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U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
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Involving Fishing Communities in Data Collection: A Summary and Description of the Alaska Community Survey, 2013

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ABSTRACT

A review of existing fisheries data collected by the State of Alaska and the National Marine Fisheries Service (NMFS) shows that many Alaskan communities are highly engaged in commercial, recreational, and subsistence fisheries. These resources are frequently affected by fisheries management decisions and anthropogenic effects on resource distribution and abundance that can either threaten or enhance community well-being. However, much of the existing economic data about Alaskan fisheries is collected and organized around specific units of analysis such as counties (boroughs), fishing firms, vessels, sectors, and gear groups that are often difficult to aggregate or disaggregate for analysis at the individual community or regional level. In addition, some relevant community-level economic data have not been collected historically. As a result, the North Pacific Fishery Management Council (NPFMC), the Alaska Fisheries Science Center (AFSC), and community stakeholder organizations identified the ongoing collection of community level socio-economic information, specifically related to commercial fisheries, as a priority.

To address this need, the AFSC Economic and Social Sciences Research Program (ESSRP) began implementing the Alaska Community Survey in 2011 – a voluntary data collection program to improve the socio-economic data available for consideration in North Pacific fisheries management using the community as the unit of reporting and analysis. ESSRP social scientists partnered with community-based organizations and individuals from fishing communities around Alaska to determine the detailed community level information to be collected and made available for the socio-economic impact assessment of communities involved in North Pacific fisheries (initially focused on Alaska communities for feasibility reasons).

An additional goal was to ensure that community level socio-economic and demographic data are collected at comparable levels of spatial and thematic resolution to commercial fisheries data. Such data will facilitate analysis of the impacts of proposed changes in commercial fisheries management, both within and across North Pacific communities involved and engaged in various types of fishing. These data will also help ESSRP scientists and NPFMC staff to better understand Alaskan communities' social and economic ties to the fishing industry and facilitate the analysis of potential impacts of catch share programs and coastal and marine spatial planning efforts.

This survey was designed to gather information about Alaskan fishing communities and to help determine each community's capacity to support fishing activities. The types of data collected through the survey address recommendations from community representatives that participated in our community meetings. This report gives an overview of the survey, results from the third year of implementation in 2014 (collecting data for the 2013 calendar year), and addresses the potential for this and other methods of engaging communities to better inform fisheries management in isolated areas of Alaska.

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INTRODUCTION

The National Marine Fisheries Service (NMFS) is the agency responsible for the stewardship of the Nation's living marine resources. In addition to managing, protecting, and conserving our marine resources, the Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA) mandates that fisheries managers consider the importance of fishery resources to fishing communities through the use of socio-economic data (§301, National Standard 8). Much of the existing economic data about Alaska fisheries are collected and organized around units of analysis such as counties (boroughs), fishing firms, vessels, sectors, and gear groups. It is often difficult to aggregate or disaggregate these data for analysis at the individual community or regional level and some relevant community-level economic data are entirely absent. As a result, the North Pacific Fishery Management Council (NPFMC), the Alaska Fisheries Science Center (AFSC), and community stakeholder organizations identified the ongoing collection of community-level socio-economic information, specifically related to commercial fisheries, as a priority.

In partnership with community organizations and individuals from fishing communities around Alaska, the AFSC's Economic and Social Sciences Research Program (ESSRP) has been collecting detailed community-level socio-economic and demographic data at the levels of spatial and thematic resolution comparable to that of commercial fisheries data collection. To address this need specifically, ESSRP social scientists developed and implemented the Alaska Community Survey. This voluntary survey is designed to improve the availability of socio-economic data for consideration in the North Pacific fisheries management process as required under the MSFCMA. These data can aid researchers and policy makers to better understand Alaskan communities' social and economic ties to the fishing industry. Such data also facilitates analyses including evaluating past impacts or considering possible future repercussions of changes in commercial fisheries management (e.g., rationalization), both within and across North Pacific communities involved in and engaged in various types of fishing.

The Alaska Community Survey was originally implemented as a data collection tool to aid the ESSRP in the revision process of the document "*Community Profiles for North Pacific Fisheries – Alaska*" (Sepez et al. 2005), which was recently completed (Himes-Cornell et al. 2013). In community meetings held by AFSC social scientists in August and September 2010, community input was sought on how the community profiles could better represent communities and their ties to North Pacific fisheries (Himes-Cornell et al. 2011). Much of the input received at the meetings included suggestions for new types of socio-economic data to better represent the interests of communities in the fisheries management process and in socio-economic impact analyses. A large amount of the data requested by communities for inclusion was not obtainable from other sources and was therefore requested directly from communities through the implementation of the Alaska Community Survey.

The survey was implemented as a source of data for practical use for NOAA social scientists and for the NPFMC for descriptive and analytical purposes including socio-economic impact analyses of potential regulations. In addition to direct fisheries management utility, this research and the resultant data can be utilized in future ecosystem management efforts. These efforts include the development of ecosystem models that incorporate various socio-economic indicators and other social information. The survey results are also available for public use to support community development, other research concepts, and future research design. In

addition, the data presented here may have utility for Alaskan fishing communities in understanding and communicating their own engagement in fishing and socio-economic structure compared to other communities around the state. Aggregate data from the survey can be used to describe demographics of Alaskan fishing-dependent communities, fishing-related businesses, and the importance of fishing to various regions of Alaska. The information may be used to give communities a voice in the decision-making process.

The results of the third year of implementation (2014) of the survey are presented here, with data reported for the 2013 calendar year. The survey was implemented for the first time in 2011 with data reported for the 2010 calendar year, and implemented for a second time in 2012 with data reported for the 2011 calendar. Results of the first and second years of data collection are presented in Himes-Cornell and Kent (2014a) and Himes-Cornell and Kent (2014b), respectively. Future years of data collection will be presented in separate reports. The remainder of the report is structured as follows: the methods are described, results from the survey and findings are summarized, and finally, general conclusions and next steps of the research are presented.

METHODS

SURVEY DEVELOPMENT

The survey was originally implemented in 2011 and for a second time in 2012. For a complete description of the survey development, please refer to Himes-Cornell et al. 2011 and Himes-Cornell and Kent 2014a and 2014b. This report covers the third year of implementation in 2014. The survey instrument was developed through pretesting and assistance from experts in survey design and representatives of communities that were part of the overall respondent population. Pretesting activities were spaced out to allow sufficient time to revise the survey materials between each activity. The survey instrument also benefited from early input from several cognitive interviews with representatives from Alaska fishing communities.

In the third implementation of the survey in 2014, four additional questions were added to the survey in order to capture information about how respondent communities are connected to each other and to better understand the social networks that tie communities together in Alaska. These include questions addressing social networks to determine the existence of hub communities in Alaska that remote communities regularly interact with. These questions are reviewed along with the other questions in the protocol in the following section.

DATA COLLECTED

The following is a discussion of the data collected with the survey instrument and how individual questions in the survey instrument are expected to be used. The full survey instrument is included as Appendix E to this report.

- Q1 collects information about how many people live in the community as year-round residents, as seasonal workers or transients, and as year-round residents that work in a shore-side processing plant. The U.S. Census does not differentiate between residents that live in a place year-round or that are seasonal residents. The data collected in this question can facilitate an understanding of population fluctuation and the types of residents in terms of reliance on public services, local social services such as food banks and publicly subsidized housing and participation in civic activities.

- Q2 provides information on which months per year seasonal workers live in the community. The ebb and flow of seasonal workers can have a strong impact on the population of a given community. The information collected from this question can assist in understanding the link between the peaks and troughs in fisheries participation and temporal impacts of fisheries management decisions on the social structure of a given community.

- Q3 requests information on the length of the fishing season(s) in which residents of the community participate. The information gathered from this question may be useful in facilitating an understanding of the temporal economic, cultural, and social effects fishing has on a given community.

- Q4 asks for the month(s) that the community's population reaches its annual peak. Responses to this question will be used to map out the population over time and determine what months of the year will have the largest burden on civic services.

- Q5 is used to determine the degree to which the community's annual peak in population is driven by employment in the fishing sector. Reponses to this question may be used to add focus to the responses from Q2 and Q4 to determine how much the population fluctuations of an individual community are specifically related to fishing.

- Q6-Q9 provides information about how communities engage with each other (Q6), which communities are traveled to on a regular basis (Q7), which communities are depended upon for goods and services (Q8), and communities where children under the age of 18 attend school (Q9). The answers to these questions will help determine which communities are considered hubs for various socio-cultural interaction, hubs for goods and services, and hubs for kindergarten to grade 12 education. The information collection will also inform of the socio-cultural and socio-economic networks that exist among Alaskan communities and help determine which Alaskan communities serve as hubs for remote communities. It will also provide insight into the relationship between fisheries dependent communities and hub communities.

- Q10 collects information about the infrastructure available in the community and whether it was completed in the last 10 years, is currently being constructed, or is planned for completion in the next 10 years. The question also asks for the year of completion. Representatives from Alaskan fishing communities have indicated that the availability of local infrastructure is imperative for the sustained existence of a given community. The information collected in this question may be used as an indicator of vibrancy and resiliency of a given community.

- Q11 and Q12 provide information on the maximum length of vessels that can moor in the community (Q11) and the availability of public dock space for moorage of permanent and transient vessels (Q12). Responses may be used to assess the capacity of each community to host fishing vessels and generate revenue from public moorage facilities. If the availability of moorage space changes over time, this could have an effect on local participation in fisheries.

- Q13 requests information about the annual revenue that public moorage facilities earned in the previous calendar year. Responses will be used as a quantitative indicator of vessel transit activity and revenue generation from public moorage facilities for each community. This source of public revenue can directly feed into the community's municipal finances and be earmarked as a direct economic benefit of fishing to the community. As a result, changes in fisheries management could have an effect on municipal finances if moorage revenue goes down from reduced vessel activity utilizing public moorage facilities. This type of information could be used to assist in the analysis of impacts of proposed fishing regulations or allocations that are based on vessel size.

- Q14 is used to determine the types of regulated vessels that the community's port is capable of handling. Responses will be used to describe the non-fisheries fleet activity in a community. This type of information can be used to measure the resiliency of communities in the face of changes in fisheries management and with regards to the diversity of the economic base that supports the port services. This is important in looking at the amount of moorage space available as regulated vessels could account for a high level of dock space available when fishing is not heavily present in a community.

- Q15 collects information on the size classes of commercial fishing boats that use the community's port during the fishing season as their base of operations. Responses to this question can be used to assist in describing the fishing fleet's contribution to the local economy. The home port listed on the vessel registration often does not reflect where the vessel is based during the fishing season, and thus, to which local economy the vessel is contributing to during the fishing season. Since there are no known records of which fishing vessels use which communities as their base of operations and because it would be too onerous to ask harbormasters or community officials to list out which vessels use their community in a given year, the data from the questions in this survey with regards to a community's capacity to host commercial fishing vessels could be used to form assumptions about the effect commercial fishing has on a community's economy. In addition, the capacity of a community to host certain sizes of vessels can be used as an indirect multiplier of potential effects of fisheries management actions based on vessel size class.

- Q16 and Q16a provide information about the trends in the number of different types of vessels that are based in the community compared to 5 years ago. The responses to this question may be used as one method of tracking the trends of the local vessel types over time.

- Q17 and Q18 ask for the type of recreational or sport fishing that occurs in the community (Q17) and the saltwater species that are targeted (Q18). The information collected from this question may be used to describe the presence of recreational fishing in each community so that a community's engagement in recreational fishing can be determined.

- Q19 is used to determine the types of fishing gear used by commercial fishing vessels based out of the community. This question will aid in describing the effects of fishing regulations that are based on fishing gear type per community and describing the commercial fishing fleet that uses each community during the fishing season.

- Q20 is used to determine the three most important subsistence marine or aquatic resources upon which the residents of the community rely. The Alaska Department of Fish and Game (ADF&G) does not undertake subsistence harvest surveys on an annual basis. The results of this question are complementary to the ADF&G surveys and may be used to gain an understanding of what aquatic resources a community might rely on for subsistence purposes. In general, communities have expressed concern that not enough data are collected on the subsistence activities of Alaskan communities. The purpose of this question is to document that subsistence harvesting is important to communities and will be used to show differences between the subsistence resources that communities rely on in different regions. The information gathered from this question will inform management of the species most important to a community's food security and culture, and help determine if any fishery policies may be impacting subsistence communities.

- Q21 collects information about the types of fishing support businesses located in the community. The information collected from this question will be used to provide insight into how each community contributes to fishing both locally and regionally. The hypothesis is that changes to services in a regionally important community hub would have a multiplier effect in that they will affect not only their own community but also all of the satellite communities that rely on the services in the hub to keep fishing operations active.

- Q22 provides the location(s) of the communities that local residents go to for fishing support businesses that are not located in the community. The answers to this question are useful in providing insight into which communities are considered hubs for fishing-related services in a given region and what fisheries service networks exist among Alaskan communities.

- Q23 asks for information about the public social services that are available in the community. This question can provide insight into which public social services are available both to residents and individuals temporarily based in the community.

- Q24 requests information about the natural resource-based industries upon which the community's economy relies. The results of this question can aid in understanding the diversity of natural resources that a given community might have to support itself in addition to fishing. These data can also be used to evaluate the resiliency of a community's economy and alternate sources of jobs for residents.

- Q25 requests information about how much total revenue a community receives from fisheries related taxes or fee programs and the sources of revenue. The responses could be used to determine local fishing related revenue streams that might be affected by fisheries management decisions. Community representatives have requested that fisheries managers take into account such municipal fee programs that are susceptible to changes in fishing activities and incorporate potential impacts to those revenue streams into socio-economic impact analyses for potential fisheries management changes. The results of this question could be used by fisheries managers to direct analyses of this type of impact.

- Q26 collects information about funding or grants that the community received from Community Development Quota entities and from fisheries-related taxes or fee programs in the previous calendar year. The results from this question could be added to other known community revenue streams to determine the total amount of revenue that a community receives related to fishing-related activity. These data can be used to understand the total benefit that a community receives from fishing and can assist in understanding how positive or negative changes to this revenue stream from fisheries management decisions might affect a community's ability to provide community services.

- Q27 asks for information about the community's public services that are at least partially funded by a local raw fish tax, the State Shared Fisheries Business Tax, the State Fisheries Resource Landing Tax, or marine fuel sales taxes. The responses will assist in understanding which community services are dependent on fisheries-related revenue, and thus which community services might be affected by changes in revenue caused by fisheries management decisions.

- Q28 requests information about additional local fishing-related fee programs charged to the fishing industry that specifically support public services and infrastructure. Similar to Q25 this question informs of other fishery related revenue contributing to the community and can inform fisheries managers of effects of policy changes on those revenues.

- Q29 is used to characterize how the community participates in the fisheries management process in Alaska. Since this data collection will occur on an annual basis, the results could be used to understand the trends in annual community participation. It is hypothesized that communities with more varied and professionalized participation are more likely to play a significant role in the fisheries management process. An individual conducting a socio-economic impact analysis should seek to understand the degree to which communities participate in the process so that their impact analysis can consider those communities that might be least likely to represent themselves. Participation in fisheries management was emphasized during community profile update meetings as an important dimension to understand.

- Q30-33 collect information about the current challenges for the portion of the local economy that is based on fishing (Q30), the effects of fisheries policies or management actions on the community (Q31), the past or current fisheries policy or management action that has affected the community the most (Q32), and the potential future fisheries policy or management actions that concern the community the most (Q33). The responses can be used to determine which fisheries management issues may affect communities in particular ways, which in turn can assist the assessments of cumulative effects of fisheries management actions in compliance with the National Environmental Policy Act (NEPA).

- Q34 provides information on the individuals in the community that contributed to filling out the survey. The responses to this question can be used to add context to the subjective questions included in the survey.

- Q35 asks for any additional information that the respondent would like to provide NOAA about how the community is engaged in or affected by fisheries. The responses to this question can be used to identify any additional issues that communities have with regards to their involvement in fishing that were not addressed in the survey but about which the public should be informed.

SURVEY FRAME

The methodology for identifying the survey frame followed that used in Himes-Cornell et al. (2013), which can be consulted for a full methodological explanation. Initially, 193 communities were selected due to their involvement in commercial, recreational and subsistence fishing in Alaska, as determined using a data envelopment analysis (DEA) that focused on scoring communities based on their overall dependence and reliance on fishing to support their well-being (Sepez et al. 2007) or were composed of the 136 communities that were profiled in the 2005 *Community Profiles for North Pacific Fisheries – Alaska* (Sepez et al. 2005). For community selection, 2009 fishing data for each community was used in the DEA which then assigned a score to each community based on multiple indicators of participation in various fisheries. As a non-parametric approach, DEA may more effectively capture fisheries participation across multiple indicators without giving a pre-determined weight or importance to each indicator. The communities selected through the DEA model demonstrated strong participation in any unique combination of commercial, recreational, and subsistence fisheries. A caveat to the community sampling methodology was discovered after the implementation of the survey began. It was found that the subsistence data that was utilized was not as reliable as the data used for commercial and recreational fishing because data collection efforts had been sharply reduced after 2008. It is therefore possible the sampling tool did not effectively capture communities whose fisheries participation is solely subsistence-based. In order to address this shortcoming, we revised the list of communities that received the survey to include an additional 15 communities that are solely dependent on subsistence harvesting and were not included in the original sampling frame for a total of 208 communities in this study.

SURVEY IMPLEMENTATION

Most of the communities in the study (n = 155) were sent a copy of the survey to the municipal office and another to the tribal office. Some communities were sent only one copy of the survey if there was not a known tribal or municipal office (n = 46). A few communities (n = 4) were sent three copies if they had two different contacts associated with the municipal office or had two different tribal offices in the same community (e.g., Juneau). Appendix C breaks down how many copies of the survey each community received and how many copies each community returned. Figure 1 shows the communities that completed the survey as well as the regional groupings communities were organized into for the analysis. Table 1 lists which communities were organized into each regional grouping. As defined in Himes-Cornell et al. (2013), the regional groupings were determined using census area designations and geographic approximations to create representative sets of communities that rely on specific stocks of natural resources.

The implementation techniques that were employed are consistent with methods that maximize response rates. Mail survey implementation followed a modified Dillman Tailored Design Method (Dillman et al. 2009), which included the following steps (excluding any steps after a respondent returned their completed survey):

1. An **advance letter** notifying respondents about the survey a few days prior to the questionnaire arriving.
2. An **initial mailing** sent 3 days after the advance letter. Each mailing contained a personalized cover letter, questionnaire, and a pre-addressed stamped return envelope.
3. A **postcard follow-up reminder** mailed 8 days following the initial mailing.
4. A **follow-up telephone reminder** 16 days after the advance letter to encourage response.
5. A **second full mailing** mailed 26 days after the advance letter was sent.
6. A **second follow-up telephone reminder** to further encourage response.

This flow deviated from the classic Dillman Tailored Design Method with the placement of the telephone contact prior to the second mailing of the survey instrument. This method was used because it was conjectured that the personal connection is important in community surveys, especially given the extremely small size of Alaskan communities (the median population size in 2010 was 358 (U.S. Census 2010) and it could elicit better participation than repeated mailings with no verbal contact. The survey was implemented between September and November 2014 by Pacific States Marine Fisheries Commission and AFSC social scientists. Table 2 outlines the timing of the implementation of the survey.

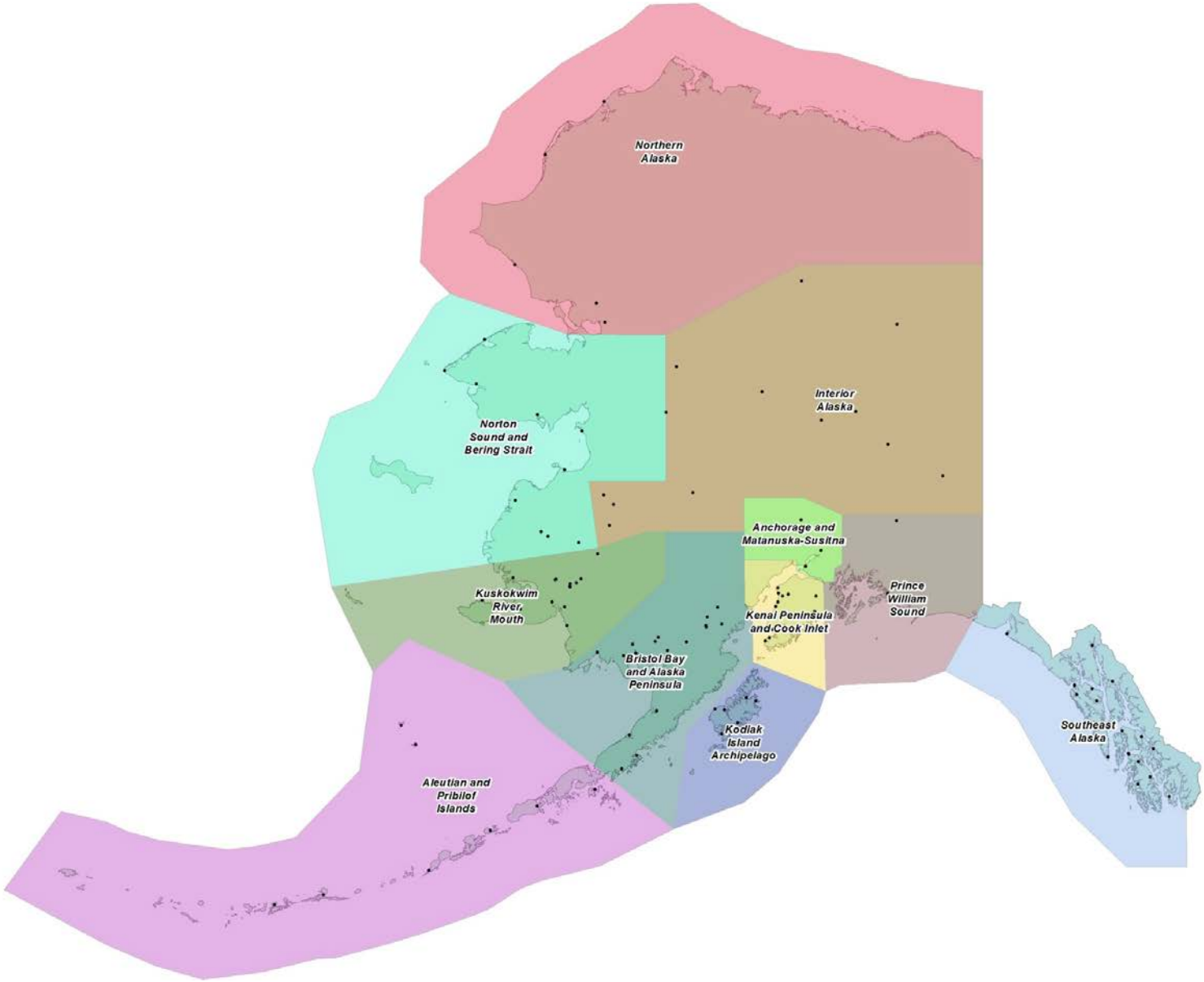


Figure 1. -- Respondent communities organized by regional grouping.

Table 1. -- Respondent communities in 2013 organized by regional grouping.

Aleutian and Pribilof Islands	Anchorage and Mat-Su	Bristol Bay and Alaska Peninsula	Interior	Kenai Peninsula and Cook Inlet	Kodiak Island
Adak	Anchorage	Aleknagik	Allakaket	Anchor Point	Akhiok
Akutan	Eagle River	Chignik (Bay)	Delta Junction	Homer	Karluk
Alitak Bay	Palmer	Chignik Lagoon	Fairbanks	Moose Pass	Kodiak
Atka	Talkeetna	Dillingham	Fort Yukon	Nanwalek	Larsen Bay
Cold Bay		Egegik	Galena	Nikolaevsk	Old Harbor
False Pass		Ekuk	Grayling	Ninilchik	Ouzinkie
Nelson Lagoon		Ekwok	Healy	Port Graham	Port Lions
Nikolski		Igiugig	Holy Cross	Seldovia	
Port Moller		Iliamna	Huslia	Seward	
Saint Paul		Koliganek	Manley Hot Springs		
Sand Point		Naknek	Nenana		
Unalaska		New Stuyahok	North Pole		
		Newhalen	Ruby		
		Nondalton	Shageluk		
		Pedro Bay	Stony River		
		Perryville	Tanana		
		Pilot Point	Venetie		
		Port Alsworth			
		Port Heiden			
		South Naknek			
		Togiak			
		Twin Hills			
		Ugashik			

Table 1. -- Cont.

Kuskokwim River Mouth	Northern Alaska	Norton Sound and Bering Strait	Prince William Sound	Southeast
Akiachak	Barrow	Alakanuk	Chenega	Craig
Akiak	Kiana	Brevig Mission	Chitina	Edna Bay
Bethel	Kivalina	Chevak	Copper Center	Elfin Cove
Chefornak	Noatak	Diomede	Cordova	Gustavus
Chuathbaluk	Point Lay	Gambell	Gakona	Haines
Eek	Selawik	Hooper Bay	Tazlina	Hydaburg
Kipnuk		Kaltag		Hyder
Kongiganak		Koyukuk		Juneau
Lower Kalskag		Marshall		Ketchikan
McGrath		Nome		Klawock
Mekoryuk		Nulato		Metlakatla
Napakiak		Nunam Iqua		Meyers Chuck
Newtok		Pitkas Point		Pelican
Nunapitchuk		Russian Mission		Petersburg
Quinhagak		Saint Mary's		Point Baker
Tuluksak		Saint Michael		Port Alexander
Tuntutuliak		Savoonga		Port Protection
Tununak		Scammon Bay		Sitka
Upper Kalskag		Shaktoolik		Tenakee Springs
		Shishmaref		Thorne Bay
		Stebbins		Whale Pass
		Unalakleet		Wrangell
		White Mountain		Yakutat

Table 2. -- Survey implementation timing.

Stage	Date
Advance Letter	September 22, 2014
Initial Mailing	September 25, 2014
Postcard Follow-up Reminder	October 7, 2014
Follow-up Telephone Reminder	October 14-27, 2014
Second Full Mailing	October 28, 2014
Second Follow-up Telephone Reminder	November 17-25, 2014

RESPONSE RATE

Of the 374 surveys mailed, 183 surveys were returned generating a 49.01% individual response rate (N=183). Duplicate surveys were returned for 38 communities (20.76% of the total survey returns), resulting in a total of 148 unique communities surveyed, representing 71.15% (N=208) of communities contacted. To avoid duplication in the data, only one response per question was analyzed for each community. Therefore, for communities that returned more than one survey, a protocol was developed to address duplication (see below in the section on post-hoc data management for details). One survey was returned due to bad address, representing 0.27% of all surveys mailed. Additionally, 12 recipients representing 12 communities refused to participate in the survey (3.18% of entities sent a survey). However, two copies of the survey were sent to most communities and 5 of the refusals came from communities where the other entity returned the copy of the survey. Figure 2 and Table 3 present the response rates by geographic region of the state. Community response rates are summarized in Appendix Table E1.

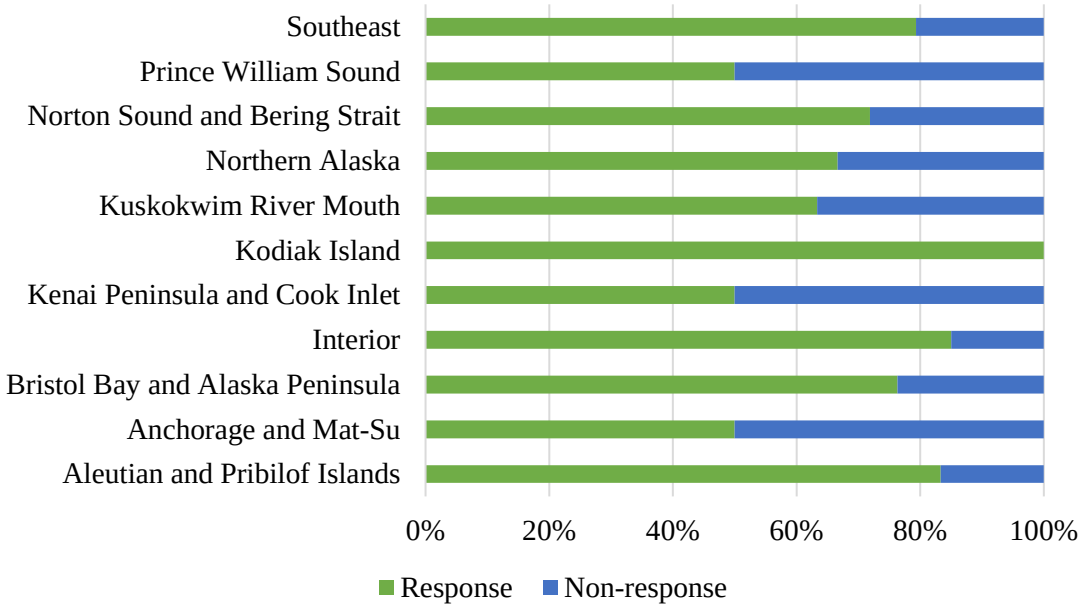


Figure 2. -- Survey response rates by region.

