska Fisheries Science Center, Seattle.

[3] Wolfe, R.J., Fall, J.A. and M. Riedel. (2009). *The subsistence harvest of harbor seals and sea lions by Alaska Natives in 2008*. Alaska Native Harbor Seal Commission and Alaska Department of Fish and Game Division of Subsistence, Technical Paper No. 347, Anchorage.

Table 27. Top Ten Communities Harvesting Beluga for Subsistence by Number Harvested in 2000 and 2006.

Rank	Year 2000 Community	Year 2000 Number of Beluga	Year 2006 Community	Year 2006 Number of Beluga
1	Kivalina	44	Emmonak	30
2	Hooper Bay	39	Point Lay	29
3	Emmonak	30	Alakanuk	15
4	Elim	30	Shaktoolik	14
5	Unalakleet	29	Kotlik	12
6	Point Hope	16	Elim	11
7	Stebbins	15	Unalakleet	10
8	Scammon Bay	12	Stebbins	9
9	Kotlik	11	Toksook Bay	8
10	Alakanuk	9	Scammon Bay	7
Top Ten Communities: Number of Beluga Harvested		**235**		**171**
Top Ten Communities: Percentage of Total Number of Beluga Harvested in Alaska		**83.9%**		**75.0%**

Source: Frost, Kathy J., and Suydam, Robert S. (2010). Subsistence harvest of beluga or white whales (*Delphinapterusleucas*) in northern and western Alaska, 1987–2006. Journal of Cetacean Research and Management 11(3): 293–299. Data compiled by Alaska Fisheries Information Network for Alaska Fisheries Science Center, Seattle.

Table 28. Top Ten Communities Harvesting Polar Bears for Subsistence by Number Harvested in 2000 and 2010.

Rank	Year 2000 Community	Year 2000 Number of Polar Bears	Year 2010 Community	Year 2010 Number of Polar Bears
1	Barrow	12	Barrow	6
2	Point Hope	6	Savoonga	4
3	Diomede	5	Point Hope	2
4	Savoonga	4	Gambell	1
5	Gambell	4	Wales	1
6	Nuiqsut	4		
7	Wainwright	3		
8	Shishmaref	2		
9	Point Lay	1		
10	Wales	1		
Top Ten Communities: Number of Polar Bears Harvested		**42**		**15**
Top Ten Communities: Percentage of Total Number of Polar Bears Harvested in Alaska		**100%**		**100%**

Source: U.S. Fish and Wildlife Service. (2011). *Marking, Tagging and Reporting Program data bases for northern sea otter, Pacific Walrus and polar bear*. Office of Marine Mammals Management. Anchorage, Alaska. Data compiled by Alaska Fisheries Information Network for Alaska Fisheries Science Center, Seattle.

Table 29. Top Ten Communities Harvesting Walrus for Subsistence by Number Harvested in 2000 and 2010.

Rank	Year 2000 Community	Year 2000 Number of Walrus	Year 2010 Community	Year 2010 Number of Walrus
1	Savoonga	849	Savoonga	617
2	Gambell	705	Gambell	509
3	Diomede	164	Brevig Mission	45
4	King Island	106	Diomede	30
5	Nome	56	Shishmaref	21
6	Wainwright	39	Wales	19
7	Hooper Bay	29	Teller	10
8	Barrow	17	Wainwright	5
9	Wales	14	Point Lay	4
10	Toksook Bay	10	Twin Hills	3
Top Ten Communities: Number of Walrus Harvested		**1,989**		**1,263**
Top Ten Communities: Percentage of Total Number of Walrus Harvested in Alaska		**96.6%**		**99.4%**

Source: U.S. Fish and Wildlife Service. (2011). *Marking, Tagging and Reporting Program data bases for northern sea otter, Pacific Walrus and polar bear*. Office of Marine Mammals Management. Anchorage, Alaska. Data compiled by Alaska Fisheries Information Network for Alaska Fisheries Science Center, Seattle.

Table 30. Top Ten Communities Harvesting Sea Otters for Subsistence by Number Harvested in 2000 and 2010.