Table 3. -- Survey responses and non-responses by region.

Region	Response	Non-response	Response rate
Aleutian and Pribilof Islands	5	1	83.33%
Anchorage and Mat-Su	4	4	50.00%
Bristol Bay and Alaska Peninsula	29	9	76.32%
Interior	17	3	85.00%
Kenai Peninsula and Cook Inlet	9	9	50.00%
Kodiak Island	8	0	100.00%
Kuskokwim River Mouth	19	11	63.33%
Northern Alaska	6	3	66.67%
Norton Sound and Bering Strait	23	9	71.88%
Prince William Sound	5	5	50.00%
Southeast	23	6	79.31%
Total	**148**	**60**	

POST-HOC DATA MANAGEMENT

As referred to earlier, for communities that returned duplicate surveys, a protocol was developed to limit the number of responses per question per community to one entry. This was determined to be necessary given that communities are the unit of analysis, and leaving more than one survey response per community in the data would bias the results towards the communities that returned more than one survey. To inform the development of the duplicate survey procedure, a brief analysis was done on the 38 instances of duplicate surveys to determine

how survey responses differed between the duplicates. With this information, a set of rules was developed based on the most common issues in duplicate surveys that precluded basic merging of similar responses.

The most common duplicate response issues encountered were on multiple response questions and on Likert scale questions. For multiple response questions (i.e., check all that apply), responses were combined between the two surveys to report the widest spread possible. Responses to Likert scale questions were averaged between the surveys. All open-ended question responses were combined. Numerical short-answer response questions such as population estimates were averaged if answers were similar. If responses were significantly different, the response from the more complete survey was taken under the reasoning that that response may be more accurate due to a more comprehensive overall survey. For multiple survey responses for one community where this was not a clear choice, responses were evaluated in relation to the community profiles to determine which response was more plausible (Himes-Cornell et al. 2013). After the multiple surveys were combined so each community had a single response for each question, the response data was added back in the larger dataset for analysis.

DATA ANALYSIS

The data collected in this survey relies upon the assumption that community respondents as key informants are accurately representing their communities since they possess knowledge and expertise of the communities in which they reside (Hay 2010). Given the scale of the survey, in which information was collected from a broad range of communities, rather than an in depth investigation of a smaller sample, the results presented here are generally informative. Survey responses to each question were analyzed by community and sorted by their region. Response frequency distributions are presented for categorical response questions and descriptive statistics are presented for non-categorical response questions. Several questions asked in the survey were non-exclusive allowing respondents to select all that apply from a list of categories. Therefore, many tables summarizing responses will not sum to exactly 100% of the number of respondents. These tables should be interpreted as the proportion of respondents that selected the specific categories. For example, questions 14-15 among others.

Survey questions Q6-Q9 and Q22 asked respondents to name the top three to five communities, depending on the questions, that communities interelate with, travel to on a regualr basis, depend on for good and services, where children attend school, and provide fishery support businesses, respectively. For respondents who included more than three communities, all responses were analyzed. The responses were analyzed as social network data in UCINET 6 (Borgatti et al. 2002) and sociograms were created in Netdraw to visually represent how communities are connected to each other.

Social network analysis is being increasingly used to understand the relationship between entities, such as individuals and commuities, that depend on marine resources (Package-Ward and Himes-Cornell 2014, Prell et al. 2009, Vance-Borland and Holley 2011). Analysis of such networks provides resource managers with a better understanding of how types of connections affect each other, their importance in the overall network, and ultimately, how resource users might be affected by changes in management.

One component of social network analysis is centrality which measures an entitiy's status in a network through the number of direct links each entity (node) has with all other nodes in the network (Hanneman and Riddle 2005, Emoul and Warden-Johnson 2013). This measure is useful

for evaluating the the number of ties, or connections in a network (i.e., the structural importance of individual nodes in a network). For example, nodes that have more connections to other nodes in a network are at an advantage because they have many alternatives to meet their needs and aquire resources. Conversely, if there are limited connections or options to meet needs, they are at a disadvantage and the fewer more centralized nodes are in a more powerful position. Also, measures of degree centrality allows for easier comparison with other network studies.

We calculated degree centrality for each community given that our unit of analysis is community, rather than individual, and we are interested in measuring relations of communication and exchange in Alaska fishing communities. In the case of this survey, in-degree centrality measures the structural improtance of a community in a network; the number of times a particular community (node) was nominated by other communities (nodes). We focus on in-degree centrality and network centralization to determine what the major hubs are for accessing resources in Alaska. Network centralization is a measure of variation in the degree centrality scores of the communities. It represents inequality of the network and the higher the network centralization, the higher level of inequality in the network. More specifically, a network in which a community has, or few communities have, many incoming network connections with other communities has high network centralization, whereas a network with connections that are more evenly distributed has low network centralization. The analysis relies upon the assumption that communuity key actors accurately nominate other communities that members of their community interact with on a regular basis.

There were four open-ended questions (Q30-Q33) in the survey that were analyzed using standard qualitative data analysis methods via the software package NVivo. Deductive coding was used to draw out themes reported by respondents (Saldana 2009). Response distributions of themes were calculated and distributions were broken out by regional groupings to provide further illumination of results. Additionally, representative quotes of themes are included to substantiate the context and codes.

NON-RESPONSE BIAS ANALYSIS

A unit non-response bias analysis was completed for general survey response and is presented here. Unit non-response refers to failed response to the survey unit, whereas item non-response refers to failed response to an item in the survey (Groves et al. 2002). Item non-response rates are summarized separately (presented in Appendix B) for each individual question through the reporting of response distributions based on the total number of surveys received and the number of item respondents.

Unit non-response to mail surveys may broadly be attributed to non-delivery, refusal, and incapacity (Groves et al. 2002). For example, a community may be remote and may lack a post office resulting in failed delivery. Community members may not respond to the survey because of indifference, social characteristics, or illiteracy. Therefore, to assess unit non-response and if non-response to the survey may be attributed to chance or to a number of external factors, several variables (listed below) were statistically tested.

Potential bias variables included a collection of those sourced from the U.S. Census; the Alaska Fisheries Information Network (AKFIN); the Alaska Commercial Fisheries Entry Commission (CFEC); and the Alaska Department of Commerce, Community, and Economic Development's Division of Community and Regional Affairs (DCRA). Twenty-one variables were selected that could affect community receiving of the survey and survey response, such as

presence of a post office and connection to the main road system, as well as variables such as the percent of residents that identify themselves as Alaska Native and educational attainment. Fisheries variables were included to determine if communities were self-selecting for non-response based on their fisheries participation and therefore the perceived relevance of the survey. Additionally, some basic demographic variables were included to assess differences between communities that responded to the survey and those that did not. The variables analyzed include:

- Survey response in the second year of survey implementation;
- Percent of the population that considers themselves Alaskan Native;
- 2013 U.S. Census population size;
- Educational attainment of those 25 years and older;
- Language other than English spoken at home of those 5 years and older that consider themselves as speaking English less than "very well";
- Percentage of families with income in the last year below the poverty level;
- Median household income;
- Census area designation;
- Community governance classification (see Table 4);
- Geographic region of the state (following Himes-Cornell et al. 2013);
- Connection to the intercontinental highway system;
- Presence of a post office;
- Number of ADF&G permits issued for subsistence harvest of salmon;
- Count of distinct vessels delivering salmon;
- Eligibility for the Community Quota Entity program;
- Eligibility for the Community Development Quota program;
- Per capita count of distinct vessels participating in all fisheries based on homeport;
- Count of all distinct vessel owners based on vessel owner residency;
- Sum of ex-vessel value for all landings based on vessel owner residency;
- Count of all distinct CFEC permits fished; and
- Count of distinct sport fishing licenses sold to residents of community.

Statistical analyses were completed in Stata. Pearson's Chi-square tests were conducted for categorical variables and Wilcoxon rank-sum (Mann-Whitney two-sample statistic) were conducted for continuous variables because of non-normal distribution. Only 3 of the 21 variables analyzed returned significant results at the 0.05 significance level: response to the previous iteration of the survey in 2011 ($p = 0.002$), connection to highway system ($p = 0.010$), and distinct vessels homeported in a community ($p = 0.0122$) (Tables 5-6). The variables percent of community that is Alaska Native and ex-vessel value for all landings based on vessel owner residency did not return significant results (Tables 7-8) although they are related to the latter two variables. For example, Native communities tend to be remote and distant from highway systems, and vessels homeported and landings are associated factors. Nonetheless, the significant relationship between the survey response in 2011 variable and survey response in 2013 variable indicates that communities that returned the survey in 2011 were more likely to return it in 2013 year as well. This suggests that we need to undertake further effort in reaching non-respondents in future survey efforts. The second significant test result indicates that communities not

connected to the highway system are less likely to return the survey. This suggests that future efforts should focus on reaching more remote communities to achieve higher response rates of remote populations. The third significant test implies that communities with more homeported vessels are more likely to participate in the survey.

Table 4. -- Description of Alaska community governance classification.

Type of governance structure	Type	Description[1]
1st Class City	Municipal	A 1st Class City must have at least 400 permanent residents; has a voter-elected mayor and city council.
Home Rule City	Municipal	A Home Rule City must be a first class city that has adopted a home rule charter.
2nd Class City	Municipal	A 2nd Class City must have at least 25 resident voters; has a city council and an internally elected mayor.

[1] Definitions were obtained from the Alaska Department of Commerce, Community and Economic Development Glossary of terms (http://commerce.alaska.gov/dnn/dcra/ResearchAnalysis/Glossary.aspx).

Table 5. -- Pearson's Chi-square test results for survey response, and response to the 2011 survey and connection to highway system.

Variable	N	Chi-square	P- value
Response to the 2011 survey	208	10.07	0.002
Connection to highway system	208	6.63	0.010

Table 6. -- Wilcoxon rank-sum test results for survey response and count of distinct vessels homeported in a community

	Mean	St. Dev.	N	P-value
Non-response	25.00	98.90	45	0.012
Response	10.37	56.90	111	-

Table 7. -- Wilcoxon rank-sum test results for survey response and percent of community that is Alaska Native.

	Mean	St. Dev.	N	P-value
Non-response	57.43	40.61	52	0.755
Response	57.47	36.27	130	-

Table 8. -- Wilcoxon rank-sum test results for survey response and sum of ex-vessel value for all landings based on vessel owner residency.

	Mean	St. Dev.	N	P-value
Non-response	25.82	32.12	45	0.985
Response	56.84	123.17	107	-

SUMMARY OF SURVEY RESPONSES

This section summarizes data collected from the 2013 Alaska Community Survey. Overall item response distributions and basic summary statistics are included for each survey question in Appendix B. Distributions are broken down by survey respondents and item respondents. Survey respondents are defined as the 148 unique communities that returned completed (or partially completed) surveys. Item respondents are defined as the subset of survey respondents that provided a valid numerical or categorical response to a question, according to the type requested. The distribution of item respondents by regional grouping is provided to show the proportion of respondents that selected each category for the specific region. Responses are grouped by geographic region of the state (following Himes-Cornell et al. 2013) in the text and full tables of results are included in Appendix A. Results and item responses are grouped and summarized by region in order to inform of trends within and across regional groupings where types of fishing activity (commercial, recreational, subsistence) and access to resources generally vary by region.

POPULATION DISTRIBUTION

Community respondents were asked to provide information about the year-round population in their community, the number of seasonal workers present, and the number of year-round residents that worked in shore-side processing plants (Q1). The purpose of this question is to gain an understanding of population fluctuations based on fishery activity and not to establish an accurate measure of permanent population size. Anchorage and Mat-Su communities reported the largest mean estimate (76,421) of year round population size whereas Kodiak Island reported the lowest (241) (Appendix Table A1). Bristol Bay and Alaska Peninsula communities reported the highest mean (684), and Kuskokwim River Mouth the lowest (81) for transient workers (Appendix Table A2). Kodiak Island (51%), Norton Sound and Bering Strait (49%), and Southeast (42%) had the highest numbers of permanent residents working in shore-side processing plants whereas Northern Alaska (.03%), Interior (.08%) and Anchorage and Mat-Su (.14%) reported the lowest (Appendix Table A3).

Respondents were asked to list the months when the community's population peaked (Q4). Most communities reported that the peak occurred between June and August. Communities in the Aleutian and Pribilof Islands grouping also reported a significant peak between January and March (25%-42%), and 60% of Northern Alaska communities reported a peak in December (Fig. 3, Appendix Table A4). To understand more about the presence of seasonal workers in a

community and how it relates to population fluctuations, respondents were asked to report which months during the year those seasonal workers were present in the community (Q2). The majority of communities in most regions reported seasonal workers present between May and September (Fig. 4, Appendix Table A5).

Communities were also asked to report how closely tied their fluctuation in population was to employment in fishing sectors (Q5). Almost half of the respondent communities of the Aleutian and Pribilof Islands (45%) reported that their population peak was entirely driven by employment in various fishing sectors (Fig. 5, Appendix Table A6). Bristol Bay and Alaska Peninsula, and Norton Sound and Bering Strait also reported that population peaks were entirely driven by the fishing sectors (30%). Kodiak communities mainly reported their population peak was mostly related to fishing sector employment (43%). Conversely, 50% of respondents of Anchorage and Mat-Su reported population peak was not at all driven by employment in fishing, or somewhat driven (50%).

Seasonal presence of workers in communities may be driven by employment in other natural resource-based industries in addition to fishing, including oil and gas and ecotourism. Survey question Q24 asked which natural resource-based industries the community relies on. Southeast (96%), Aleutian and Pribilof Islands (92%), and Bristol Bay and Alaska Peninsula (91%) communities reported the highest reliance on fisheries. (Fig. 6, Appendix Table A7). Interior and Northern Alaska communities reported the lowest reliance on fisheries (25% and 33% respectively). Southeast (83%) and Bristol Bay and Alaska Peninsula (77%) rely on sportfishing and hunting more than other regions. Southeast (61%), Prince William Sound (60%), Kodiak Island (57%) and Anchorage and Mat-Su (50%) respondent communities rely more on ecotourism, whereas 56% of Kenai Peninsula and Cook Inlet rely more on oil and gas. Southeast (44% and Kodiak Island (43%) communities rely more on logging. No communities reported reliance on geothermal energy.

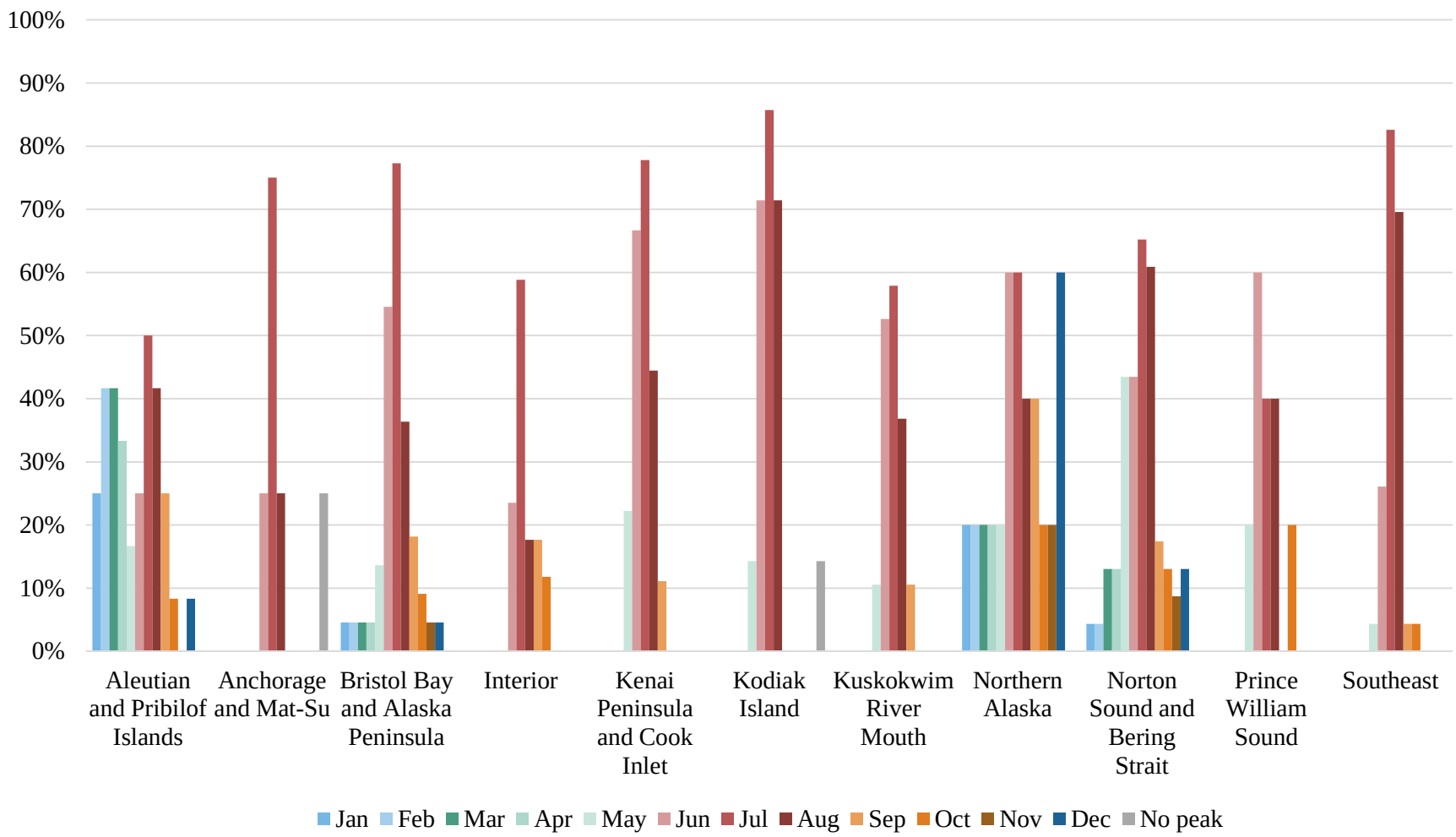


Figure 3. -- Regional breakdown of responses to the following question: In what month(s) does the population in your community reach its annual peak? (Q4).

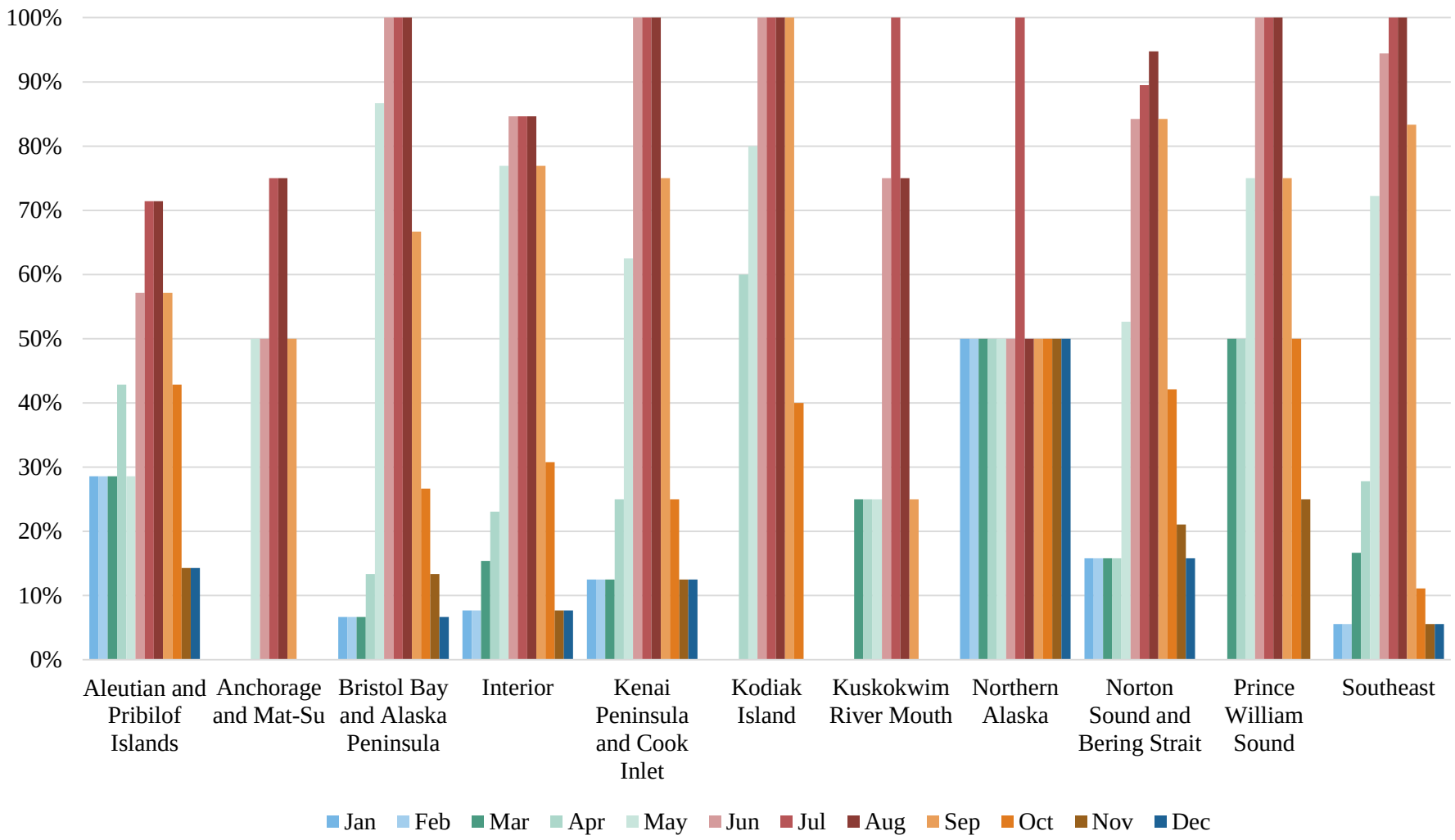


Figure 4. -- Regional breakdown of responses to the following question: On average, which months per year does your community have seasonal workers living there? (Q2).

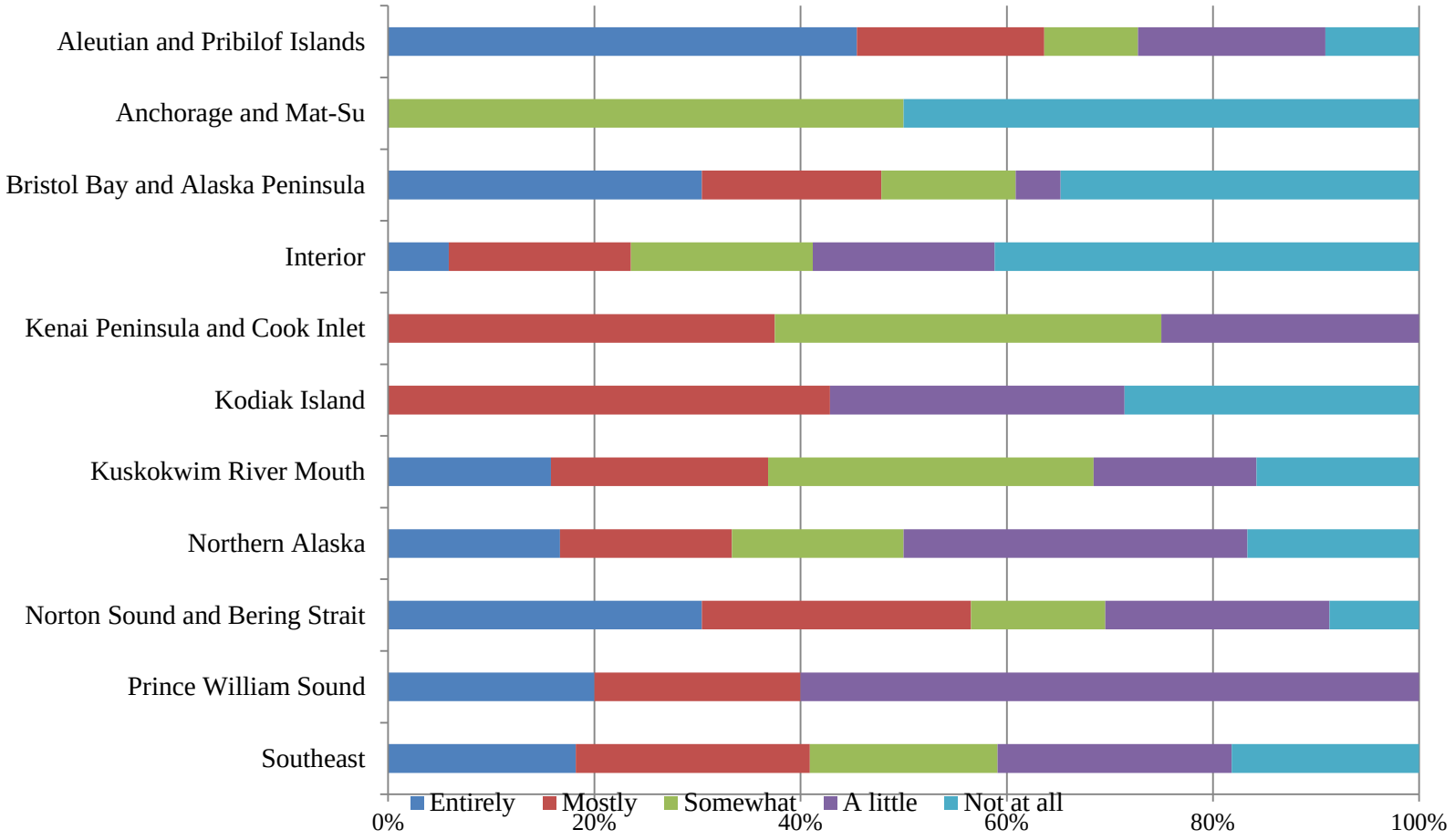


Figure 5. -- Regional breakdown of responses to the following question: To what degree is this peak in population driven by employment in the fishing sectors? (Q5).

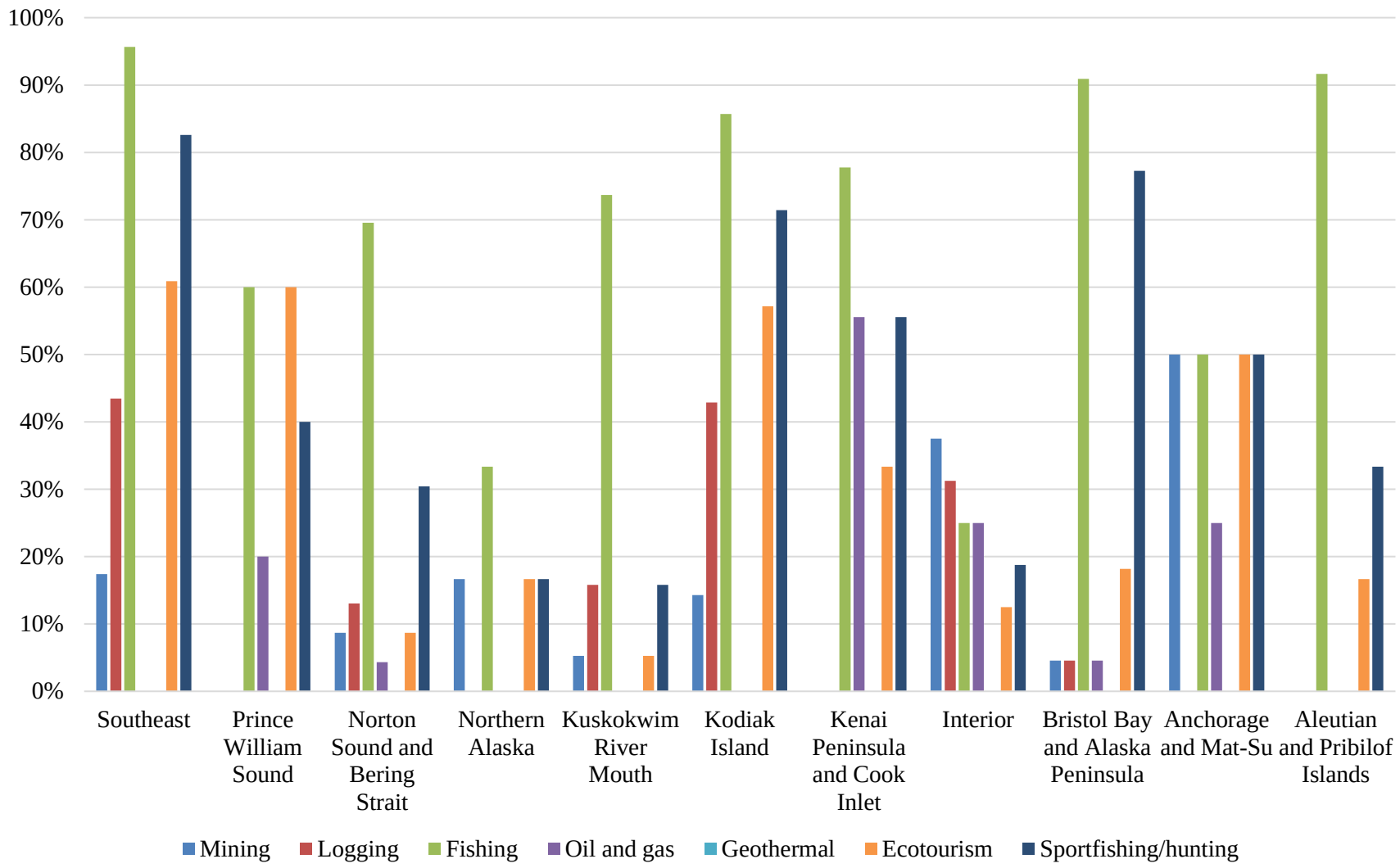


Figure 6. -- Regional breakdown of responses to the following question: Which, if any, natural resource-based industries does your community's economy rely upon? (Q24).

VESSEL AND FISHERIES SUPPORT INFRASTRUCTURE

The survey included questions about community dock infrastructure to determine community capacity for hosting fishing and other vessel activities. Question Q12 prompted respondents to report how many feet of public moorage is available for permanent (Q12a) and transient (Q12b) vessels. The large majority of communities of Interior (94%), Bristol Bay and Alaska Peninsula (89%), and Northern Alaska (83%) regional groupings reported that no public moorage was available for permanent vessels (Fig. 7, Appendix Table A8). Kenai Peninsula and Cook Inlet respondents reported the largest public moorage with 25% of respondents reporting over 8000 feet, followed by Kodiak Island (17%), Southeast (17%), and Aleutian and Pribilof Islands (10%). Results for temporary public moorage for transient vessels was similar to permanent vessel moorage with communities of Interior (93%), Bristol Bay and Alaska Peninsula (87%), and Northern Alaska (83%) again reporting no moorage (Fig. 8, Appendix Table A9). Only respondents of Kenai Peninsula and Cook Inlet (29%), Aleutian and Pribilof Islands (11%), and Southeast (5%) reporting having moorage over 8000 feet for transient vessels. The data indicates that the majority of moorage in these communities is less than 500 feet and mainly supports smaller permanent and transient vessels.

Vessel size capacity for communities was also reported (Q11). Respondent communities of the Aleutian and Pribilof Islands (17%), Southeast (14%), Kodiak Island (14%), Kenai Peninsula and Cook Inlet (13%) and Bristol Bay and Alaska Peninsula (9%) groupings reported being able to host vessels greater than 500 feet in length (Fig. 9, Appendix Table A10). However, few communities reported the capacity to host vessels between 200 and 500 feet and the majority have moorage capacity that is limited to vessels with maximum length between 100-200 feet. Seventy-five percent of communities of the Anchorage and Mat-Su, and Interior regional groupings reported zero capacity, and half of the communities of Kuskokwim River Mouth and Northern Alaska reported zero capacity.

Community respondents were also asked to report the estimated annual revenue their community received from public moorage facilities (Q13). Only values from regions that had more than three communities respond to the question are included due to confidentiality. Kenai Peninsula and Cook Inlet communities reported the highest median revenue of $84,928.65 and half of the other regions reported $0 in median revenue (Table 9).

The types of regulated vessels a community was able to host was also queried (Q14). The capacity to support regulated vessels varied across regions with Northern Alaska communities reporting the least capacity to support the various types (Fig. 10, Appendix Table A11). Southeast communities reported the highest frequency in ability to support rescue vessels (50%), cruise ships (52%) and HAZMAT (35%). Aleutian and Pribilof Islands reported the highest frequency in ability to support ferries (58%) and fuel barges (92%). Northern Alaska communities reported no capacity for rescue vessels, cruise ships or ferries. Bristol Bay and Alaska Peninsula, Northern Alaska, and Prince William Sound reported no capacity for cruise ships. The ability to support fuel barges and HAZMAT was reported across all regions, yet at varying levels.

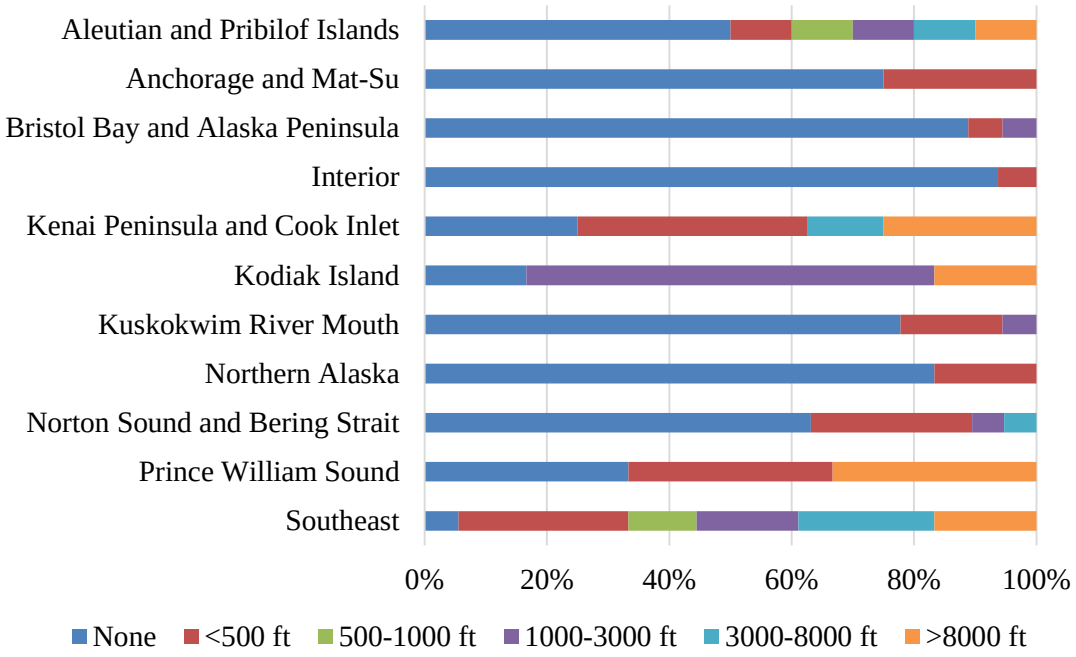


Figure 7. -- Regional breakdown of responses to the following question: How many feet of public dock space for moorage are located in and around the port of your community for permanent vessels? (Q12).

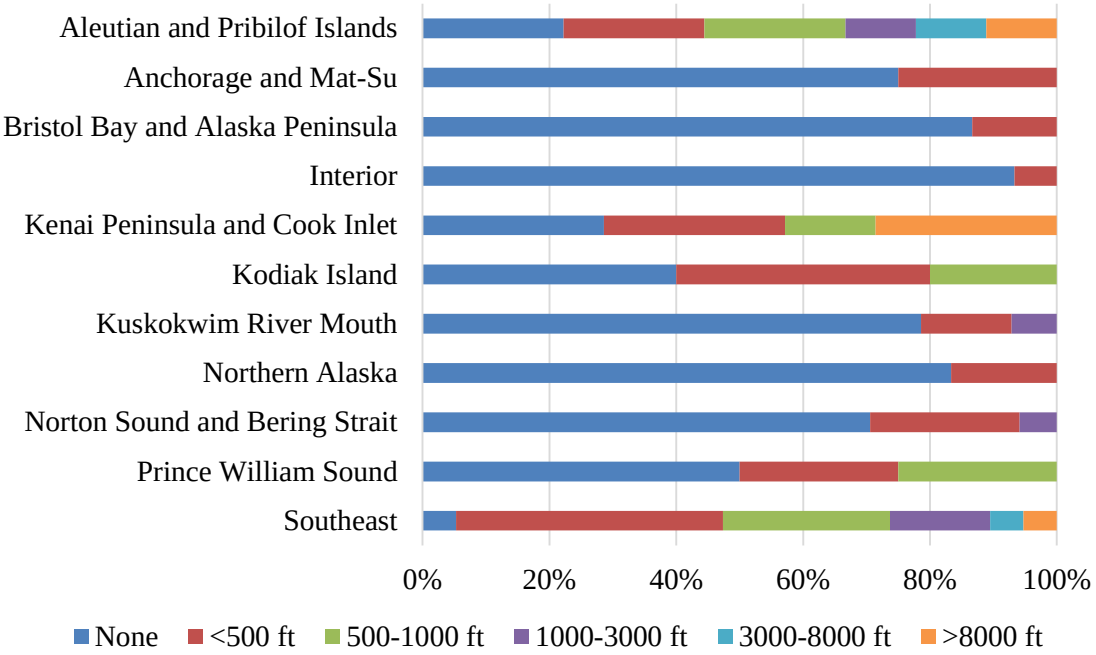


Figure 8. -- Regional breakdown of responses to the following question: How many feet of public dock space for moorage are located in and around the port of your community for transient vessels? (Q12).

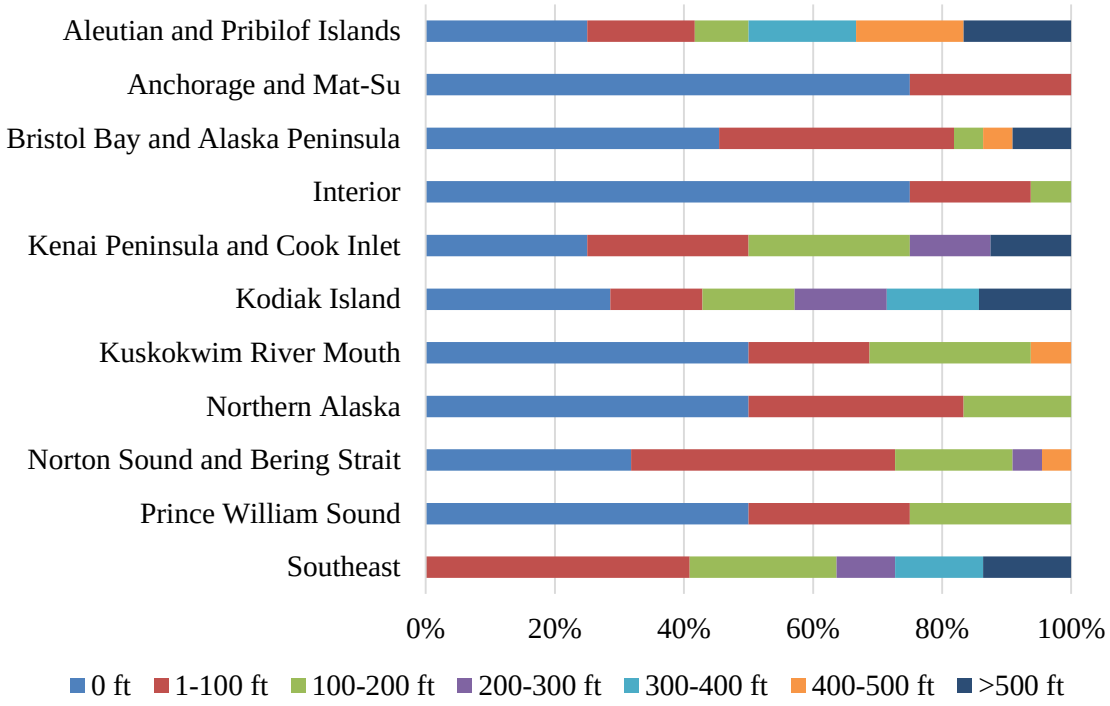


Figure 9. -- Regional breakdown of responses to the following question: What is the maximum vessel length that can use moorage in your community? (Q11).

Table 9. -- Regional breakdown of responses to the following question: What is the annual revenue that public moorage facilities earned in 2013? (Q13).

Region	n	Mean	St.Dev.	Median	MAD
Aleutian and Pribilof Islands	9	$287,780	$773,951	$2,829.00	$0.00
Anchorage and Mat-Su	2	*	*	*	*
Bristol Bay and Alaska Peninsula	13	$7,769	$27,713	$0.00	$0.00
Interior	13	$0.00	$0.00	$0.00	$0.00
Kenai Peninsula and Cook Inlet	6	$586,175	$846,159	$84,928.65	$84,928
Kodiak Island	6	$346,135	$810,361	$18,299.00	$18,299
Kuskokwim River Mouth	16	$2,875	$7,107	$0.00	$0.00
Northern Alaska	5	$0.00	$0.00	$0.00	$0.00
Norton Sound and Bering Strait	21	$63,000	$283,466	$0.00	$0.00
Prince William Sound	5	$238,600	$532,408	$0.00	$2,000
Southeast	22	$735,034	$2,167,249	$27,500.00	$224,500

Note: Asterisk (*) represents confidential data due to three or fewer communities reporting.

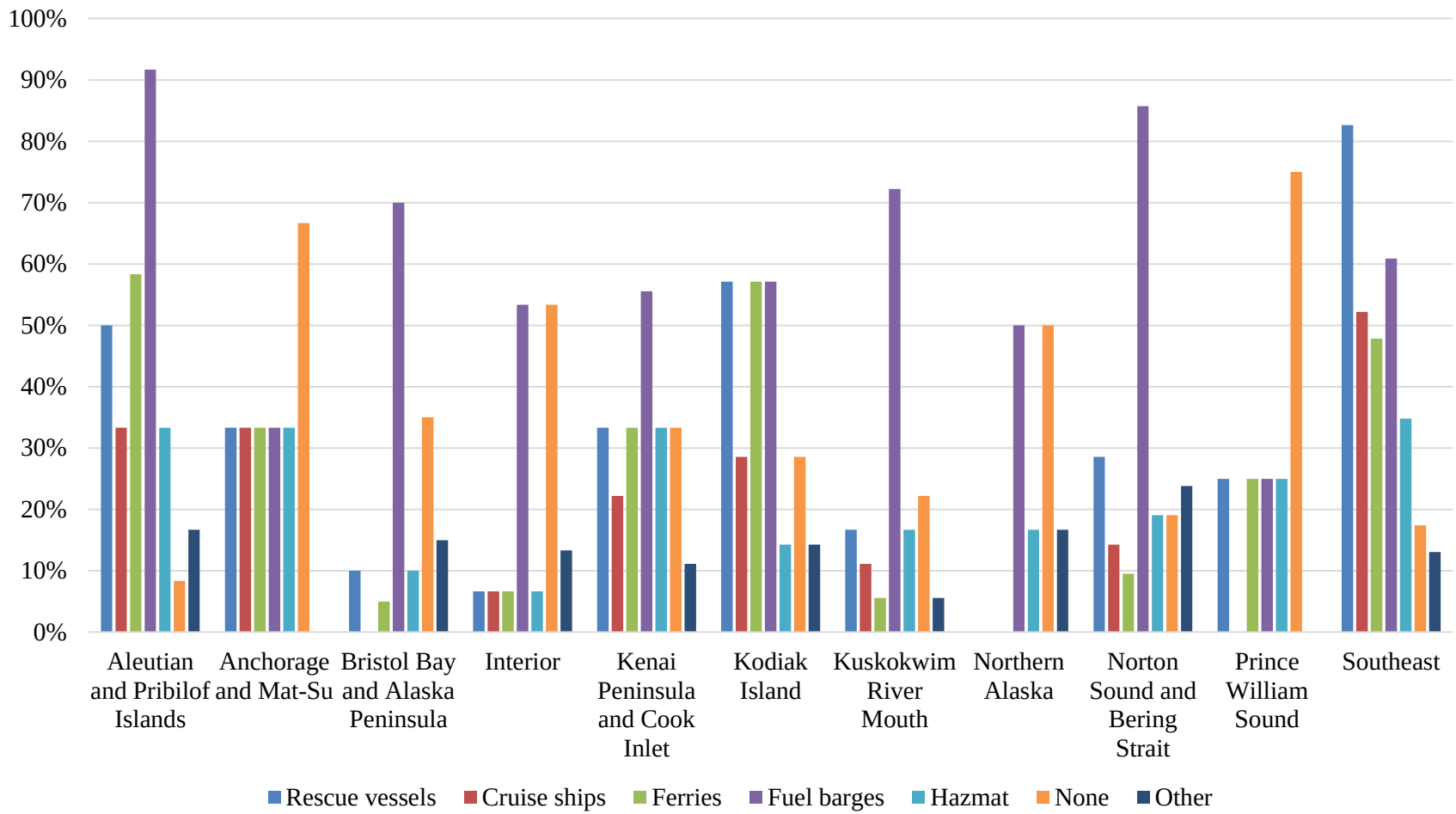


Figure 10. -- Regional breakdown of responses to the following question: Which of the following types of regulated vessels is the port of your community capable of handling? (Q14).

Community respondents were also asked to report about infrastructure projects they had undertaken, were currently undertaking, or were planning to undertake in the next ten years (Q10). Potential projects ranged from fish cleaning station, new dock space, haul-out facilities, and harbor dredging relative to fisheries, and public services such as water treatment, schools and public safety among others. The list of overall response distributions is shown in Appendix Table A12. The responses show that less than half of the communities have had infrastructure projects completed in the past 10 years. Responses varied across regions as shown in Appendix Tables A13-23. Northern Alaska and Prince William Sound communities reported the fewest ongoing or planned projects of all regions with the former having the least infrastructure for supporting the fishing industry. One Kenai Peninsula and Cook Inlet community respondent reported that most infrastructure are upgraded annually. Community respondents also listed other projects. For example, communities of Norton Sound reported that a museum, evacuation center, and recycling center were in progress.

Respondents were also asked to report on the presence or absence of specific fishery support businesses in their community (Q21). The list included 25 types of businesses, including, but not limited to, processing plants, various boat repair businesses, and fishing business attorneys. Boat fuel sales, tackle sales, bait sales, water taxi and air taxi were businesses common across all regional groupings. Nothern Alaska had the fewest (7) and most basic (i.e., tackle, bait, and fuel sales) of fishing support businesses of all the regions, whereas Kenai Peninsula and Cook Inlet had all 25 services (Appendix Table A24). Aleutian Island communities reported the highest frequency for fish processing plants (75%), Prince William Sound for fish gear sales (80%), Anchorage and Mat-Su for fishing gear manufacturer (25%), and Southeast for general boat repair (52%). Kenai Peninsula and Cook Inlet communities reported the highest frequency for small boat and large boat haul out facilities (75% and 38% respectively), and Southest for tidal grids for small and large boats (74% and 44% respectively). Southeast communities reported the highest frequency for commercial fishing vessel moorage (83%) and recreational fishing vessel moorage (78%). Prince William Sound communities reported the highest frequency for tackle sales and bait sales (80%) and Aleutian Island communities for commercial cold storage facilities (50%), dry dock storage (42%), and marine refrigeration (50%).

FISHING ACTIVITY

Respondents were asked several questions about fishing activity based out of their community. One question asked communities to list the fisheries their communities are engaged in (Q3) and salmon was the most consistently listed fishery across all regional groupings. One hundred percent of community respondents of Anchorage and Mat-Su, Kenai Peninsula and Cook Inlet, Kodiak Island, Kuskokwim River Mouth, Norton Sound and Bering Strait, and Southeast regions reportedly fish salmon (Fig. 11, Appendix Table A25). Other top fisheries reported included halibut and sablefish (82% of communities in the Aleutian and Pribilof Islands grouping) and cod (63% of communities in the Aleutian and Pribilof Islands grouping and 67% in Kenai Peninsula and Cook Inlet). Kodiak Island communities reported the highest participation in herring fisheries (33%), Aleutian and Pribilof Island reported highest in pollock fisheries (27%), Anchorage and Mat-Su reported highest in crab fisheries (50%), and Interior reported highest in whitefish (36%).

Commercial fishing activity

To gather detailed information about each community's fishing activity, respondents were asked to report on the size of commercial fishing boats that utilized the community as their base during the fishing season (Q15). Communities across all regions reported boats operating during fishing season except for Northern Alaska. (Fig. 12, Appendix Table A26). Kodiak Island communities reported the highest frequency of boats less than 35 feet (83%) and boats 35 to 60 feet (100%). Southeast communities reported the highest frequency of boats 61 to 125 feet (48%). Aleutian and Pribilof Islands communities reported the highest frequency of boats greater than 125 feet (42%). Communities of Anchorage and Mat-Su, Interior, Kuskokwim River Mouth, and Northern Alaska did not serve all size classes of vessels.

Respondents were also asked to indicate which gears were used by commercial fishing boats based out of the community (Q19). Gillnets were reported by communities in all regions, with the greatest frequency in Kuskokwim River Mouth communities (89%) (Fig. 13, Appendix Table A27). The highest frequency of trawl gear was reported by Aleutian and Pribilof Islands communities (42%). The highest frequency of pot gear was reported by Southeast communities (70%). The highest frequency of longline was reported by Southeast communities (91%). The highest frequency of purse seiner was reported by Kodiak Island communities (86%). The highest frequency of troll gear was reported by Southeast communities (96%). Northern Alaska communities reported the least diversity of gear types with 50% of respondents reporting the use of gillnets and 50% reporting none. Communities of the Southeast reported use of all six gear types listed in the survey as well as identifying other types used, and Kodiak Island and Kenai Peninsula and Cook Inlet communities reported the second highest diversity of gear types (five gear types and other) (Fig. 14, Appendix Table A28). Other gear types reportedly used by communities include rod and reel, fish-wheels, dip-net and fish traps.

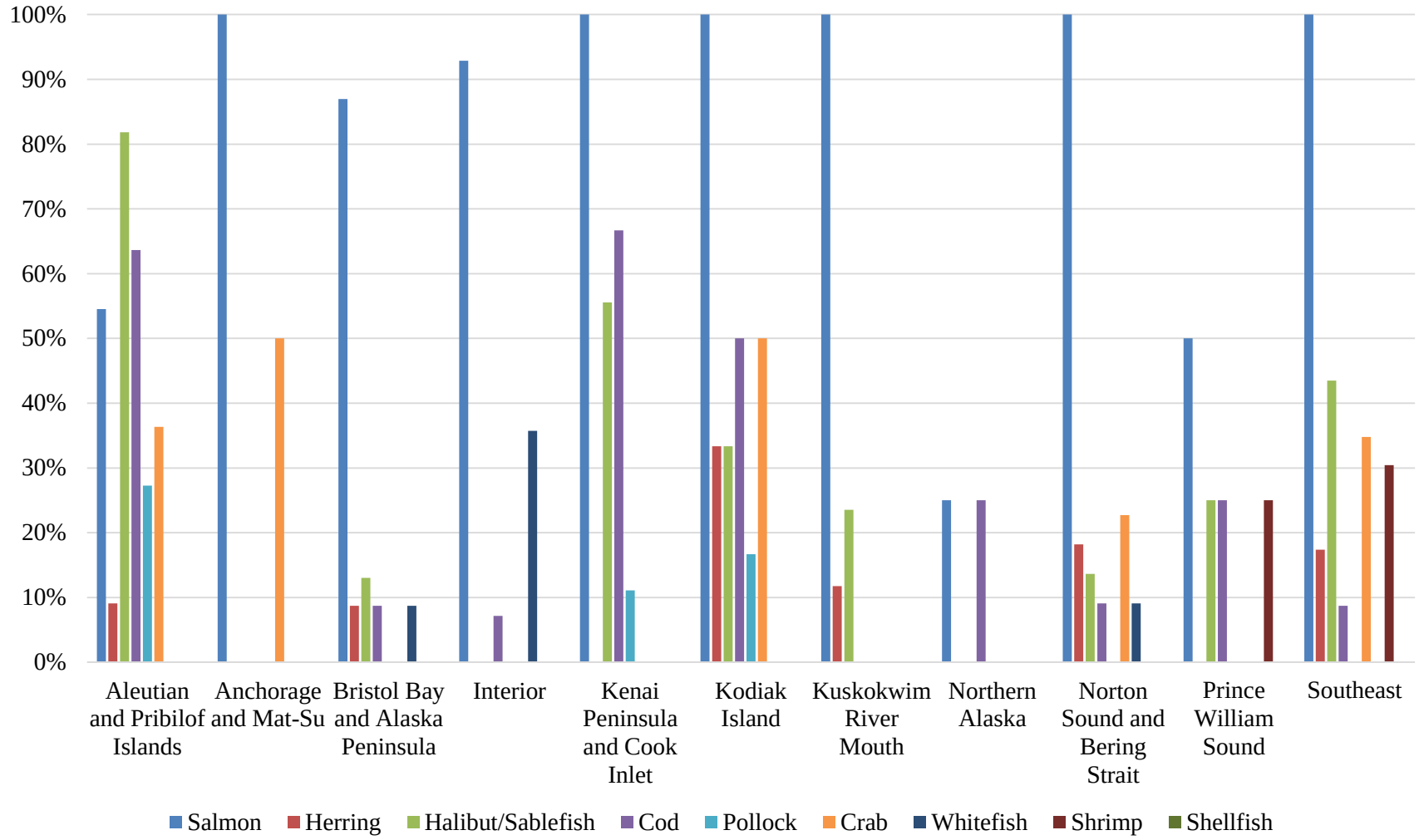


Figure 11. -- Regional breakdown of fisheries in communities each year. (Q3).