Rank	Year 2000 Community	Year 2000 Number of Sea Otters	Year 2010 Community	Year 2010 Number of Sea Otters
1	Cordova	213	Sitka	205
2	Sitka	155	Cordova	134
3	Hydaburg	95	Klawock	113
4	Valdez	69	Valdez	101
5	Shishmaref	42	Hoonah	53
6	Kodiak	41	Yakutat	52
7	Klawock	38	Anchorage	47
8	Craig	34	Ketchikan	41
9	Anchorage	25	Craig	39
10	Yakutat	24	Kodiak	35
Top Ten Communities: Number of Sea Otters Harvested		**736**		**820**
Top Ten Communities: Percentage of Total Number of Sea Otters Harvested in Alaska		**75.3%**		**98.3%**

Source: U.S. Fish and Wildlife Service. (2011). *Marking, Tagging and Reporting Program data bases for northern sea otter, Pacific Walrus and polar bear*. Office of Marine Mammals Management. Anchorage, Alaska. Data compiled by Alaska Fisheries Information Network for Alaska Fisheries Science Center, Seattle.

Table 31. Top Ten Communities Harvesting Sea Lions for Subsistence by Number Harvested in 2000 and 2008.

Rank	Year 2000 Community	Year 2000 Estimated # of Sea Lions	Year 2008 Community	Year 2008 Estimated # of Sea Lions
1	Unalaska	49.2	Atka	35.0
2	St. Paul	17.3	St. Paul	20.0
3	Atka	16.8	Tatitlek	16.5
4	Old Harbor	12.9	St. George	9.3
5	St. George	11.8	Old Harbor	7.0
6	Nanwalek	6.5	Akutan	4.2
7	Sand Point	5.0	Adak	4.0
8	Perryville	4.5	Sand Point	3.3
9	King Cove	4.3	Port Lions	3.0
10	Akutan	4.1	Port Graham	2.8
Top Ten Communities: Estimated Number of Sea Lions Harvested		**132.4**		**105.1**
Top Ten Communities: Percentage of Total Estimated Number of Sea Lions Harvested in Alaska		**90.3%**		**90.2%**

Source: Wolfe, R.J., Fall, J.A. and M. Riedel. (2009). *The subsistence harvest of harbor seals and sea lions by Alaska Natives in 2008*. Alaska Native Harbor Seal Commission and Alaska Department of Fish and Game Division of Subsistence, Technical Paper No. 347, Anchorage.

Table 32. Top Ten Communities Harvesting Harbor Seals for Subsistence by Number Harvested in 2000 and 2008.

Rank	Year 2000 Community	Year 2000 Estimated # of Harbor Seals	Year 2008 Community	Year 2008 Estimated # of Harbor Seals
1	Sitka	276.8	Sitka	140.6
2	Yakutat	193.3	Tatitlek	125.4
3	Hoonah	147.9	Yakutat	115.2
4	Ketchikan	111.7	Ketchikan	66.7
5	Kake	101.7	Kodiak	62.6
6	Cordova	87.8	Perryville	47.1
7	Klawock	67.1	Togiak	46.0
8	Angoon	64.3	Angoon	41.0
9	Juneau	59.9	Point Heiden	36.1
10	Old Harbor	59.1	Old Harbor	35.2
Top Ten Communities: Estimated Number of Harbor Seals Harvested		**1,169.6**		**715.9**
Top Ten Communities: Percentage of Total Estimated Number of Harbor Seals Harvested in Alaska		**59.2%**		**56.8%**

Source: Wolfe, R.J., Fall, J.A. and M. Riedel. (2009). *The subsistence harvest of harbor seals and sea lions by Alaska Natives in 2008*. Alaska Native Harbor Seal Commission and Alaska Department of Fish and Game Division of Subsistence, Technical Paper No. 347, Anchorage.

Table 33. Top Ten Communities Harvesting Spotted Seals for Subsistence by Number Harvested in 2000 and 2008.

Rank	Year 2000 Community	Year 2000 Estimated # of Spotted Seals	Year 2007 Community	Year 2007 Estimated # of Spotted Seals
1	Togiak	147.0	Togiak	167.7
2	Manokotak	23.0	Manokotak	16.6
3	Clark's Point	22.4	Clark's Point	14.7
4	Dillingham	11.9	Aleknagik	6.7
5	Twin Hills	6.6	Twin Hills	6.6
6	Aleknagik	6.1	Dillingham	1.1
7				
8				
9				
10				
Top Ten Communities: Estimated Number of Spotted Seals Harvested		**217**		**213.3**
Top Ten Communities: Percentage of Total Estimated Number of Spotted Seals Harvested in Alaska		**100%**		**100%**

Source: Wolfe, R.J., Fall, J.A. and M. Riedel. (2009). *The subsistence harvest of harbor seals and sea lions by Alaska Natives in 2008*. Alaska Native Harbor Seal Commission and Alaska Department of Fish and Game Division of Subsistence, Technical Paper No. 347, Anchorage.

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