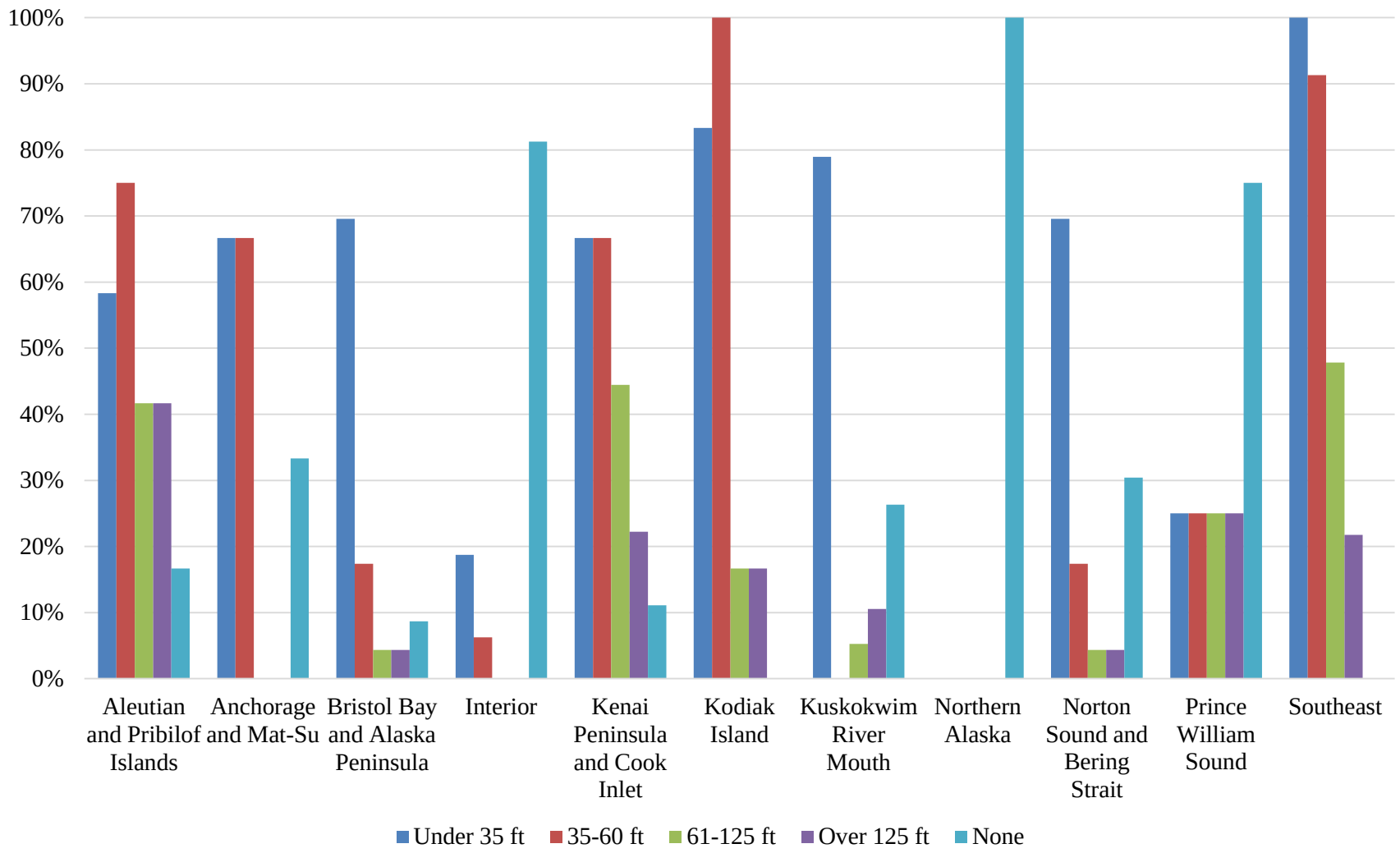


Figure 12. -- Regional breakdown of responses to the following question: Which size classes of commercial fishing boats use your community as their base of operation during the fishing season? (Q15).

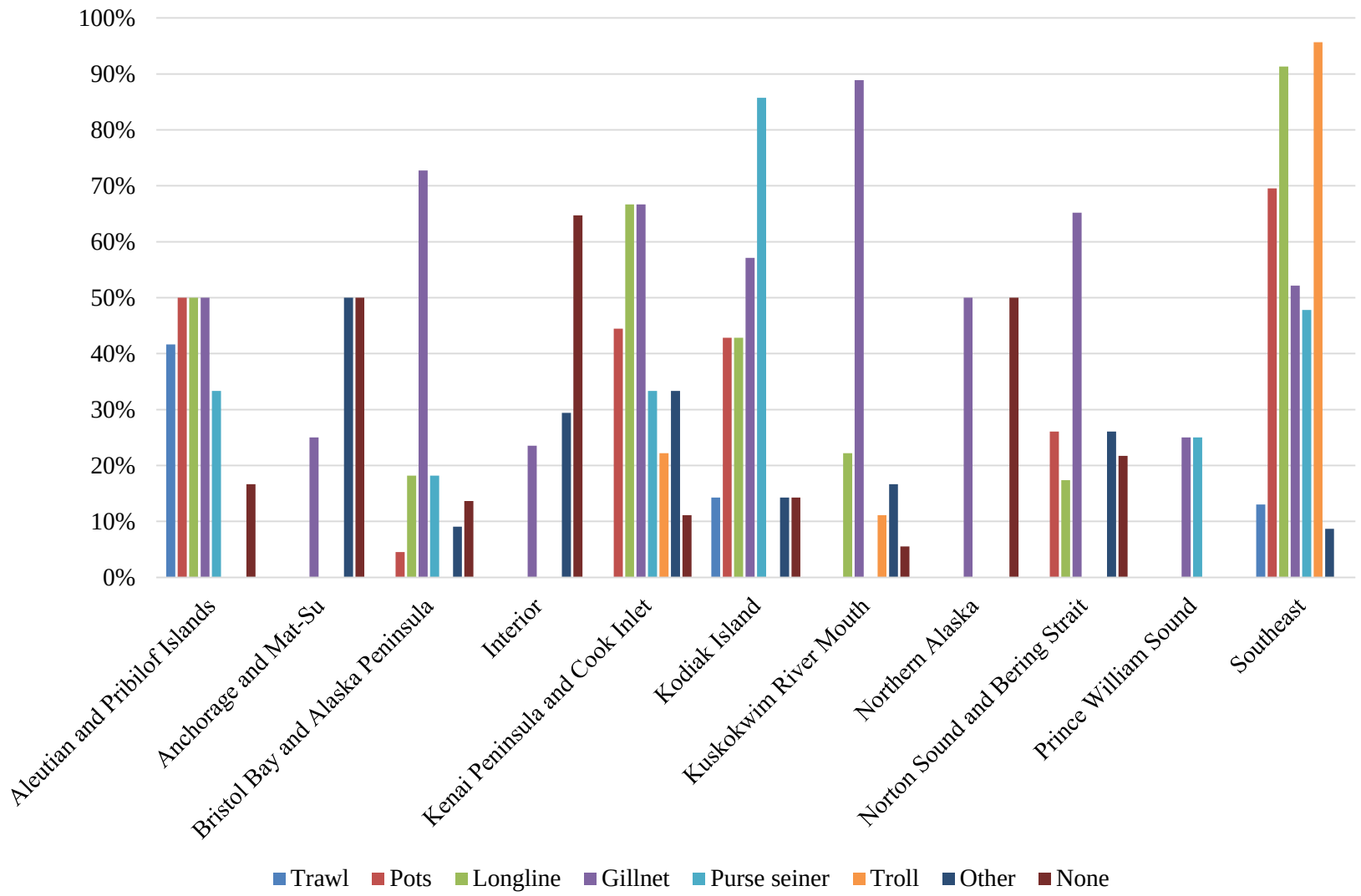


Figure 13. -- Regional breakdown of responses to the following question: Which fishing gear types are used by commercial fishing boats that use your community as their base of operation during the fishing season? (Q19).

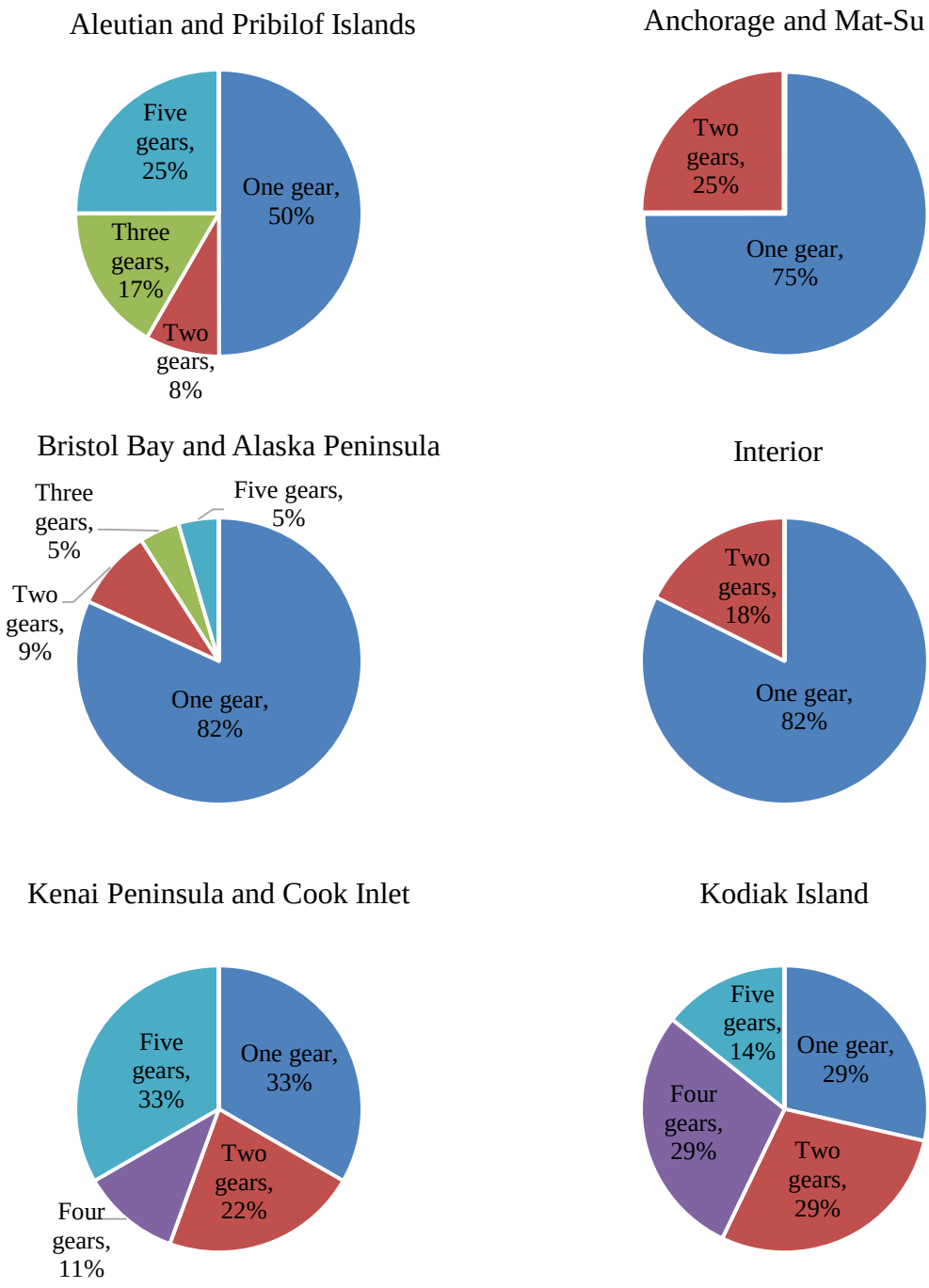
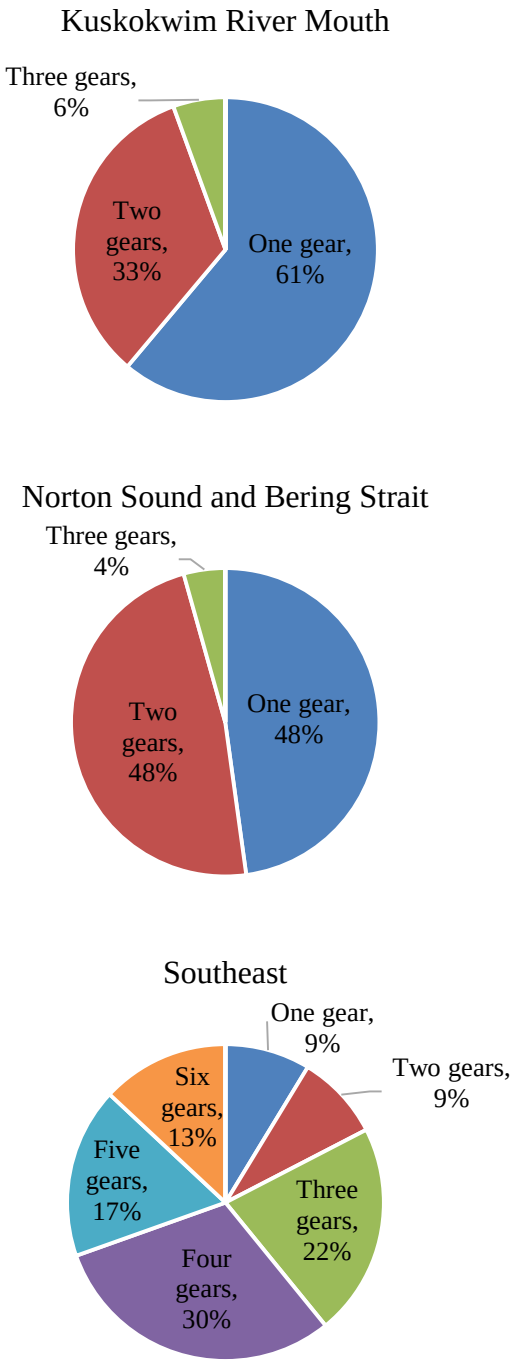


Figure 14. -- Regional breakdown of the number of different gears used by commercial fishing boats that use the community as their base of operation during the fishing season. (Q19).

Figure 14. -- Cont.



Recreational fishing activity

Community respondents were asked to report of the various recreational fishing activities that occur in their community (Q17). Fishing occurs on private boats owned by local residents in all regions and 100% of Southeast communities reported this recreational fishing category (Fig. 15, Appendix Table A29). Prince William Sound communities reported the highest frequency of fishing on charter/party boats (80%) and Southeast communities reported the highest frequency of fishing on private boats by non-residents (83%). Shore and dock fishing by residents and non-residents was reported the most by Southeast and Kodiak Island communities (74% and 72%, respectively).

Fishing on charter boats/party boats, private boats owned by non-residents, and shore or dock based by local residents and non-residents occurred in the majority of regions. However, Anchorage and Mat-Su communities did not report fishing on non-resident private boats, Kuskokwim River Mouth did not report of fishing on charter/party boats, and Northern Alaska did not report of shore or dock based fishing. Five of the regional groupings were comprised of communities that reported no recreational activity with 33% of Northern Alaska communities reporting no recreational fishing occurs.

Communities were also asked to report which species are targeted in recreational fishing (Q18). Salmon species were reported across all regional groupings (Fig. 16, Appendix Table A30). One-hundred percent of Anchorage and Mat-Su community respondents reported recreational fishing of pink, king, coho and sockeye salmon. Similarly, 100% of Kodiak Island respondents reported fishing of coho, sockeye and halibut, and 100% of Southeast respondents reported chinook, coho, and halibut. Halibut was also reported by 89% of Kenai Peninsula and Cook Inlet communities, and 75% of Aleutian and Pribilof Islands. Kodiak Island communities reported the highest frequency of sablefish (67%). Rockfish was highly reported by communities of the Southeast (100%), Kenai Peninsula and Cook Inlet (89%), and Kodiak Island (83%), and crab was most highly reported by Southeast (87%) and Kodiak Island (83%). As for recreational harvesting of non-fishes, shrimp was most reported by Southeast communities (83%), and clams by Kodiak Island (67%). Communities of the Interior and Northern Alaska reported recreational fishing of salmon species only.

Subsistence activity

Communities were asked to provide information about the subsistence resources important to their residents (Q20). Salmon was reported as important for community subsistence across all regions, although Northern Alaska communities reported the lowest frequency of 20% (Fig. 17, Appendix Table A31). One-hundred percent of Anchorage and Mat-Su, Interior, and Prince William Sound reported salmon. Halibut was reported most frequently by Southeast (82%) and Aleutian and Pribilof Islands (72%) communities. Other important subsistence resources included pinnipeds (e.g., seals, sea lions, and walruses) and whales (bowhead and beluga whales), which were more frequently reported in Northern Alaska communities (80%). Kodiak Island (67%) and Southeast (50%) communities reported the highest frequencies for crustaceans and mollusks. Cod, rockfish, lake fishes, and herring were also reported as important subsistence resources, although at lower frequencies.

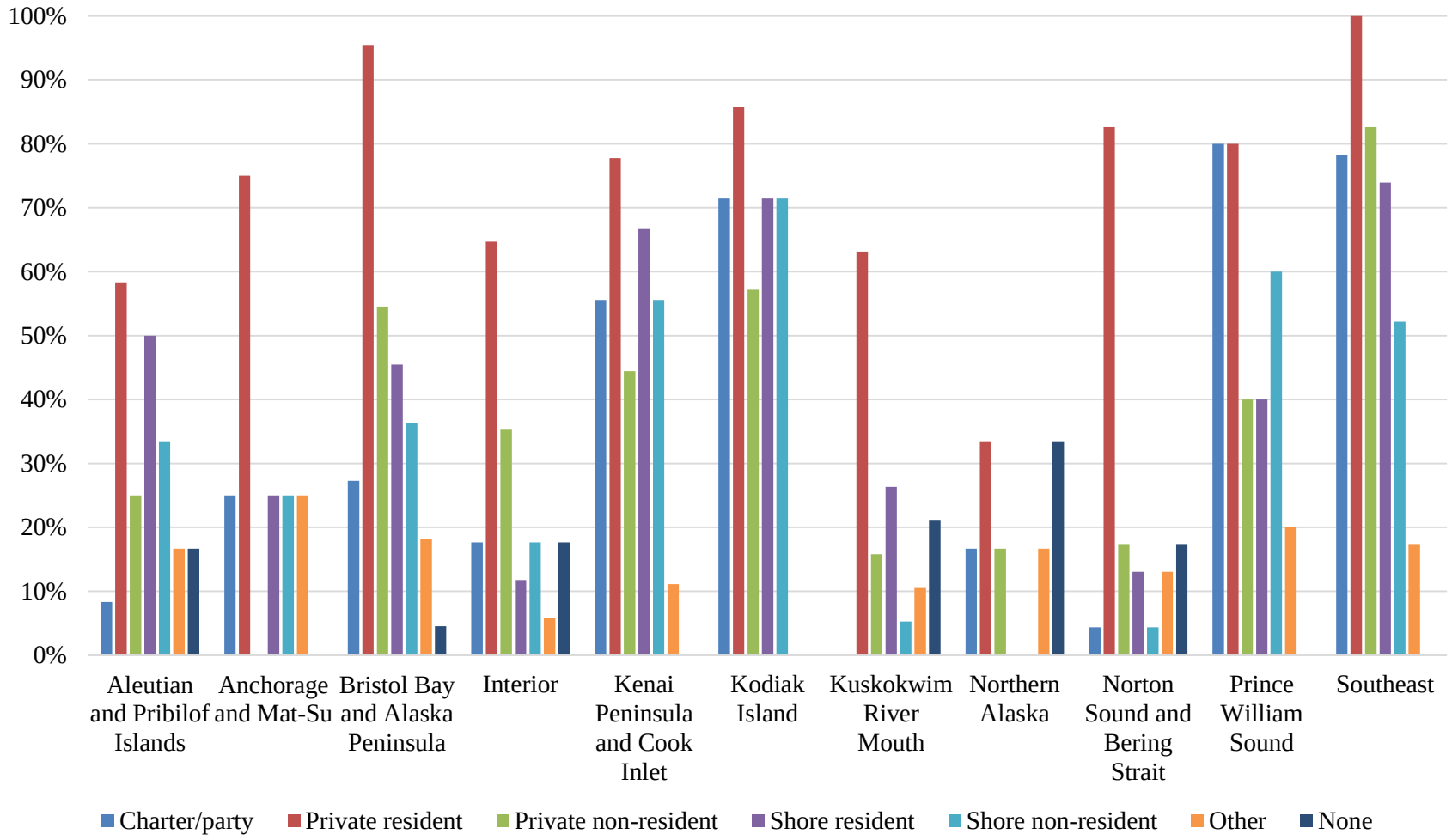


Figure 15. -- Regional breakdown of responses to the following question: To the best of your knowledge, what type of recreational or sport fishing, if any, goes on in your community? (Q17).

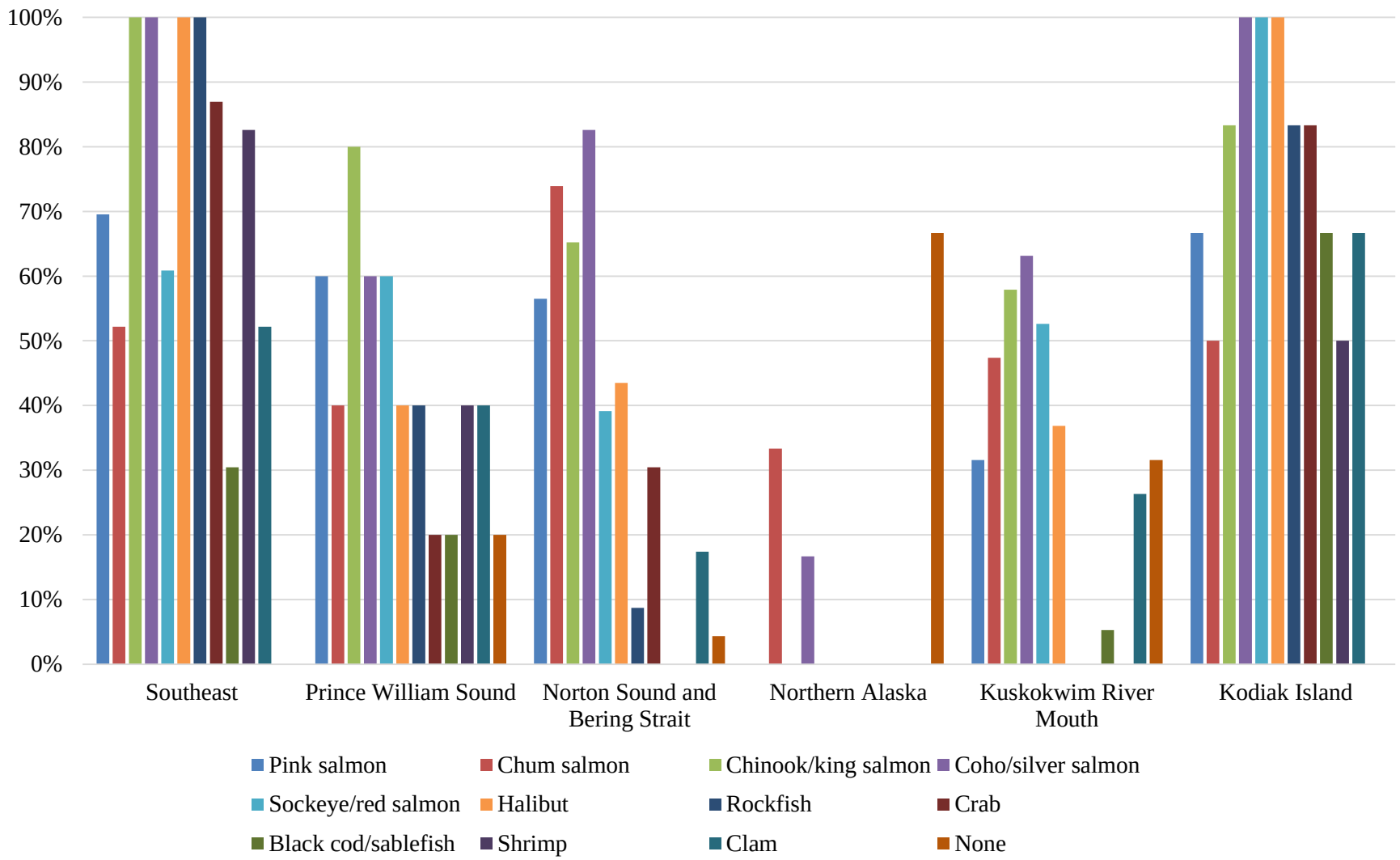
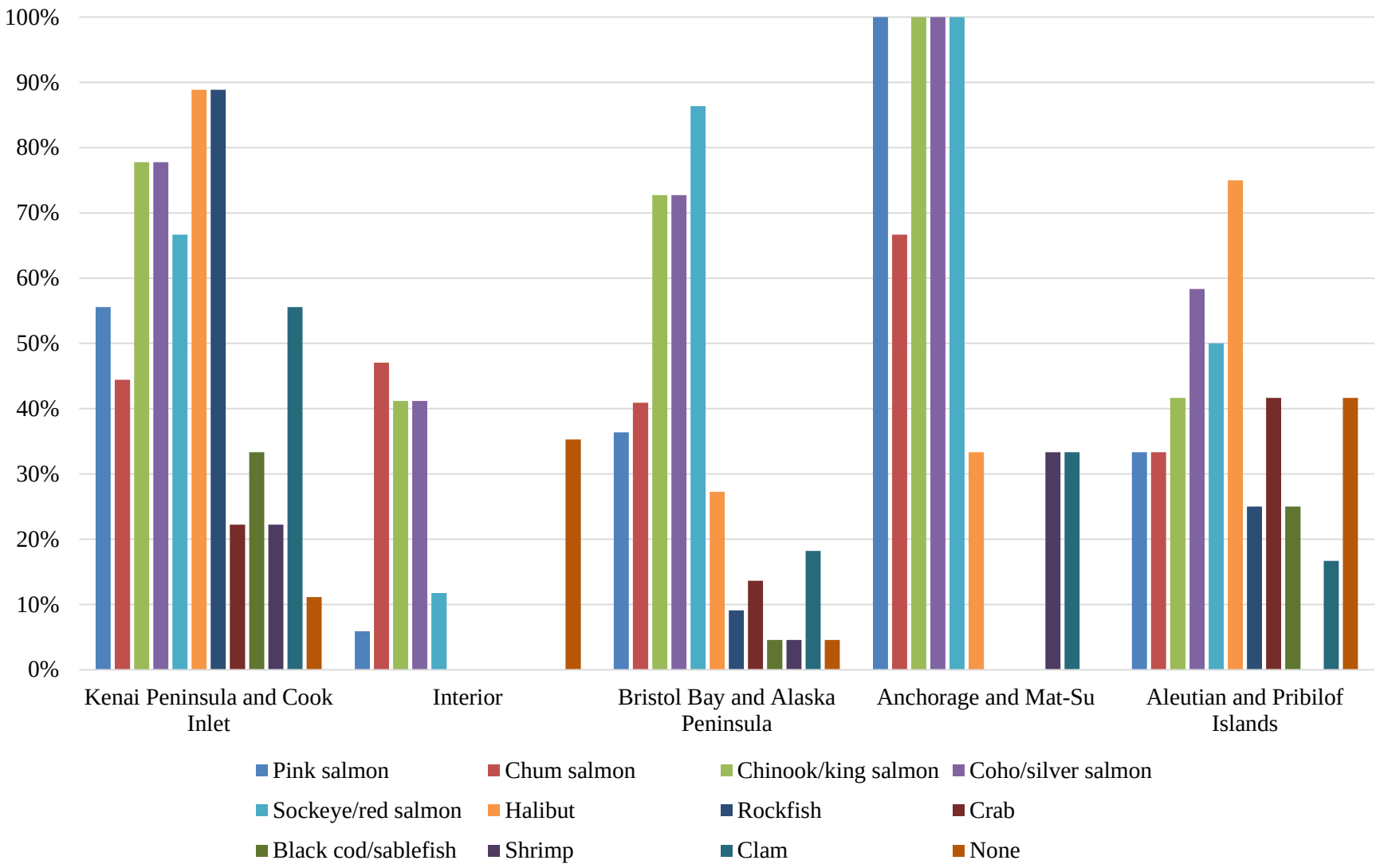


Figure 16. -- Regional breakdown of responses to the following question: What saltwater species, if any, are targeted by recreational fishermen that use boats based in your community? (Q18).



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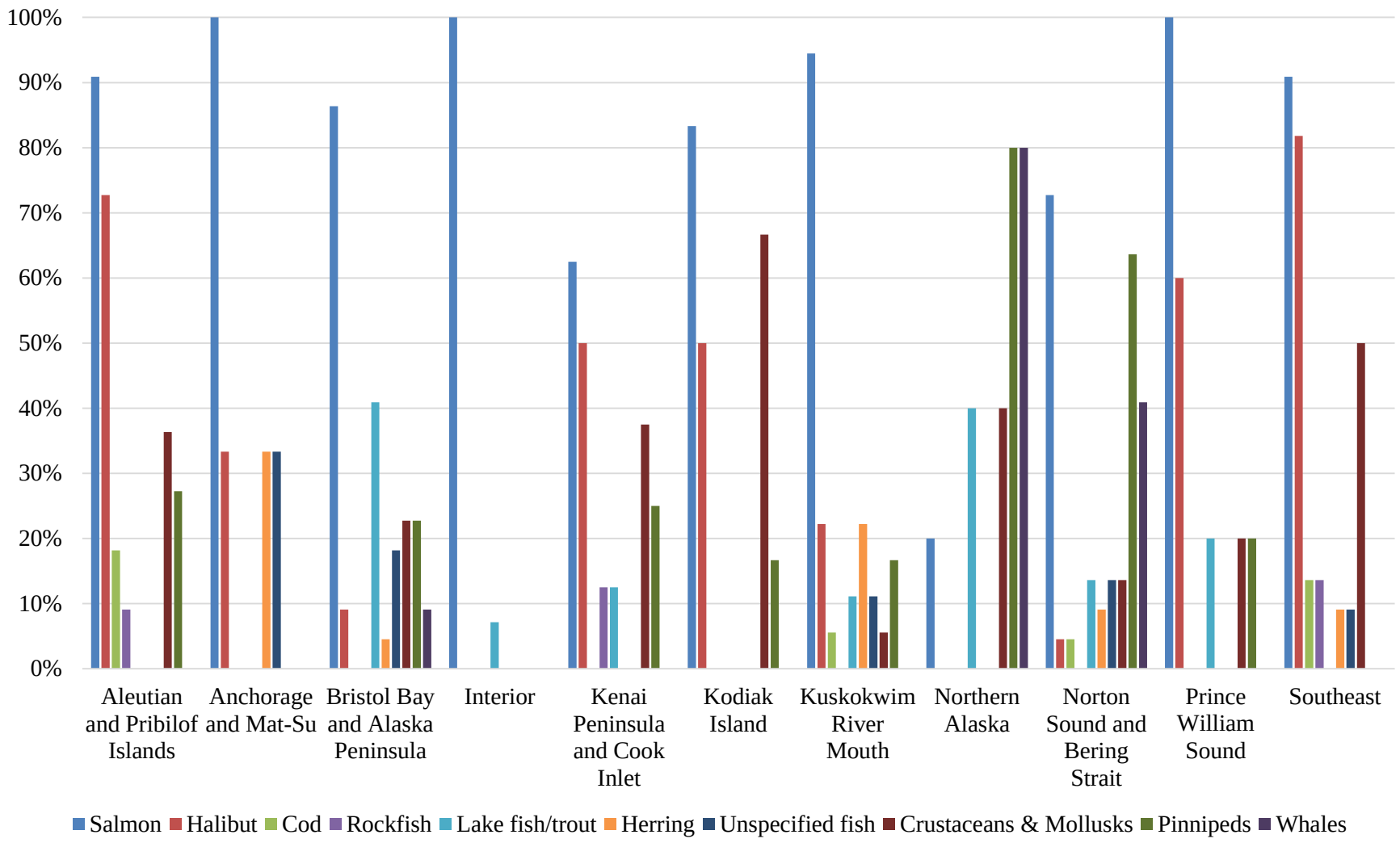


Figure 17. -- Regional breakdown of responses to the following question: What are the three (3) most important subsistence marine or aquatic resources to the residents of your community? (Q20).

REVENUE AND FUNDING

A set of questions in the survey asked communities about different sources of revenue and funding they received in relation to fisheries. Additionally, respondents were asked about community public or social services that were funded by revenue brought in from the fishing industry. Survey question Q26 asked respondents to report any funding or grants they received through the Community Development Quota (CDQ) program. For those that did receive funding or grants, communities of the Norton Sound and Bering Strait region reported the highest median of $100,000, and values of all regions ranged between zero and $2,059,110. All communities in five of the regional groupings did not receive any funding or grants from CDQs; these are the Interior, Kenai Peninsula and Cook Inlet, Kodiak Island, Northern Alaska and Prince William Sound (Table 10 and Appendix Table A32). The median for receiving special allocations from CDQs was zero across all regions. Some communities of the Aleutian and Pribilof Islands, Anchorage and Mat-Su, Kuskokwim River Mouth, and Norton Sound and Bering Strait regions received special allocations.

A survey question also asked respondents to report any revenue received from fisheries-related taxes or fee programs (Q25). Revenue received from harbor rental was the most commonly reported specified source; communities across seven of the regional groupings reported they received revenue from harbor rentals (Fig. 18, Appendix Table A33). Kenai Peninsula and Cook Inlet, Kodiak Island, and Southeast communities received the most funding from various fishery taxes and fees. Interior and Northern Alaska communities reported zero revenue from fisheries related taxes and fees. Also, communities in eight of the regional groupings reported other forms of revenue such as fisheries tax, ice sales, and vessel haul-out fees.

Table 10. -- Regional breakdown of the following question: Does the community local government, organizations, or other local entities receive any funding or grants from a Community Development Quota entity? If funding or grants were received in 2013, please indicate how much the local government received. (Q26).

Region		Funding or grants	Special allocations	None
Aleutian and Pribilof Islands	12	41.67%	33.33%	33.33%
Anchorage and Mat-Su	4	25.00%	25.00%	75.00%
Bristol Bay and Alaska Peninsula	19	31.58%	0.00%	63.16%
Interior	15	0.00%	0.00%	100.00%
Kenai Peninsula and Cook Inlet	7	0.00%	0.00%	100.00%
Kodiak Island	7	0.00%	0.00%	100.00%
Kuskokwim River Mouth	18	38.89%	16.67%	50.00%
Northern Alaska	6	0.00%	0.00%	100.00%
Norton Sound and Bering Strait	23	52.17%	26.09%	43.48%
Prince William Sound	5	0.00%	0.00%	100.00%
Southeast	20	5.00%	0.00%	95.00%

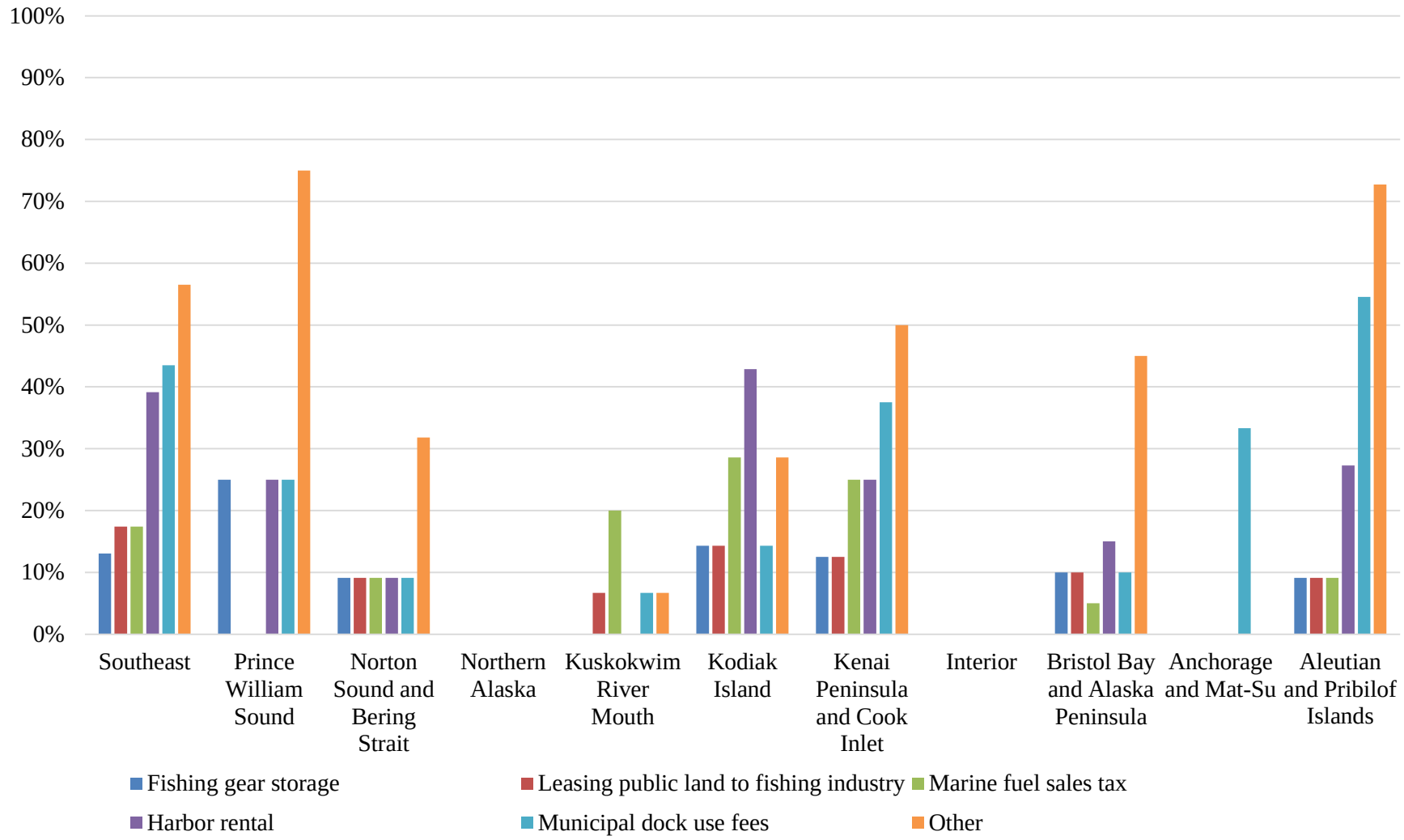


Figure 18. -- Regional breakdown of responses to the following question: Did the community receive revenue from fisheries-related taxes or fee programs this year? (Q25).

Community respondents were asked, based on a list in the survey, to note which public services were funded (at least partially) by fish taxes, fisheries business tax, landing taxes, or marine fuel sales taxes (Q27). Communities of Northern Alaska reported that no such fee programs exist. The majority of the Interior region communities also reported that programs don't exist (88%). Communities of other regions reported a variety of program services (Figure 19, Appendix Table A34). For example, community respondents of Southeast, Norton Sound and Bering Strait, Bristol Bay and Alaska Peninsula, and Aleutian and Pribilof Islands reported across all service categories. The majority of respondents in the Aleutian and Pribilof Islands (58%), Kodiak Island (57%), and Southeast (57%) reported harbor maintenance, whereas the majority of respondents in Kodiak Island (57%) reported water and wastewater systems. Hospital and medical clinic and educational scholarships were most reported by Aleutian and Pribilof Island communities (33% and 25%, respectively). Roads and police and fire were most reported by Kodiak Island communities (43% and 29%, respectively), and social services by Aleutian and Pribilof Islands (42%).

Survey question Q28 asked communities about any local fishing-related fee programs designed to generate funding for public services and infrastructure. Communities of the Aleutian and Pribilof Islands, Bristol Bay and Alaska Peninsula, Kenai Peninsula and Cook Inlet, and Southeast regional groupings reported existing fishing-related fee programs. Communities of the remaining seven regions reported there were no fishery related fee programs (Appendix Table A35). Table 11 summarizes the responses for communities where programs do exist. Examples of fee programs that support municipal operations and infrastructure include; commercial fishing crew licensing fees which support municipal operations (Aleutian and Pribilof Islands); boat and skiff haul out fees which support public services/infrastructure (Bristol Bay and Alaska Peninsula); and shares of the fish tax that go to retire debt on infrastructure (Southeast).

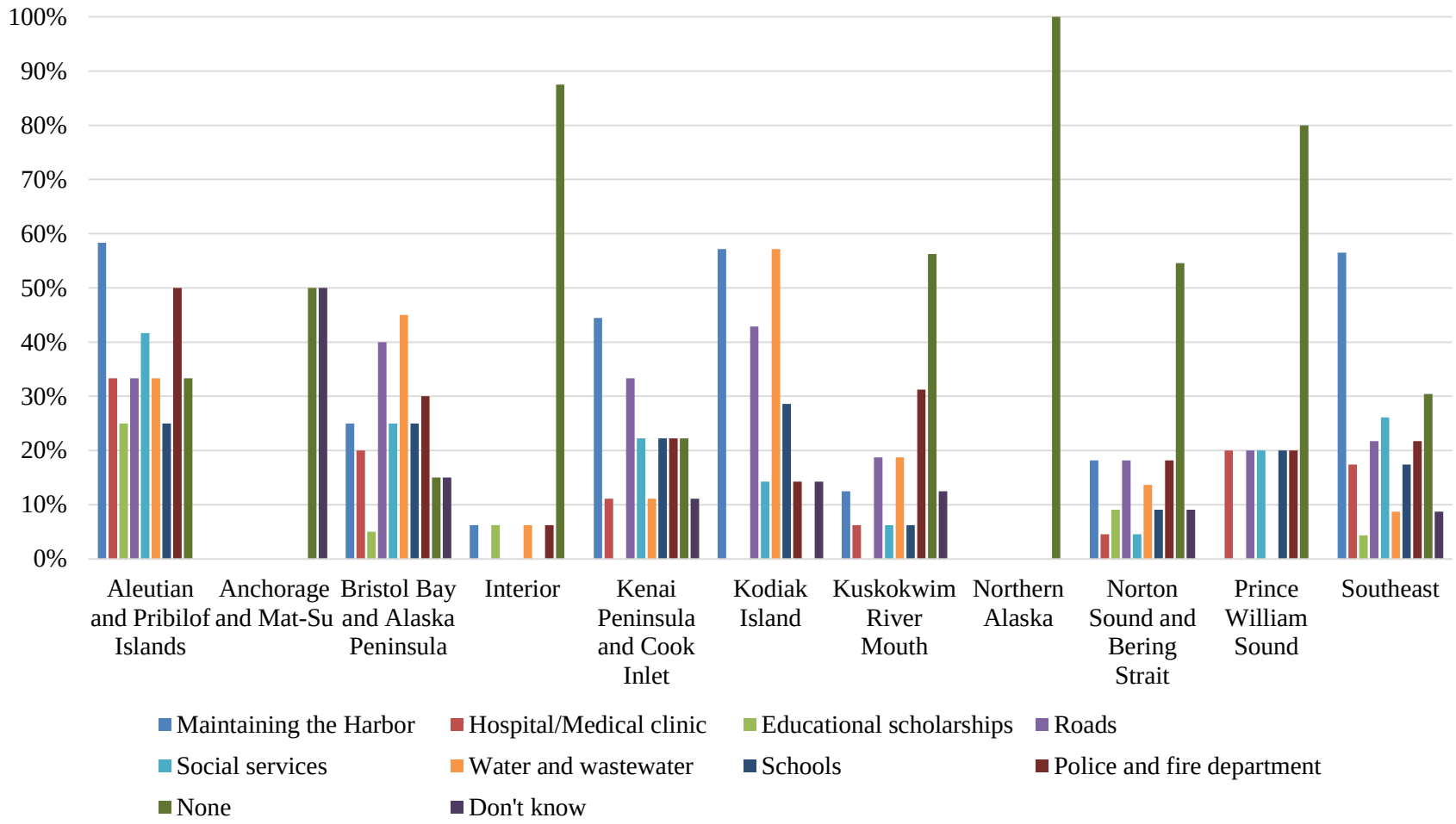


Figure 19. -- Regional breakdown of responses to the following question: Which of your community's public services are at least partially supported or funded by any of the following: Local or Borough Raw Fish Tax, Shared Fisheries Business Tax, the Fisheries Resource Landing Tax, or marine fuel sales tax? (Q27).

Table 11. -- Regional breakdown summary of responses to the following question: Does your community have local fishing-related fee programs charged to the fishing industry that specifically support public services and infrastructure? (Q28).

Region	Community responses
Aleutian and Pribilof Islands	"The city administers local fish and game licensing. Specifically applicable is commercial crew member licensing. Revenue is not substantial and goes into the general fund for municipal operations." "Notary public services are provided on a donation basis, supporting recreation." "City government has a business fee for all local vessel local owners." "Payment in lieu of taxes supports labor construction bond payments."
Bristol Bay and Alaska Peninsula	"The raw fish tax supports the fisherman's hall, city dock, airport, fuel, gas, water, sewer, electricity and local employment." "Boat and skiff haul out fees [support public services/infrastructure]."
Kenai Peninsula and Cook Inlet	"The city charges a hard tax for tour boats and a fish cleaning station fee for people to use the cleaning station." "The city has a 'head' fee for certain size passenger/charter vessels."
Southeast	"Public dock crane use: user fees support general harbor activities." "Boat launch permit fee: user fees support general harbor activities." "A share of the fish tax goes to retire debt on infrastructure." "The charter/sport fish box tax funds go towards fisheries enhancement." "There is a local fish box tax of $10 per box of charter caught fish. 30% [goes] to harbor enterprise fund, 30% [goes] to fisheries enhancement programs and 40% [goes] to city general fund."

Respondents were also asked to report of the social services that are available in their community (Q23). Medical services are accessible to the majority of communities across all regions, however only 50% of Northern Alaska communities reported having access to this service. (Fig. 20, Appendix Table A36). Food banks, publicly subsidized housing, and public libraries were accessible in some communities across all regions. Food banks were most available to Anchorage and Mat-Su (50%) and Kuskokwim River Mouth (50%) communities. Soup kitchens were most available to Kenai Peninsula and Cook Inlet (25%) communities, and job placement services most available to Anchorage and Mat-Su (50%). Publicly subsidized housing and libraries were most available to Southeast communities (70% and 80% respectively). Communities of the Aleutian and Pribilof Islands, Anchorage and Mat-Su, and Kodiak Island did not have a soup kitchen, and Kodiak Island communities also did not have job placement services.

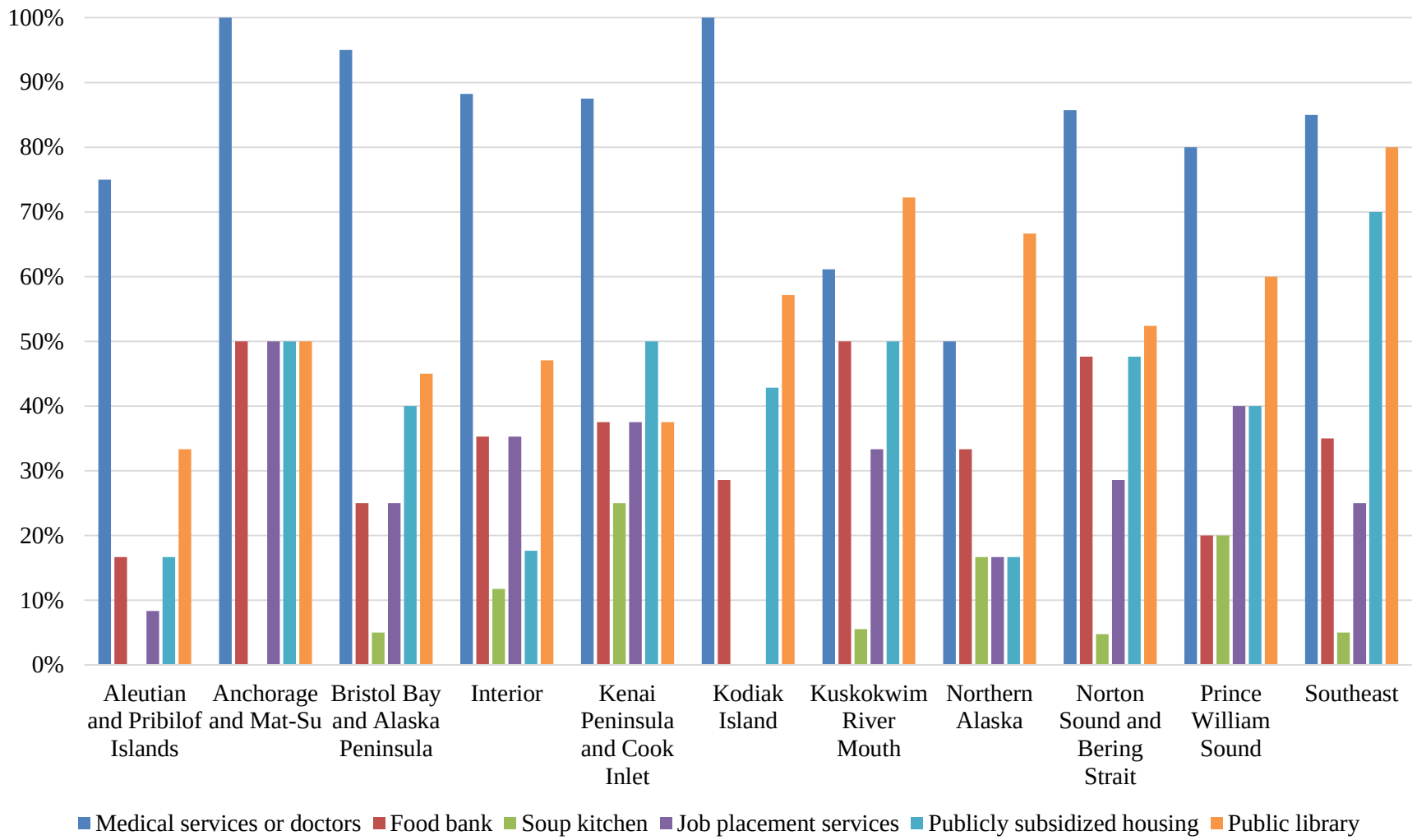


Figure 20. -- Regional breakdown of responses to the following question: Which public social services are available in your community? (Q23).

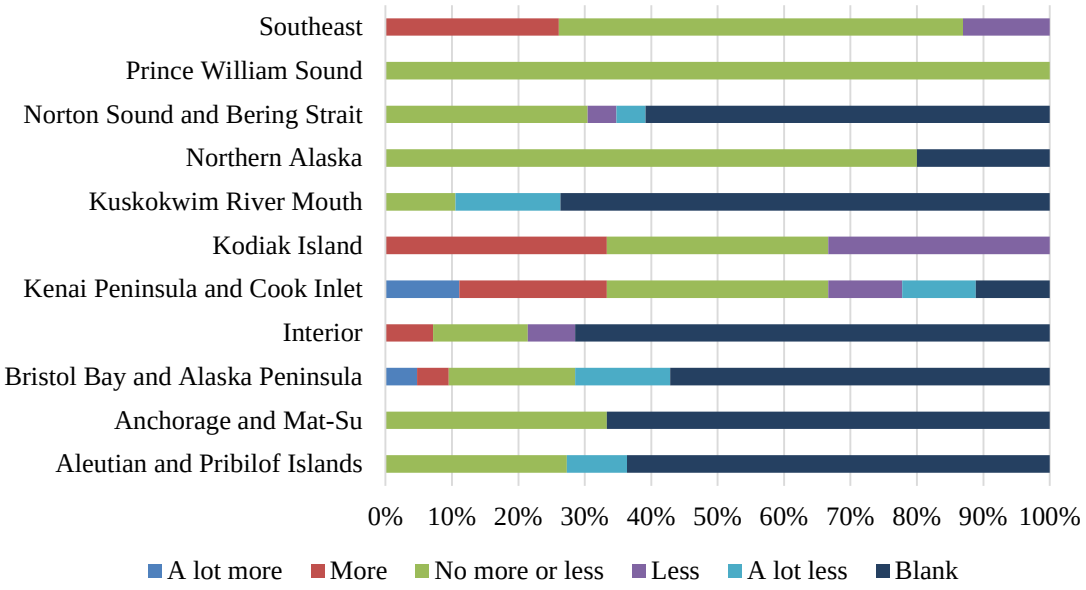
CHANGES IN VESSEL ACTIVITY

Survey question Q16 asked respondents to provide information about changes in boat activity in the community over the last 5 years. The first part of the question presented a Likert scale in which respondents selected a range from a lot more to a lot less for seven categories of vessels. The categories were charter boats/party boats, private pleasure boats, commercial fishing boats, boats less than 35 feet, boats between 35 and 60 feet, boats between 60 and 125 feet, and boats greater than 125 feet. Communities of Kodiak Island (33%), Southeast (26%), and Kenai Peninsula and Cook Inlet (22%) reported more charter boats, and Kenai Peninsula and Cook Inlet (11%) reported a lot more (Fig. 21, Appendix Table A37). All of Prince William Sound communities reported no change in the number of charter boats and 33% of Kodiak Island communities reported there were less. Prince William Sound communities also reported no change in the number of private pleasure boats, whereas 56% of Kenai Peninsula and Cook Inlet and 50% of Kodiak Island reported there were more, and 33% of Anchorage and Mat-Su communities reported there were less. An increase in commercial fishing boats was reported across all regions except for Anchorage and Mat-Su, Interior, and Northern Alaska.

In regard to vessel size classes and vessels smaller than 35 feet, few communities reported there were a lot more boats. Kuskokwim River Mouth communities reported the highest frequency (32%) of this category. Norton Sound and Bering Strait communities reported the highest frequency of more boats (48%) whereas the Aleutian and Pribilof Islands communities did not report of more vessels. Kodiak Island communities reported the highest frequency of no more or less boast (83%), and all communities across regions selected this category. For vessels between 61 and 125 feet, the majority of respondents also reported no more or less, with Kodiak 83% of Island communities selecting this category. Only 10% of Bristol Bay and Alaska Peninsula and 9% of the Aleutian Islands communities reported there were a lot more boats of this size category. Anchorage and Mat-Su and Kuskokwim River Mouth communities reported the highest frequencies of less, or a lot less, boats. In regard to boats larger than 125 feet, few communities reported there were a lot more, or more, boats of this size class. The majority of communities reported there were no more or less, with 83% of Kodiak Island again reporting no change in this category. Thirty-three percent of Kenai Peninsula and Cook Inlet and 22% of Kuskokwim River Mouth communities reported there were less, or a lot less, of this size class respectively.

Respondents were also asked (open-ended) to describe any changes in the presence of the various types of vessels in their community. Example responses for regional groupings are summarized in Table 12. Responses were mixed both across and within regional groupings indicating that changes in the number of boats, and boat activity is dependent upon the specific community and the type of place-based boating and fishery activities. For example, one Kenai Peninsula and Cook Inlet community respondent stated there were less charter fishing boats and another stated there were more. However, responses were consistent in regard to there being fewer, or smaller, boats because of high moorage costs and fishery costs, and increased subsistence fishing due to high cost of living.

A. Charter boats/party boats



B. Private pleasure boats

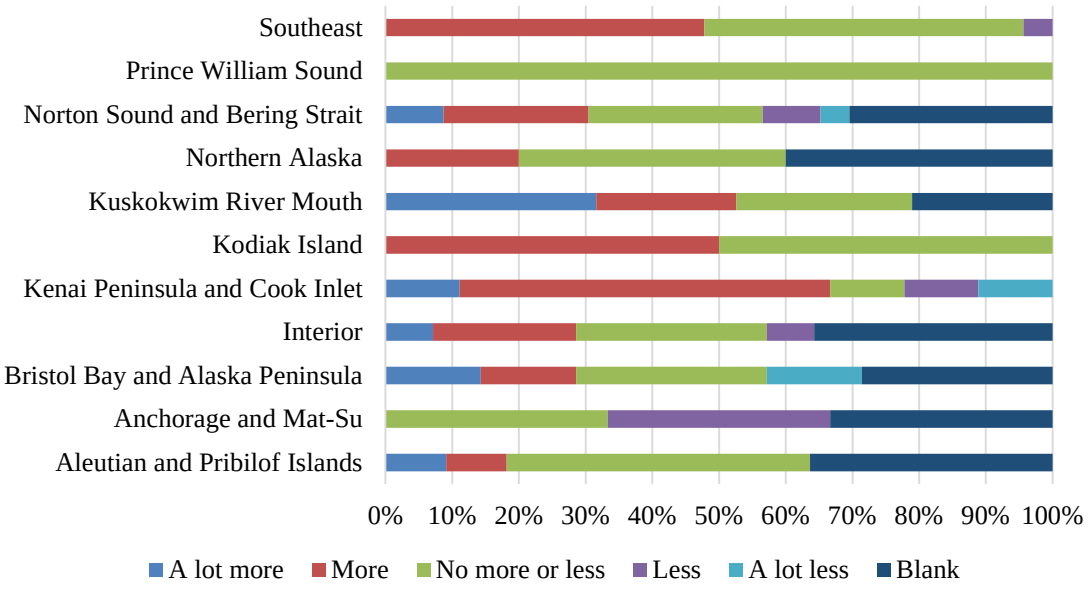
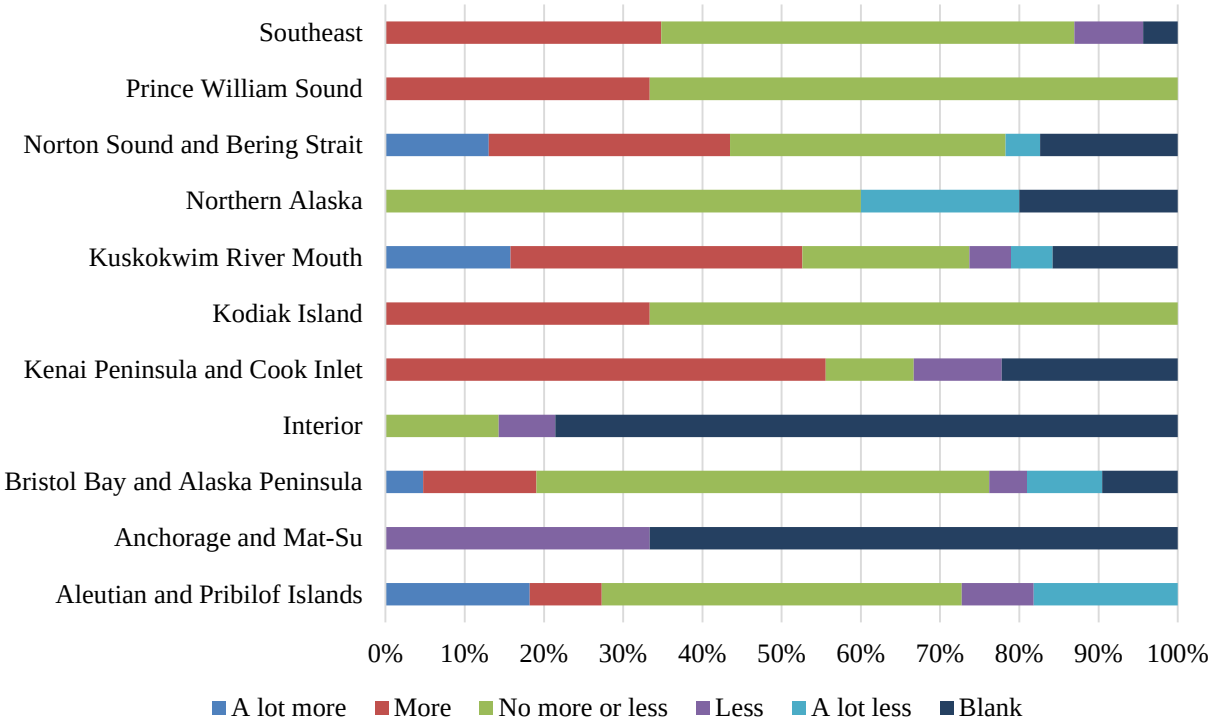


Figure 21. -- Regional breakdown of responses to the following question: For the types of boats listed, would you say there were a lot more, more, no more or less, less, or a lot less boats in your community compared to five years ago? (Q16).

C. Commercial fishing boats



D. Boats shorter than 35 feet

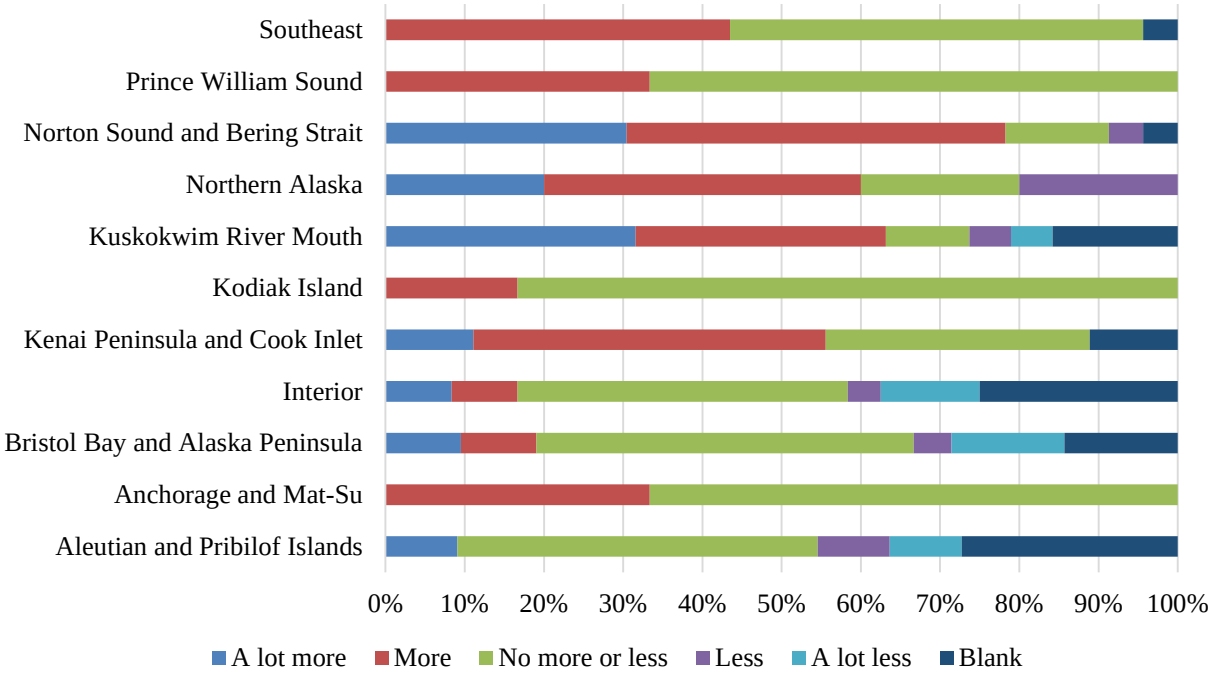
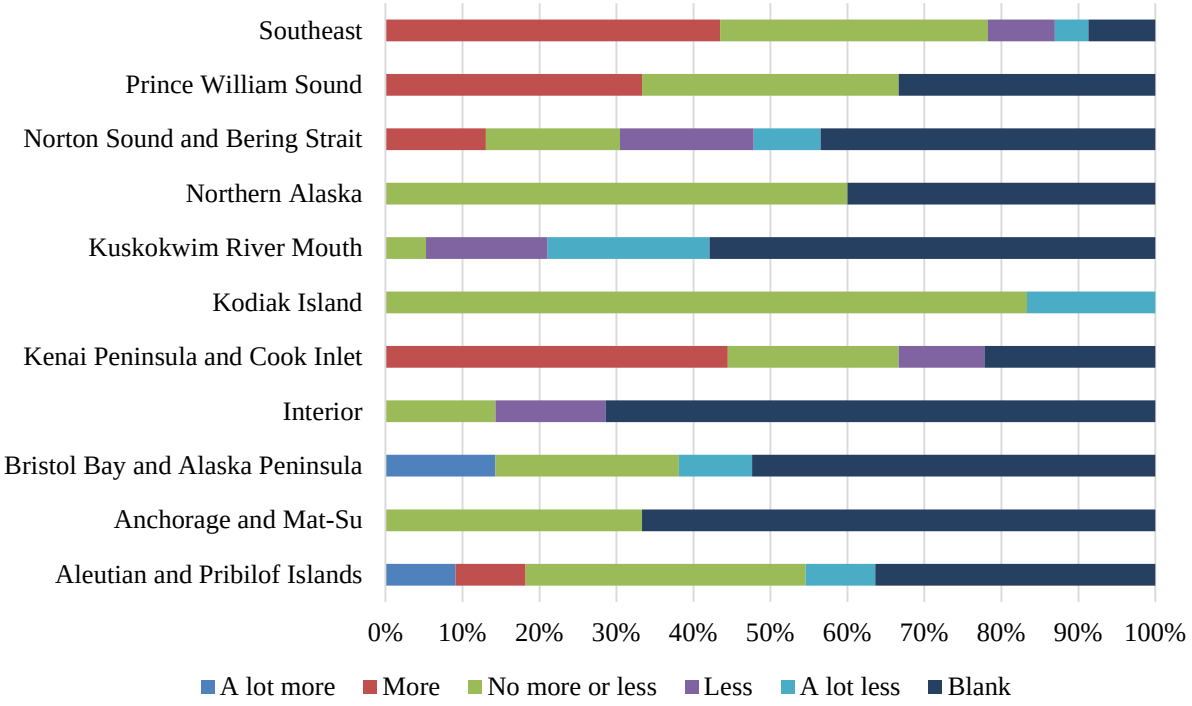


Figure 21. – Cont.

E. Boats between 35 and 60 feet



F. Boats between 61 and 125 feet

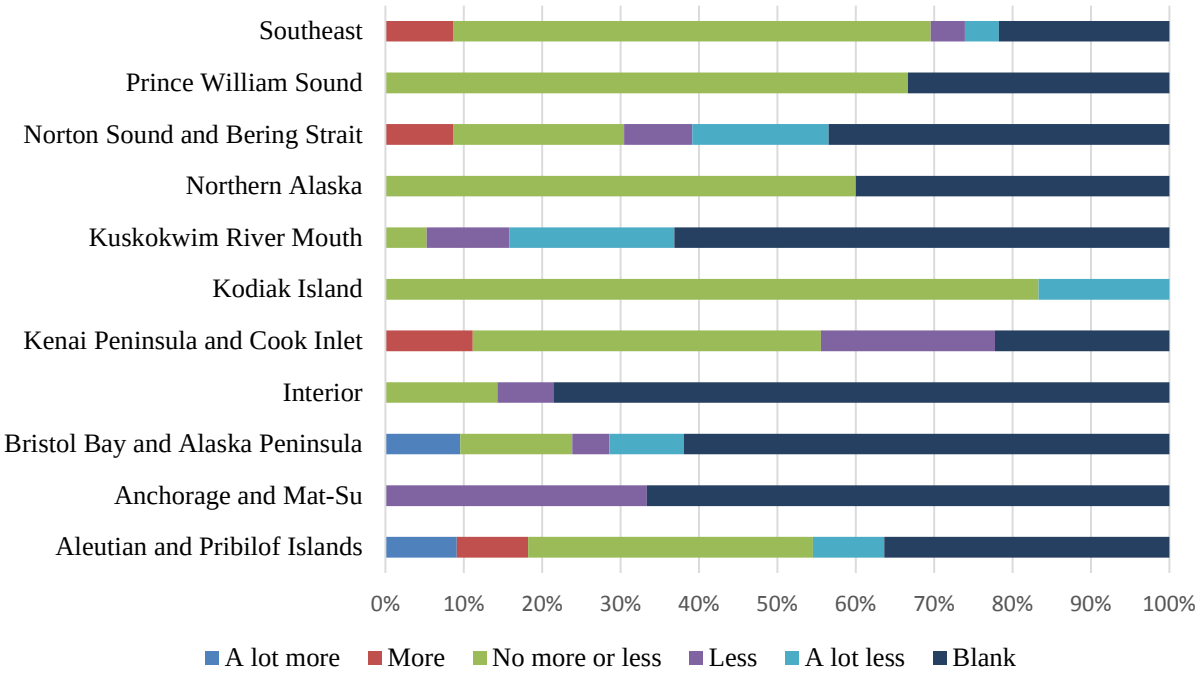


Figure 21. – Cont.

G. Boats longer than 125 feet

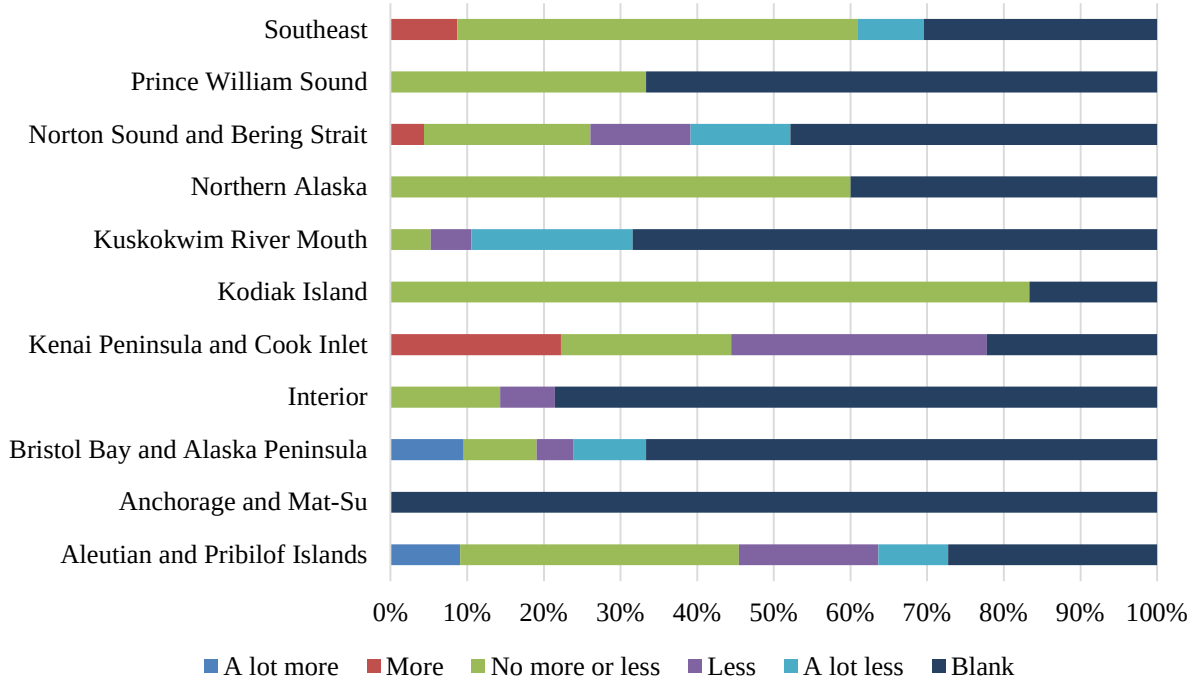


Figure 21. -- Cont.

Table 12. -- Regional breakdown summary of responses to the following question: For any changes you noted in Q16, please describe any changes that you have noticed. (16a).

Region	**Community responses**
Aleutian and Pribilof Islands	"Changes in regulations related to Stellar Sea Lion protections reduced certainty, therefore more vessels transitioned from home-porting to transient status." "There have been pleasure boat increases for sport fishing activities in the area." "The building of False Pass harbor allows for many vessels to moor here."
Anchorage and Mat-Su	"In 2009 there were 34 commercial vessels in Palmer. In 2012 there were 33 according to Alaska Fishery Statistics tables." "The public boat launch in Talkeetna is all but unusable due to lack of water in the boat launch channel. The private boaters dare not use the launch most of the time."
Bristol Bay and Alaska Peninsula	"Salmon prices are up. There are more gillnetters, more tenders, and more lodge boats. There are a lot more boats of all sizes used in fishing industry; guides, pleasure, barges." "The river is lower, thus making it hard for big boats to come into river. We don't have anything here, only subsistence boats and small pleasure boats." "There is not much in way of commercial fishing boats. Now skiffs and outboard motors."

Table 12. -- Cont.

Interior	"Each year private river boats are becoming more popular for fishing and moose hunting. Boat sales are way up." "More people are buying open boats to go subsistence fishing and hunting." "There is no commercial fishing in Ruby. Residents get some fish just for their own use for winter months."
Kenai Peninsula and Cook Inlet	"There are less charter boats due to limited entry [because of] changes in allocation and downturn in the economy." "There has been a lot more charter boats and the commercial boats have less to catch because of that." "Boats are getting bigger. Small recreational boats in Seward are less numerous."
Kodiak Island	"The Charter industry increased slightly and residents are using cabin covered boats 18'-25' over open skiffs used in past." "There are several more commercial fishing boats moored here and more transient commercial boats during closure."
Kuskokwim River Mouth	"Due to increased fuel prices ($8 gallon) residents are switching to smaller boats." "A lot more home owners use aluminum boats that are typically 18' or less and use them for commercial fishing and subsistence use." "There are less commercial fishing boats and more <35' boats in Nunapitchuk."
Northern Alaska	"People use boats for subsistence therefore young families purchase boats and our population has grown." "Commercial fishermen are now elders with limited abilities and younger folks cannot afford to make the trip to Kotzebue and live there." "Our community only subsistence harvests! We do not participate in commercial fishing or tourist economy."
Norton Sound and Bering Strait	"There are more commercial boats for halibut fishing, but based on quota available after CDQ villages acquire the amounts on annual basis. But the majority of boats are used for subsistence and recreational purposes." "Due to increasing cost of living, residents are relying more and more on subsistence activities which places more demand on motorized vehicles. Boat sizes still remain less than 24'. However, higher horse power motors is the current trend." "Commercial salmon and crab fishing has increased along with sport and research vessels." "More families and residents purchased private boats shorter than 35 feet for transportation and subsistence purposes."
Prince William Sound	"There has been change in equipment and upgrading of fleet."
Southeast	"We still have a long waiting list of boats seeking permanent moorage." "There are more ships greater than 125 feet due to more cruise ships, especially the smaller ships between 125 and 200 ft." "Since the increase in moorage fees there are fewer boats over wintering in Sitka. Also fewer locals utilizing year round moorage for smaller pleasure/ sport boats." "There are more charter boats of the 22-28 ft. size class and personal skiffs 14-18 ft."

MANAGEMENT PARTICIPATION

Respondents were given a list of potential avenues through which the community may participate in state and federal fisheries management and they were asked to check the options that applied (Q29). The majority of communities with paid staff members that attend NPFMC or Board of Fish meetings (46%), and with representatives that participate in NPFMC committees or advisory groups (54%) are of the Aleutian and Pribilof Islands. The majority of communities with a representative that sits on regional fisheries advisory boards or ADFG working groups (57%), and representative that participates in Federal Subsistence Board or Regional Advisory Council process (70%) are of the Norton Sound and Bering Strait region. The Kodiak Island region had the highest proportion of communities (57%) that rely upon regional organizations to provide information on fisheries management issues. Few communities reported they financially support research organizations, industry, coalitions or trade associations yet the majority that did are of the Southeast region (41%). The regions with communities that participate in all categories of fishery management are the Aleutian and Pribilof Islands, Kenai Peninsula and Cook Inlet, and Southeast. Half of the communities of Northern Alaska reported they do not participate in resource management.

FISHERIES MANAGEMENT ISSUES

The survey included four open-ended questions (Q30-Q33) asking about fishery management and challenges that communities faced. The response rates were high for all four questions. Responses were grouped into themes that emerged from respondent's answers to each question. The response frequencies presented in this section (Tables 13, 15, 17, and 19) reflect the number of times a statement was made about a particular theme. Respondents may have made statements about multiple themes, or multiple statements about a particular theme, which is expected as some respondents are more expressive than others. This was noted during analysis and the dominant themes presented below, as frequencies, are representative of the responses in the survey. These responses reflect the on-the-ground perspectives of community respondents, which is helpful for informing fishery managers and policy makers of salient community concerns.

Current challenges

The first open-ended question asked about current challenges facing the community's fishing economy (Q30). Response distributions are shown in Table 13 with the regional break-down of responses shown in Table 14 and Figure 23. Across all communities, the highest numbers of responses were in regard to lack of infrastructure and fisheries support (19%), issues with quotas and permits (18%) and management and regulations (15%). The remaining responses were spread across the other themes relatively evenly (Table 13).

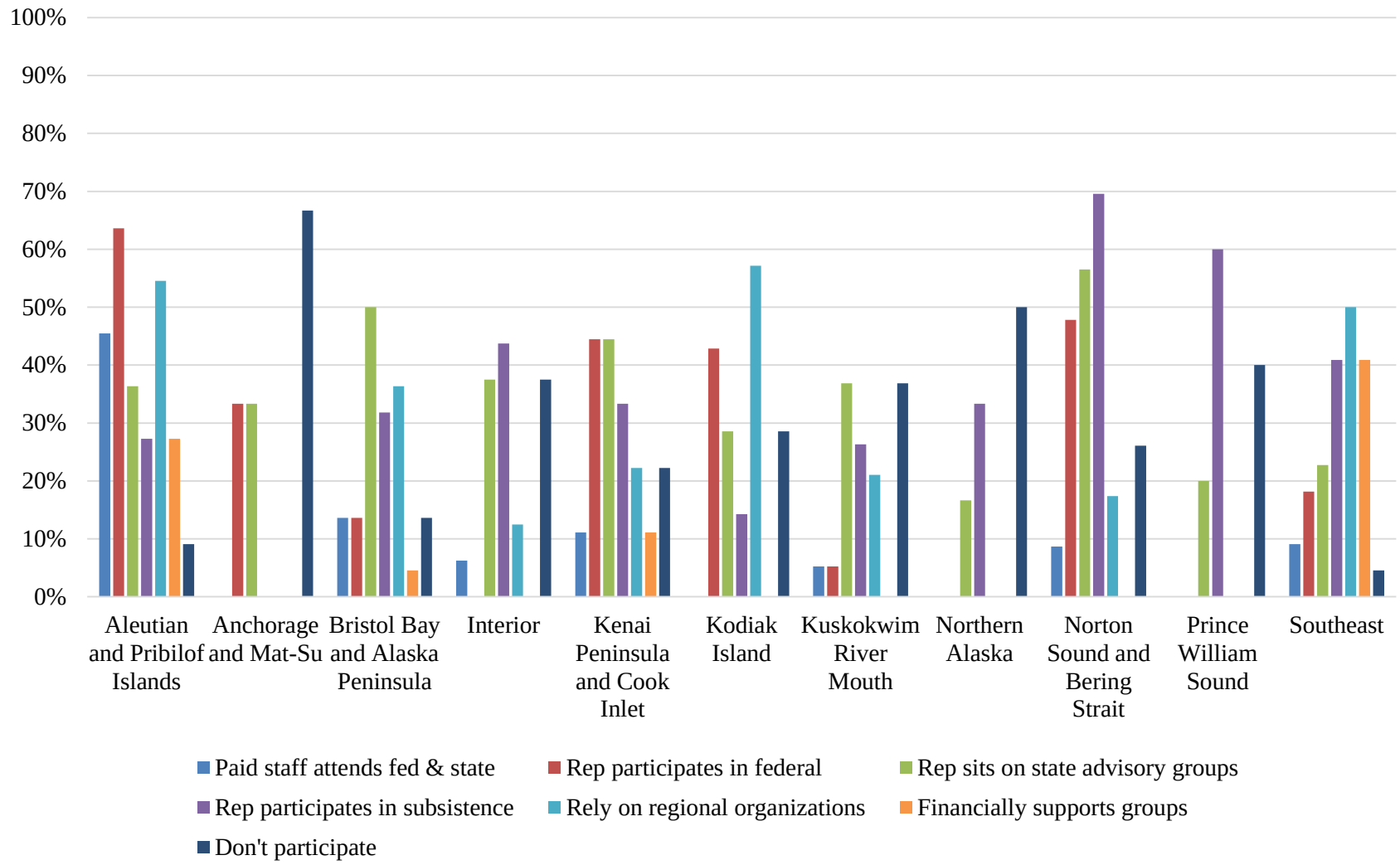


Figure 22. -- Regional breakdown of responses to the following question: Does your community participate in the fisheries management process in Alaska? (Q29).

With responses grouped by region, 50% of Anchorage and Mat-Su, 40% of Aleutian and Pribilof Islands and 36% of Southeast communities made the most statements about lack of infrastructure and fishery support. Example responses include:

> "Transportation is big issue, we have to ship all of our seafood product by either barge or air. Some can be shipped by ferry if space is available. [We need] infrastructure to support growing demand."

> "The remoteness of Atka and lack of fisheries support infrastructure makes it difficult at times."

> "High fees and lack of better fisheries support infrastructure are things that have driven some fisherman away. Also, not having a cannery that does salmon, halibut, cod, or sablefish is not helping any at all."

Communities of Kodiak Island (50%), Kenai Peninsula and Cook Inlet (43%), and Aleutian and Pribilof Islands (40%) made the most comments regarding quotas and permits. Example statements include:

> "The allocation of resources to private entities is hindering the employment opportunities of our youth."

> "Decreasing quotas impact plant operations."

> "The CQE program costs to purchase quota does not pencil out as feasible."

Management and regulations were a concern of 33% of Kodiak Island, 32% of Southeast, and 29% of Kenai Peninsula and Cook Inlet communities as demonstrated in the following quotes:

> "Regulatory issues and general bad fisheries management that has become politically driven rather than scientifically driven."

> "Onerous US Coast Guard regulations, superfluous NMFS vessel observer program, and sea otter predation of clam, sea cucumber, and urchin fisheries."

Northern Alaska (40%) and Kuskokwim River Mouth (38%) communities made the most comments about subsistence fishing. For example, they expressed:

> "Our subsistence fishing economy is hindered by the limited amount of freezer space that are privately owned by local fishers. A community cold storage facility with freeze locker spaces for rent may be a possible [way] to this. More fish could be processed and preserved frozen or canned/jarred."

> "Subsistence fishing regulations are an issue that is affecting our community negatively."

Table 13. -- Distribution of responses to the following question: In your opinion, what are the current challenges for the portion of your community's economy that is based on fishing? (Q30).

Response themes	Response frequency	Percent of item respondents
Cost of supplies	17	14.05%
Decline in stocks, catch	13	10.74%
Economic stability	11	9.09%
Environmental issues	10	8.26%
Fishing opportunities, access	14	11.57%
Infrastructure, support	23	19.01%
Management, regulations	18	14.88%
Quotas and permits	22	18.18%
Sport fishing	6	4.96%
Subsistence fishing	13	10.74%
Total item respondents	121	

Table 14. -- Regional breakdown of responses to the following question: In your opinion, what are the current challenges for the portion of your community's economy that is based on fishing? (Q30).

Response themes	Aleutian and Pribilof Islands	Anchorage and Mat-Su	Bristol Bay and Alaska Peninsula	Interior	Kenai Peninsula and Cook Inlet	Kodiak Island	Kusko-kwim River Mouth	Northern Alaska	Norton Sound and Bering Strait	Prince William Sound	Southeast
Cost of supplies	0.00%	0.00%	11.76%	7.14%	28.57%	0.00%	7.69%	0.00%	22.73%	33.33%	22.73%
Decline in stocks, catch	0.00%	0.00%	0.00%	14.29%	0.00%	0.00%	15.38%	0.00%	22.73%	33.33%	13.64%
Economic stability	30.00%	0.00%	23.53%	0.00%	0.00%	0.00%	7.69%	0.00%	9.09%	0.00%	4.55%
Environmental issues	0.00%	50.00%	0.00%	0.00%	28.57%	0.00%	7.69%	0.00%	18.18%	0.00%	9.09%
Fishing opportunities, access	0.00%	0.00%	0.00%	21.43%	0.00%	33.33%	23.08%	0.00%	22.73%	0.00%	4.55%
Infrastructure, support	40.00%	50.00%	23.53%	7.14%	28.57%	0.00%	0.00%	20.00%	9.09%	0.00%	36.36%
Management, regulations	20.00%	0.00%	5.88%	7.14%	28.57%	33.33%	0.00%	0.00%	13.64%	0.00%	31.82%
Quotas and permits	40.00%	0.00%	29.41%	0.00%	42.86%	50.00%	15.38%	0.00%	4.55%	33.33%	13.64%
Sport fishing	0.00%	0.00%	0.00%	0.00%	0.00%	16.67%	7.69%	0.00%	0.00%	33.33%	13.64%
Subsistence fishing	0.00%	0.00%	5.88%	14.29%	0.00%	16.67%	38.46%	40.00%	9.09%	0.00%	0.00%
Total item respondents	10	2	17	14	7	6	13	5	22	3	22

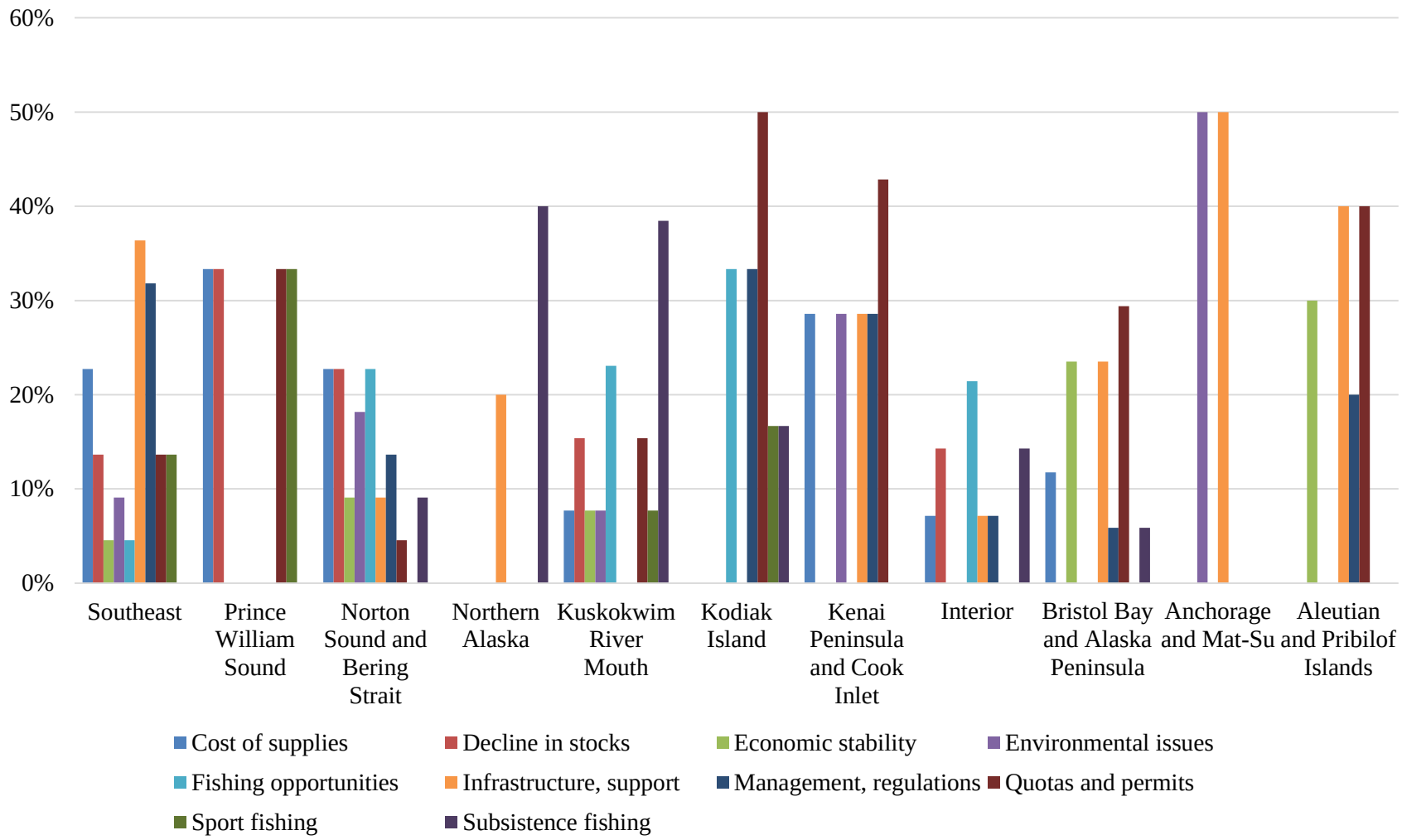


Figure 23. -- Regional breakdown of responses to the following question: In your opinion, what are the current challenges for the portion of your community's economy that is based on fishing? (Q30).

Effects of fisheries policies

The second open-ended question asked community respondents to describe any observed effects of fisheries policies or management actions on the community (Q31). Responses were grouped into 10 themes based on the type of fisheries policy or management action and other local effects in the community. Management and regulations was cited by all regions (37%) as having had observed effects on the community (Tables 15-16). The next most cited concern involved quotas and allocations (17%) followed by subsistence fishing (16%).

Kuskokwim River Mouth (56%), Norton Sound and Bering Strait (43%), and Bristol Bay and Alaska Peninsula (42%) communities commented most about management and regulations. Example statements include:

> "We need Native Alaskans to participate and get involved with policy making and management actions, who known about the area resources, versus putting outside [people] from lower the 48 who do not know about our areas."

> "The closing of subsistence salmon fishing on the Kuskokwim River and the limiting of opening days for subsistence fishing. The community of Nunapitchuk does not appreciate having open days to fish late in the spring or summer because late summer days have more rain and there is flies/maggot infestation in our drying Salmon fish. I've seen the Chinook salmon restriction hurting our subsistence way of life. Small catches of small fish and very few big catches. It would be good if they go with larger..."

> "Yukon River villages issued a moratorium for the harvest of Chinook Salmon for local consumption. While this is a positive step towards increasing the stock for future generations, local people had to harvest other species of fish. Fish and game also placed restrictions on the harvest of Chinook salmon with schedules and gillnet size, and release any chinook salmon caught. Effects were less fish caught, more money spend on going to the grocery store."

As discernable in the above quotes, concerns about subsistence fishing are related to the indirect effects of fishery regulations on subsistence fishing, and direct effects of subsistence fishing regulations. Both are affecting community resident's ability to subsistence fish and their subsistence traditions. Communities that had the highest frequency of responses regarding subsistence fishing include those of Prince William Sound (40%), Interior (31%), and Kuskokwim River Mouth (28%). Example responses include:

> "Commercial and regional residents have been upset at the King Salmon subsistence closures. As Bethel approaches the 6000 federal subsistence ceiling, lifelong residents are concerned that the federal government will no longer recognize them in terms of subsistence priority. Because of outsiders moving in, we will suffer in our way of living off the land and sea."

> "The negative side we have seen is that there was no openings for both commercial and subsistence fishing this summer, but were allowed to set nets in

the river but not on the Kuskokwim which had a great effect on our lifestyle of gathering subsistence food. Should that happen again in the future, I suggest that the closures are for all regions up and down Kuskokwim and Yukon Rivers…"

"The current chumming regulation, Nondalton is a subsistence community. We put back our scraps from fish, back to where we got it from. Which is back into the water. The current chumming regulation goes against what we are used to doing. It should only reflect on outsiders from lodges."

Effects of quotas and allocations (including catch shares) were cited by several respondent communities as a response to management actions that produced observed effects in the community. Kenai Peninsula and Cook Inlet communities had the highest response frequency (38%) followed by Kodiak (33%), Prince William Sound (33%), and Southeast (33%). Example quotes are below.

"Homer is heavily dependent upon the halibut fisheries for both commercial and recreation. Homer has been the #1 commercial port in Alaska and it also has a very large charter fleet. Both are very large sections of the local economy and most vessels are locally owned and operated. Reductions in halibut quotas and allocation shifts have seriously hurt both sections and the local economy."

"The halibut IFQ program has caused a lot of lost revenue to the residents of our community. Also since its inception it has become increasingly difficult to get halibut for subsistence use. Halibut fisheries have changed from 10 to 12 vessels in the 80's to only 2 currently."

"Limited entry fisheries management, including IFQ's while largely seen as a means toward long term fisheries sustainability, has at the same time reduced overall economic activity in Elfin Cove. This is true also true for the recent changes in halibut sport fishing regulations requiring halibut charter permits and new size requirements. The recent changes in the Pacific Salmon Treaty reduced Alaska's portion of King Salmon, for both commercial and sport fishing business."

Table 15. -- Distribution of responses to the following question: Please describe the effects you've seen of fisheries policies or management actions, if any, on your community (Q31).

Response themes	Response frequency	Percent of item respondents
Bycatch	5	4.27%
Decline in stocks, catch	12	10.26%
Environmental issues	4	3.42%
Gear regulations	10	8.55%
Management, regulations	43	36.75%
Fishing opportunities, access	12	10.26%
Quotas, allocation	20	17.09%
Community Development Quotas	7	5.98%
Sport fishing	4	3.42%
Subsistence fishing	19	16.24%
Total item respondents	117	

Table 16. -- Regional breakdown of responses to the following question: Please describe the effects you've seen of fisheries policies or management actions, if any, on your community (Q31).

Response themes	Aleutian and Pribilof Islands	Anchorage and Mat-Su	Bristol Bay and Alaska Peninsula	Interior	Kenai Peninsula and Cook Inlet	Kodiak Island	Kusko-kwim River Mouth	Northern Alaska	Norton Sound and Bering Strait	Prince William Sound	Southeast
Bycatch	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	23.81%	0.00%	0.00%
Decline in stocks, catch	10.00%	33.33%	25.00%	0.00%	0.00%	16.67%	5.56%	0.00%	9.52%	40.00%	6.67%
Environmental issues	10.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.76%	20.00%	6.67%
Gear regulations	0.00%	0.00%	0.00%	23.08%	0.00%	0.00%	16.67%	0.00%	9.52%	20.00%	6.67%
Management, regulations	20.00%	33.33%	41.67%	38.46%	25.00%	16.67%	55.56%	16.67%	42.86%	40.00%	33.33%
Fishing opportunities, access	0.00%	33.33%	0.00%	0.00%	0.00%	0.00%	11.11%	0.00%	28.57%	0.00%	20.00%
Quotas, allocation	20.00%	33.33%	16.67%	7.69%	37.50%	33.33%	11.11%	0.00%	4.76%	20.00%	33.33%
Community Development Quotas	10.00%	0.00%	0.00%	0.00%	0.00%	16.67%	11.11%	0.00%	14.29%	0.00%	0.00%
Sport fishing	0.00%	0.00%	0.00%	0.00%	12.50%	0.00%	0.00%	0.00%	0.00%	20.00%	13.33%
Subsistence fishing	0.00%	0.00%	8.33%	30.77%	0.00%	16.67%	27.78%	0.00%	19.05%	40.00%	13.33%
Total item respondents	10	3	12	13	8	6	18	6	21	5	15

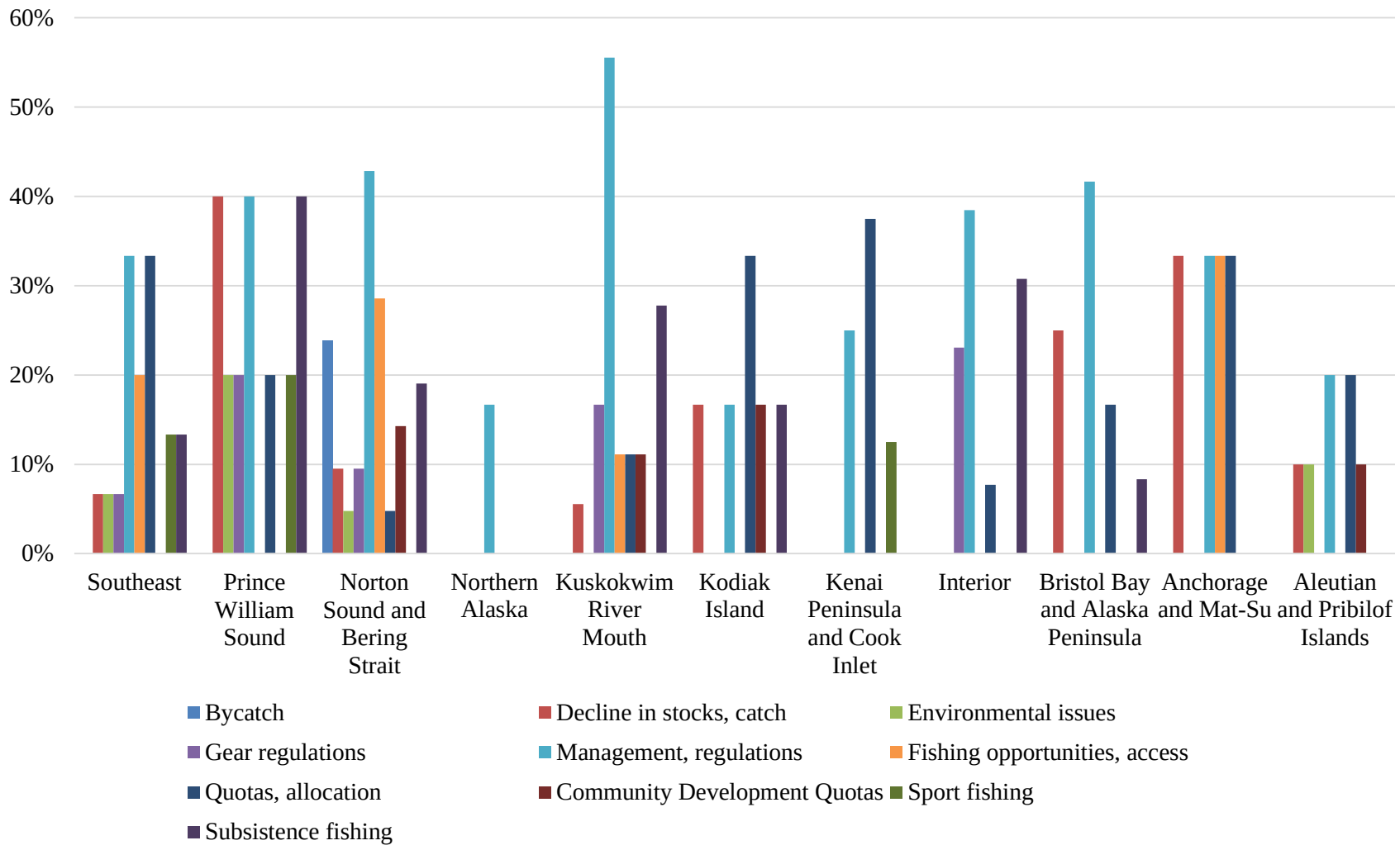


Figure 24. -- Regional breakdown of responses to the following question: Please describe the effects you've seen of fisheries policies or management actions, if any, on your community (Q31).

Past and current management actions affecting communities

Communities were asked to describe a past or current fisheries policy or management action that affected their community the most (Q32). The responses were organized into categories of management actions, shown below in Table 17. The most cited type of management decision was fishery regulations and season openings and closures (41%). Subsistence regulations (20%) and quotas and allocations (14%) were also dominant themes. Responses frequency distribution by region is shown in Table 18 and Figure 25. Communities with the highest frequencies of fishery regulations and seasons were of Anchorage and Mat-Su (100%), Interior (62%), and Southeast (50%) regions. Community responses concerning fishery regulations and seasons include:

> "Fish and game restrictions, certain days of the week you were allowed to fish, but it was not always when the Chinook salmon run was outside the village river. Gillnet restrictions, not all people can afford a 6" mesh net gear. Having to release any chinook salmon caught in your fishing gear is telling us to throw our traditional food away, what we've harvested since time immoral. The policies caused less fish to be caught. Resulted in less food put away for winter consumption."

> "High salmon catch by the commercial fishing fleet results in low subsistence harvests locally. Opened salmon commercial fisheries late into the season affecting local river escapements."

> "Sport fishing for grayling is the #1 fishery in Fairbanks. The Alaska Dept. of Fish and Game made new regulations changing this to catch and release only. The fish population has rebounded well, but residents are frustrated now that there are tons of fish and they can't keep any. Fish and Game does not intend to reverse the regulation anytime soon."

Kuskokwim River Mouth respondents commented the most (35%) about subsistence regulation where closures are problematic, as one respondent stated: "Akiachak is completely effected by closure of subsistence fishing; residents did not quite understand why they could not fish, especially elders who have had no problem fishing in the past. They were confused." Other responses include:

> "Providing rural status for residents to be involved in the subsistence halibut fishery helps keep the village fed. We have many older folks here who rely on seafood produced by the younger generation."

> "Reduction and or the closure on subsistence harvest of the chinook. Chinook provided for food security and is the traditional and customary dietary staple of our people."

As with the previous survey questions, quotas and allocations were a concern of respondents, particularly of Aleutian and Pribilof Islands (25%), Kenai Peninsula and Cook Inlet (25%), and (Norton Sound and Bering Strait (23%) regions. Example statements include:

"Negative, is charter halibut license limitation. Local permits being sold. Big lodge buying up permits and hard to see trophy halibut hanging without being properly cared for when it's hard to catch a subsistence halibut."

"Limited entry to all fisheries has had a negative effect on our community."

Table 17. -- Distribution of responses to the following question: Which past or current fisheries policy or management action affected your community the most? (Q32).

Response themes	Response frequency	Percent of item respondents
Bycatch	3	2.46%
Gear regulations	9	7.38%
Fishery observers	2	1.64%
Fishery regulations, seasons	50	40.98%
Community Development Quotas	7	5.74%
IFQ	10	8.20%
Pacific Salmon Treaty	3	2.46%
Quotas, allocations	17	13.93%
Subsistence regulations	24	19.67%
Total item respondents	122	

Table 18. -- Regional breakdown of responses to the following question: Which past or current fisheries policy or management action affected your community the most? (Q32).

Response themes	Aleutian and Pribilof Islands	Anchorage and Mat-Su	Bristol Bay and Alaska Peninsula	Interior	Kenai Peninsula and Cook Inlet	Kodiak Island	Kusko-kwim River Mouth	Northern Alaska	Norton Sound and Bering Strait	Prince William Sound	Southeast
Bycatch	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	13.64%	0.00%	0.00%
Gear regulations	8.33%	0.00%	7.14%	0.00%	0.00%	0.00%	23.53%	0.00%	4.55%	0.00%	0.00%
Fishery observers	0.00%	0.00%	0.00%	0.00%	12.50%	0.00%	0.00%	0.00%	0.00%	0.00%	5.00%
Fishery regulations, seasons	33.33%	100.00%	35.71%	61.54%	25.00%	28.57%	47.06%	0.00%	36.36%	40.00%	50.00%
Community Development Quotas	0.00%	0.00%	0.00%	30.77%	0.00%	0.00%	17.65%	0.00%	9.09%	0.00%	0.00%
IFQ	8.33%	0.00%	0.00%	0.00%	12.50%	57.14%	0.00%	0.00%	0.00%	0.00%	20.00%
Pacific Salmon Treaty	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.55%	0.00%	10.00%
Quotas, allocations	25.00%	0.00%	21.43%	7.69%	25.00%	0.00%	5.88%	0.00%	22.73%	20.00%	5.00%
Subsistence regulations	0.00%	0.00%	7.14%	15.38%	12.50%	0.00%	35.29%	0.00%	18.18%	0.00%	15.00%
Total item respondents	12	1	14	13	8	7	17	3	22	5	20

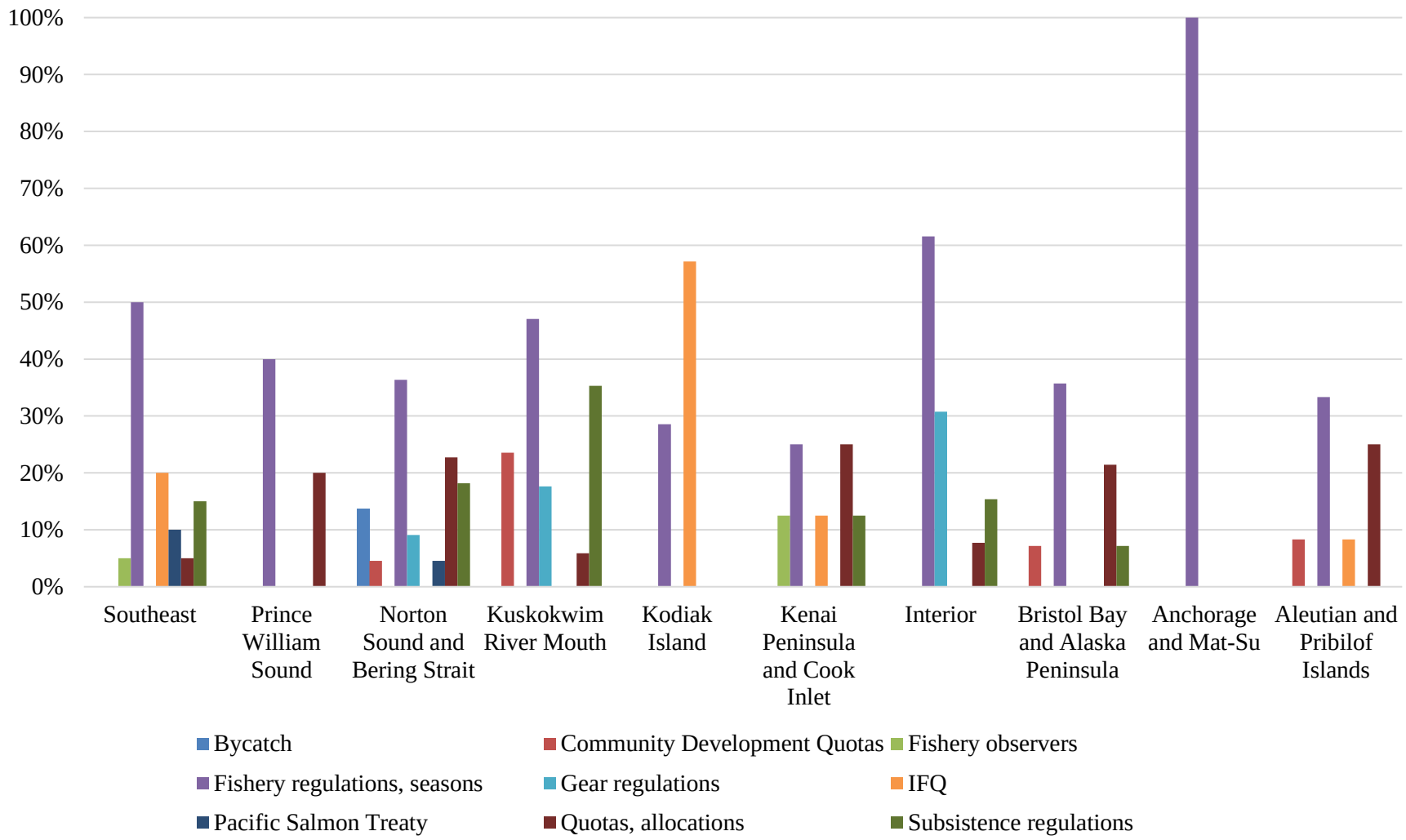


Figure 25. -- Regional breakdown of responses to the following question: Which past or current fisheries policy or management action affected your community the most? (Q32).

Future fisheries management issues

The final open-ended question presented to respondents asked what potential future fisheries management action concerned the community the most (Q33). As with the previous questions, fishery regulations and seasons (30%) were most commented on by community respondents, followed by quotas and allocations (16%), and management decisions (15%) (Table 19).

Fishery regulations and seasons were of most concern to Interior (60%), Bristol Bay and Alaska Peninsula (50%), and Southeast (40%) communities as shown in Table 20 and Fig. 26. Responses included:

"Pilot Point residents are concerned about "Area M" interpretation of our sockeye resources. All of our chinook, coho and sockeye runs have been decimated since the board of fish opened order Port Heiden for commercial Salmon fishing during the months of July and August."

"Board of Fish action to intervene in ADFG management of herring state wide- The Board of Fish appears to be implementing regulations that will stop herring fisheries, which will significantly affect Sitka. This has continued with the restriction of harvest area at 2012 Board of Fish. Increasing the harvest rate on herring populations from a max of 10% to a max of 20%. Also Pacific Salmon Treaty renegotiations with Canada and Washington State and the reduction of the Alaska quota for King Salmon in troll fisheries."

"The Alaska board of fisheries opened the whale pass to commercial area fishing over the objections of the local community. Commercial area fishing has depleted the local Dungeness crab stocks with negative effects on subsistence activities. The major concern is the board's lack of concern for the interest in, and the needs of, local residents (communities)."

Quotas and allocations was most cited by Kenai Peninsula (71%). Statements are best exemplified by the quote below:

"CVRF quotas compared to the other five halibut fisheries. Our fear is that these severe restrictions may continue into the future and become established as 'normal' guidelines for the King Salmon run. Financial burden is put on residents in a community where our commercial fishery supports our subsistence activities. If we have to spend extra monies to protect the king salmon run then other activities suffer. For example, if the fisherman have to pay extra people to allow king salmon escapement, then then that is so much more money that is not available for other activities. Kaltag also worries that actions by the North Pacific Management Council may not curtail by-catch of king salmon if the run rebounds." Finally, several respondents were concerned with management decisions, particularly those of Anchorage and Mat-Su (100%), Kuskokwim River Mouth (35%) and Kodiak Island (29%). Statements regarding management include:

"With the management of fish and game our concern is the total depletion of Karluk's fishery as we know it now. The attitude of the management is the worst it has ever been. Again, total disregard for Karluk community concerns. Karluk used to have the largest fish run around. Not the case any longer."

"If CURF BOD'S do not take the decision making situation away from Morgan Crowe then the local fisherman, those who do not have any jobs year long, will suffer more, especially from heat and hunger!!"

"Not having a strong representation on the NOAA board, corporate America should not be allowed to buy up all permits. Experimenting with farm fishing is deadly to natural run. The Marine Mammal Protection Act- it is stupid to not allow native people to sell the pelts. Sea otters have wiped out huge areas of clams, sea urchins etc."

Table 19. -- Distribution of responses to the following question: What, if any, potential future fisheries policy or management action concerns your community the most? (Q33).

Response themes	Response frequency	Percent of item respondents
Bycatch	8	7.14%
Decline in stocks	8	7.14%
Environmental issues	5	4.46%
Fishery regulations, seasons	34	30.36%
Management decisions	17	15.18%
CDQs	4	3.57%
Quotas, allocations	18	16.07%
Subsistence fishing	13	11.61%
Total item respondents	112	

Table 20. -- Regional breakdown of responses to the following question: What, if any, potential future fisheries policy or management action concerns your community the most? (Q33).

Response themes	Aleutian and Pribilof Islands	Anchorage and Mat-Su	Bristol Bay and Alaska Peninsula	Interior	Kenai Peninsula and Cook Inlet	Kodiak Island	Kusko-kwim River Mouth	Northern Alaska	Norton Sound and Bering Strait	Prince William Sound	Southeast
Bycatch	0.00%	0.00%	0.00%	0.00%	0.00%	28.57%	5.88%	0.00%	19.05%	0.00%	6.67%
Decline in stocks	0.00%	0.00%	8.33%	0.00%	0.00%	14.29%	0.00%	0.00%	14.29%	20.00%	13.33%
Environmental issues	0.00%	0.00%	0.00%	10.00%	0.00%	0.00%	0.00%	0.00%	14.29%	0.00%	6.67%
Fishery regulations, seasons	18.18%	0.00%	50.00%	60.00%	0.00%	14.29%	17.65%	16.67%	38.10%	20.00%	40.00%
Management decisions	9.09%	100.00%	0.00%	10.00%	14.29%	28.57%	35.29%	0.00%	14.29%	20.00%	6.67%
Community Development Quotas	0.00%	0.00%	8.33%	0.00%	0.00%	0.00%	11.76%	0.00%	4.76%	0.00%	0.00%
Quotas, allocations	18.18%	0.00%	8.33%	0.00%	71.43%	28.57%	0.00%	16.67%	19.05%	0.00%	20.00%
Subsistence fishing	0.00%	0.00%	8.33%	10.00%	0.00%	0.00%	17.65%	16.67%	19.05%	40.00%	6.67%
Total item respondents	11	1	12	10	7	7	17	6	21	5	15

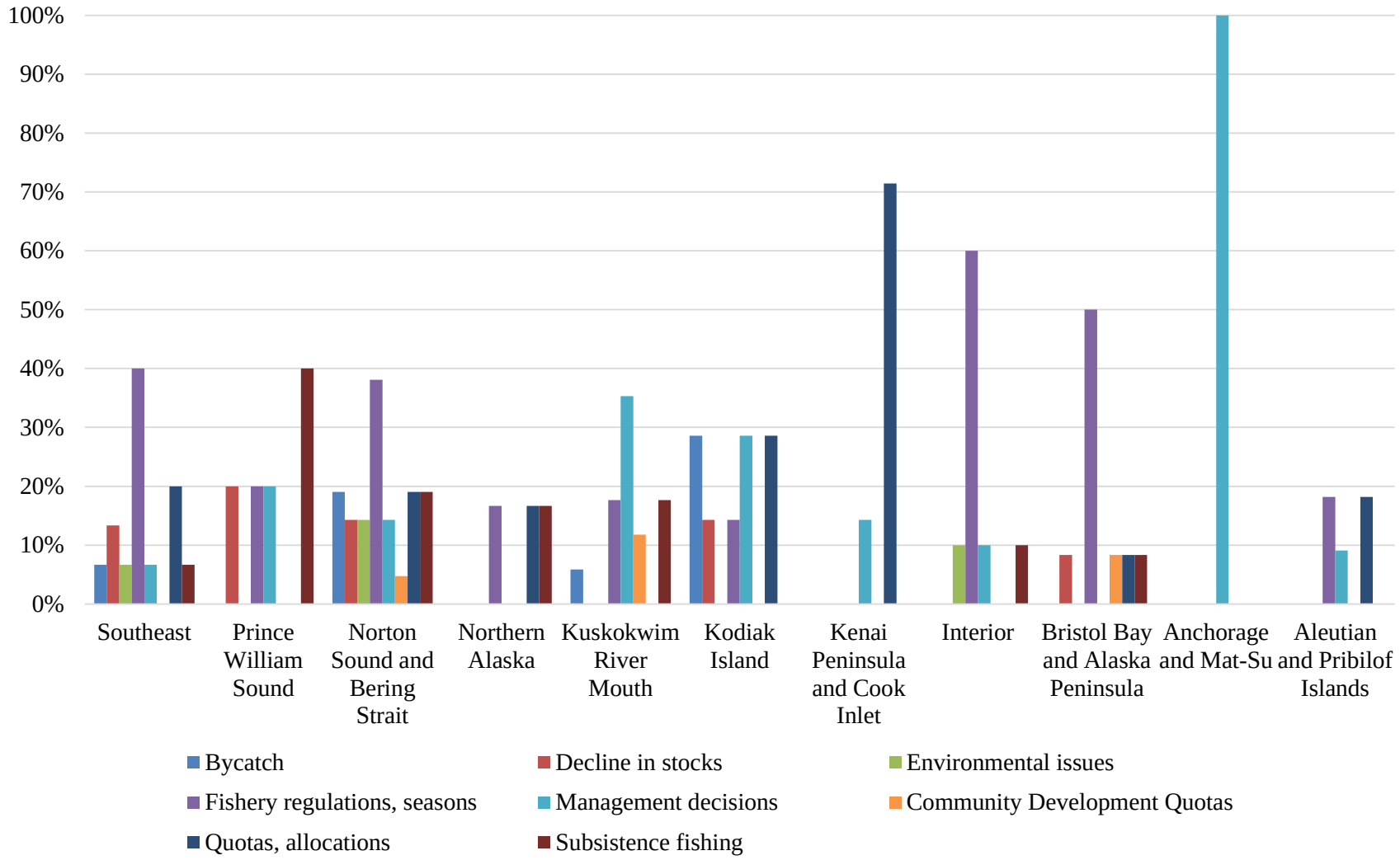


Figure 26. -- Regional breakdown of responses to the following question: What, if any, potential future fisheries policy or management action concerns your community the most? (Q33).

SOCIAL NETWORK ANALYSIS

Five questions (Q6-Q9, and Q22) of the survey were intended to capture the social networks of Alaskan fishing communities, relative to their socio-economic and cultural relationships. Social network analysis is a method for undertanding relations and connections between entities (individuals or communities). We focus on in-degree centrality and network centralization to determine what the major hubs are for accessing resources in Alaska. As explained earlier in this report, degree centrality is a measure of the structural importance of entities in a network. In this case, in-degree centrality was examined which measures how many times a particular community (node) was nominated by other communities (nodes). Network centralization is the measure of inequality of the network and the higher the network centralization, the higher level of inequality in the network. More specifically, a network in which a community has, or few communities have, many incoming network connections with other communities has high network centralization (homogenous), whereas a network with connections that are more evenly distributed has low network centralization. There are two tables in this section for each network analysis; one displays response rates, and the other includes the community-level mean, standard deviation, minimum and maximum, in-degree centrality, and network centralization for each network. These network centrality measures are the output of centrality analysis from UCINET software. Sociograms were also created to visually represent these relationships. The in-degree centrality measures for the top ten communities for each network is summarized in Appendix C.

Question six asked respondents how their communities were interelated with other communities in respect to sharing fishing information, public services, traditional knowledge, resources, and culture. Table 21 contains the regional break-down of item response rates for this question. Q6 is divided into six categories (6a-6f). Of these categories, sharing professional services had the highest in-degree centrality of the question's sub-sections (5.4%) as shown in Table 22. Figures 28-33 illustrate the social networks for each subsection of Q6. Communities were sized by in-degree centrality (the number of times they were nominated) for the type of sharing of Q6a-Q6f and were assigned different colors based on regional grouping. Note that this is how all social network diagrams are presented. Figure 27 is the legend for interpreting the social diagrams based on regional color groupings.

Figure 27. -- Legend of main regional groupings in reference to social network diagrams.

First, for the question asking about sharing fisheries information (6a), the total number of communities (nodes) nominated was 228. As shown in Figure 28, only the Northern Alaska region does not share fishery information with other regions whereas Interior, Kuskokwim River Mouth and Norton Sound and Bering Strait communities have the most out-of-region ties. In-degree network centralization was 3.98% (Table 22) and Anchorage (11), Dillingham (10), Juneau (9), and Craig (9) had the highest in-degree centrality (Appendix Table C1). Overall, fishery information is accessible and shared mainly within region as there are few out-of-region community ties.

The social network diagram for question 6b (share general public services) is shown in Figure 29 and is similar to that of Q6a. Northern Alaska did not share any out-of-region ties, whereas all other regions had at least one out-of-region tie. A total of 253 communities were nominated and in-degree network centralization was low at 1.76% (Table 22). Anchorage had the highest in-degree centrality (10) followed by Juneau (8) and Dillingham (7). Many communities from seven other regions listed Anchorage as a site for sharing public services, however, most ties were within region suggesting that public services are mainly accessed within regions.

Table 21. -- Distribution of responses to the following question: Please list up to 5 communities that residents interact with the most and how residents interact with them (Q6).

Region	Item response	Item response rate
Aleutian and Pribilof Islands	10	83.33%
Anchorage and Mat-Su	4	100.00%
Bristol Bay and Alaska Peninsula	23	100.00%
Interior	17	100.00%
Kenai Peninsula and Cook Inlet	8	88.89%
Kodiak Island	6	85.71%
Kuskokwim River Mouth	19	100.00%
Northern Alaska	4	66.67%
Norton Sound and Bering Strait	22	95.65%
Prince William Sound	4	80.00%
Southeast	22	95.65%
Total	139	

Network centralization for sharing traditional knowledge (Q6c) was the lowest within this question (1%) and there were 257 community nominations. Sitka and Crooked Creek had the highest in-degree centrality (7 nominations each). Figure 30 shows that traditional knowledge is shared across all regional groupings; however, the Southeast, Interior, Prince William Sound, and Norton Sound and Bering Strait regions had the highest in-degree centrality. This network is very dense in contrast to Q6a and Q6b above. The network in-degree centrality is low as the networks are more dispersed across many communities.

The question asking about sharing professional services had 255 community nominations and had the highest network centralization (5.4%) as mentioned earlier, with Anchorage (15), Ketchikan (11), and Dillingham (10) being social hubs for sharing professional services. As Figure 31 demonstrates the degree centrality is higher as there are several star-shaped sub-

networks with highly nominated communities, or nodes. As explained earlier, communities at the perimeter of star-shaped networks are at a disadvantage because they have few options for meeting their needs; in this case accessing professional business services.

The sharing resources question (Q6e) also had 255 nominations and network centralization was 2.3% with Anchorage being the main hub (13) followed by Craig (9) and Ketchikan (8). Resources are mainly accessed and shared within region as was the case with sharing fishery information. There were few out of region ties with other communities and several within community sub-networks.

Finally, there were 253 community nominations for share culture and network centralization was 2.5% with Anchorage again being the hub with 14 nominations (Figure 32). The social networks for sharing culture were somewhat dispersed across regions but there were more isolated subnetworks within the Kodiak, Northern Alaska, and Aleutian and Pribilof Island communities as was the case with sharing resources.

Table 22. -- Descriptive statistics of degree centrality measures for social network analysis of the following question: Please list up to five communities that residents interact with the most and how residents interact with them (Q6).

Share local fisheries information	**In-degree**	**Share general public services**	**In-degree**	**Share traditional knowledge**	**In-degree**
Mean	2.00	Mean	1.20	Mean	1.66
Std. Dev.	1.76	Std. Dev.	1.43	Std. Dev.	1.41
Minimum	0.00	Minimum	0.00	Minimum	0.00
Maximum	11.00	Maximum	10.00	Maximum	7.00
Network Centralization	3.98%	Network Centralization	1.75%	Network Centralization	1.05%
Share professional services	**In-degree**	**Share resources**	**In-degree**	**Share culture**	**In-degree**
Mean	1.16	Mean	1.28	Mean	1.73
Std. Dev.	1.82	Std. Dev.	1.56	Std. Dev.	0.41
Minimum	0.00	Minimum	0.00	Minimum	0.00
Maximum	15.00	Maximum	13.00	Maximum	1.79
Network Centralization	5.42%	Network Centralization	2.32%	Network Centralization	2.45%

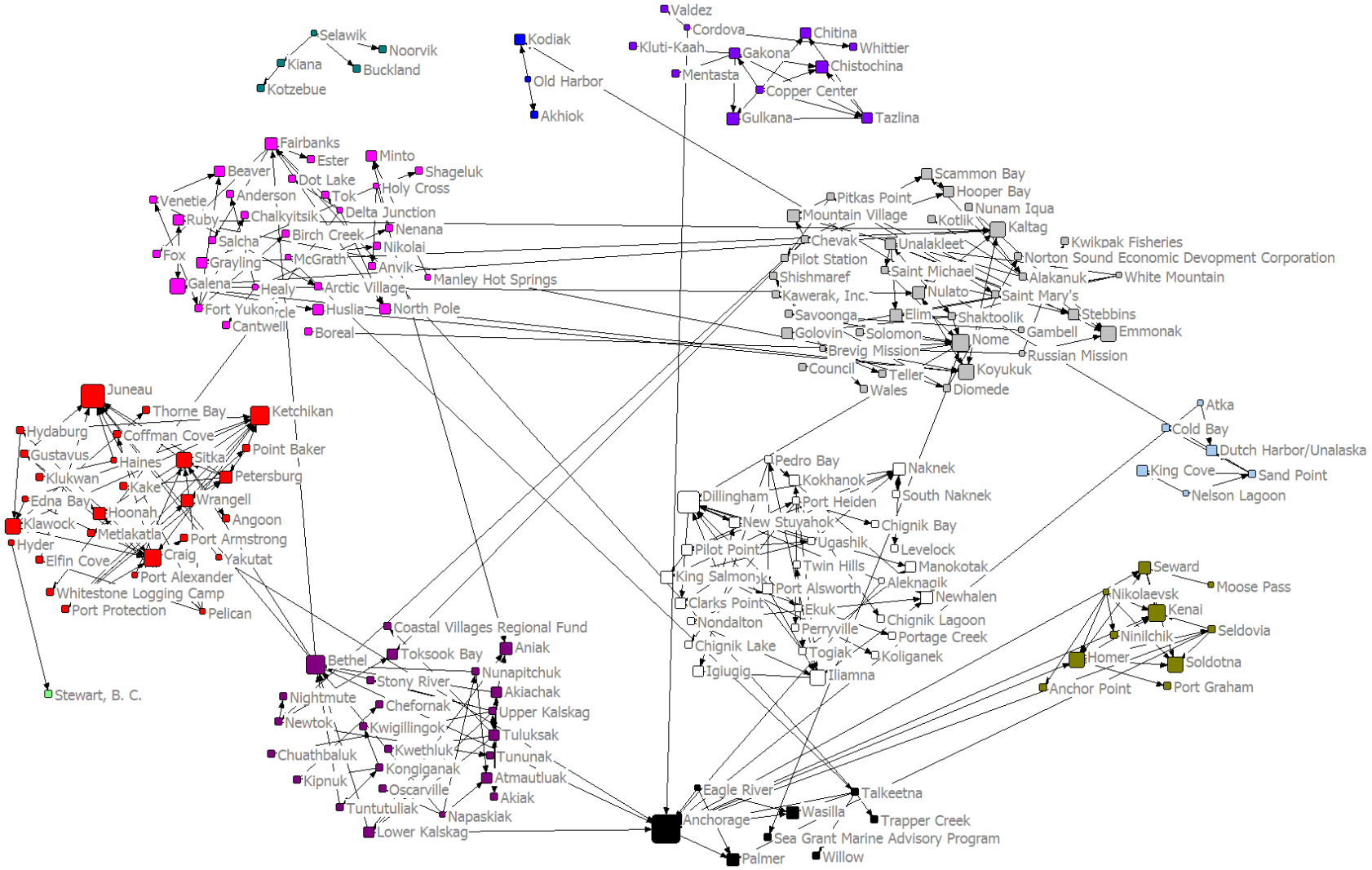


Figure 28. -- Distribution of responses to the following question: Please list up to five communities that residents interact with the most and how residents interact with them (share local fishery information) (Q6).

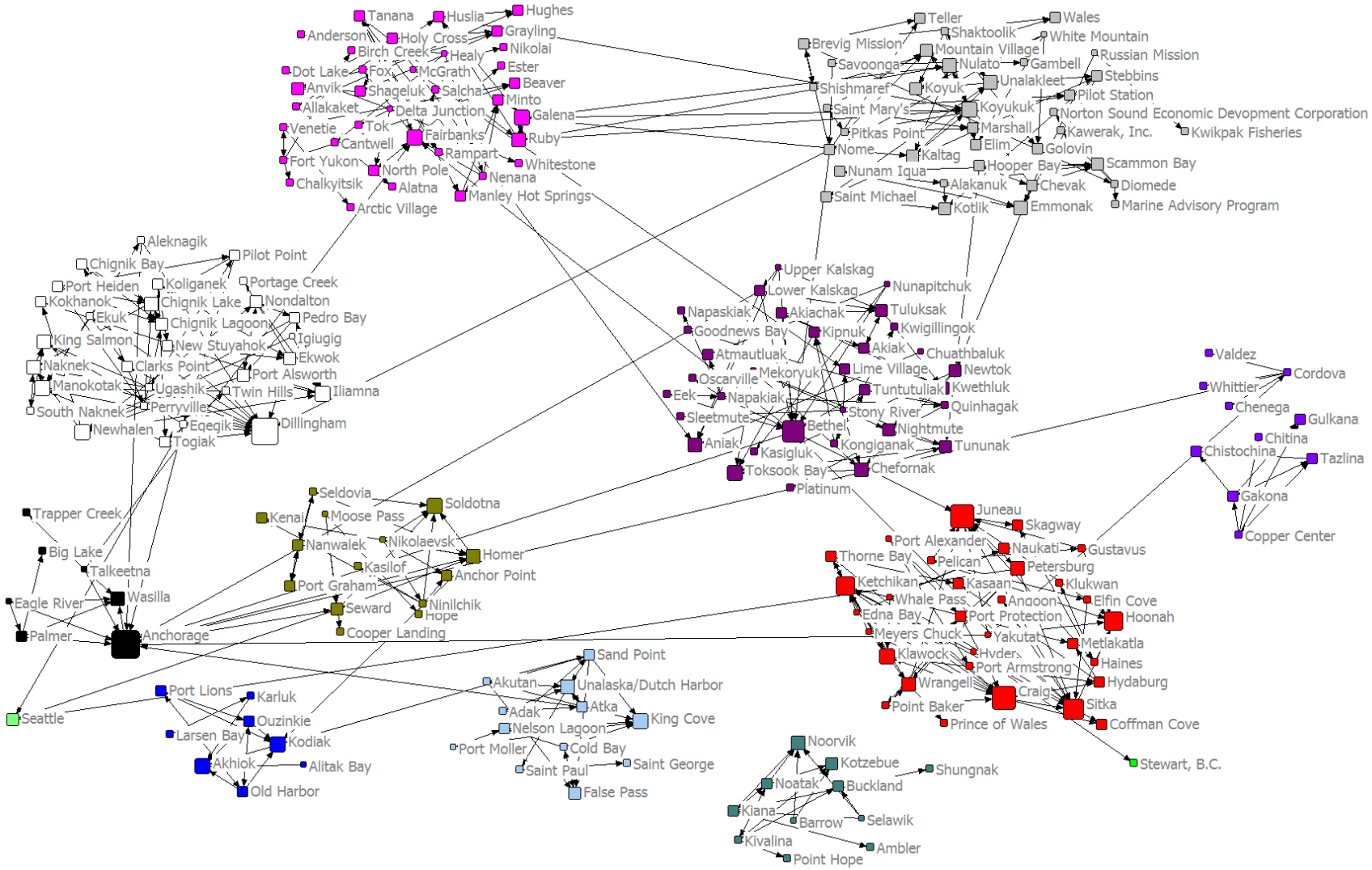


Figure 29. -- Distribution of responses to the following question: Please list up to five communities that residents interact with the most and how residents interact with them. (Share general public services) (Q6).

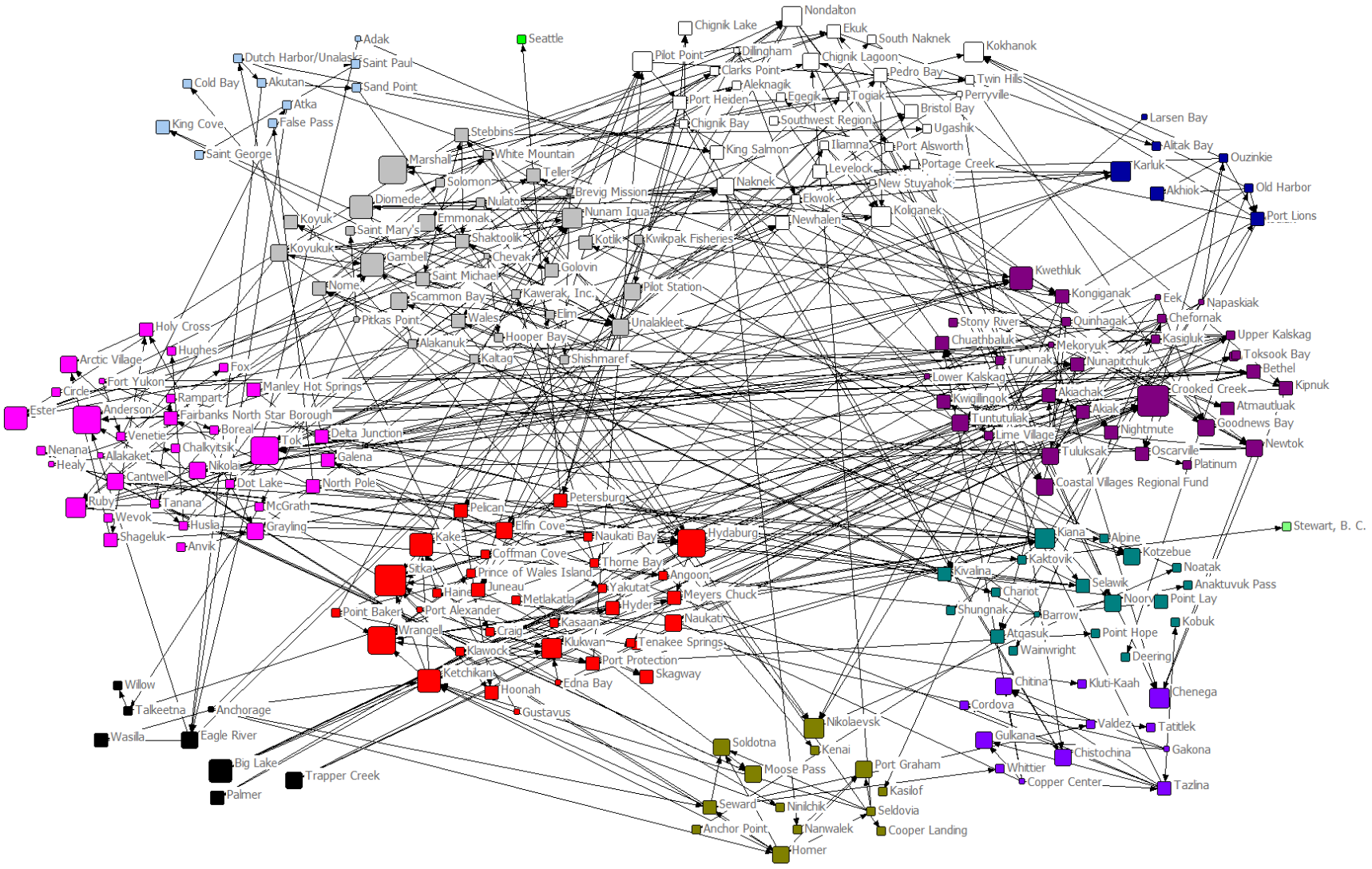


Figure 30. -- Distribution of responses to the following question: Please list up to five communities that residents interact with the most and how residents interact with them (share traditional knowledge) (Q6).

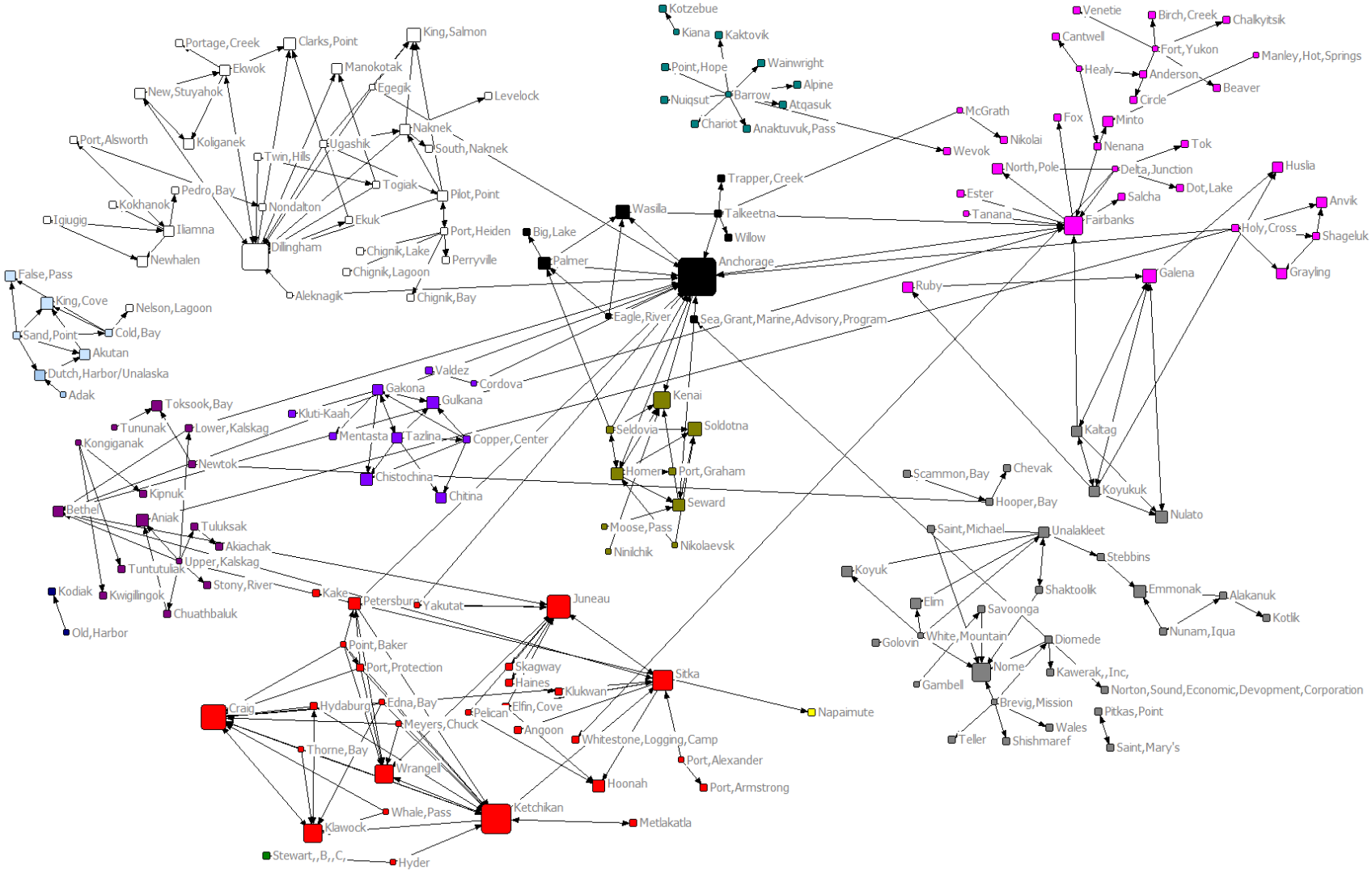


Figure 31. -- Distribution of responses to the following question: Please list up to five communities that residents interact with the most and how residents interact with them (share professional services) (Q6).

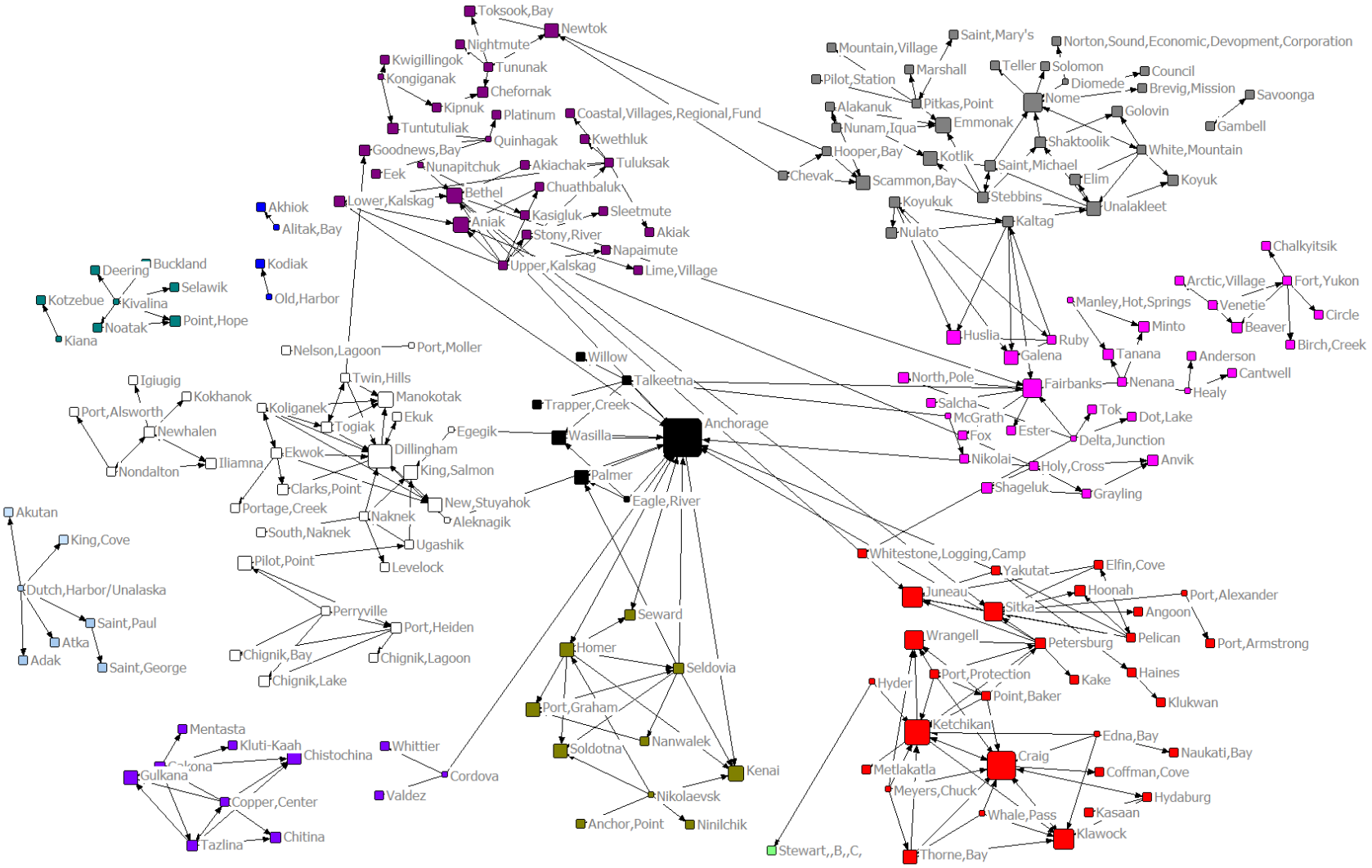


Figure 32. -- Distribution of responses to the following question: Please list up to five communities that residents interact with the most and how residents interact with them (share resources) (Q6).

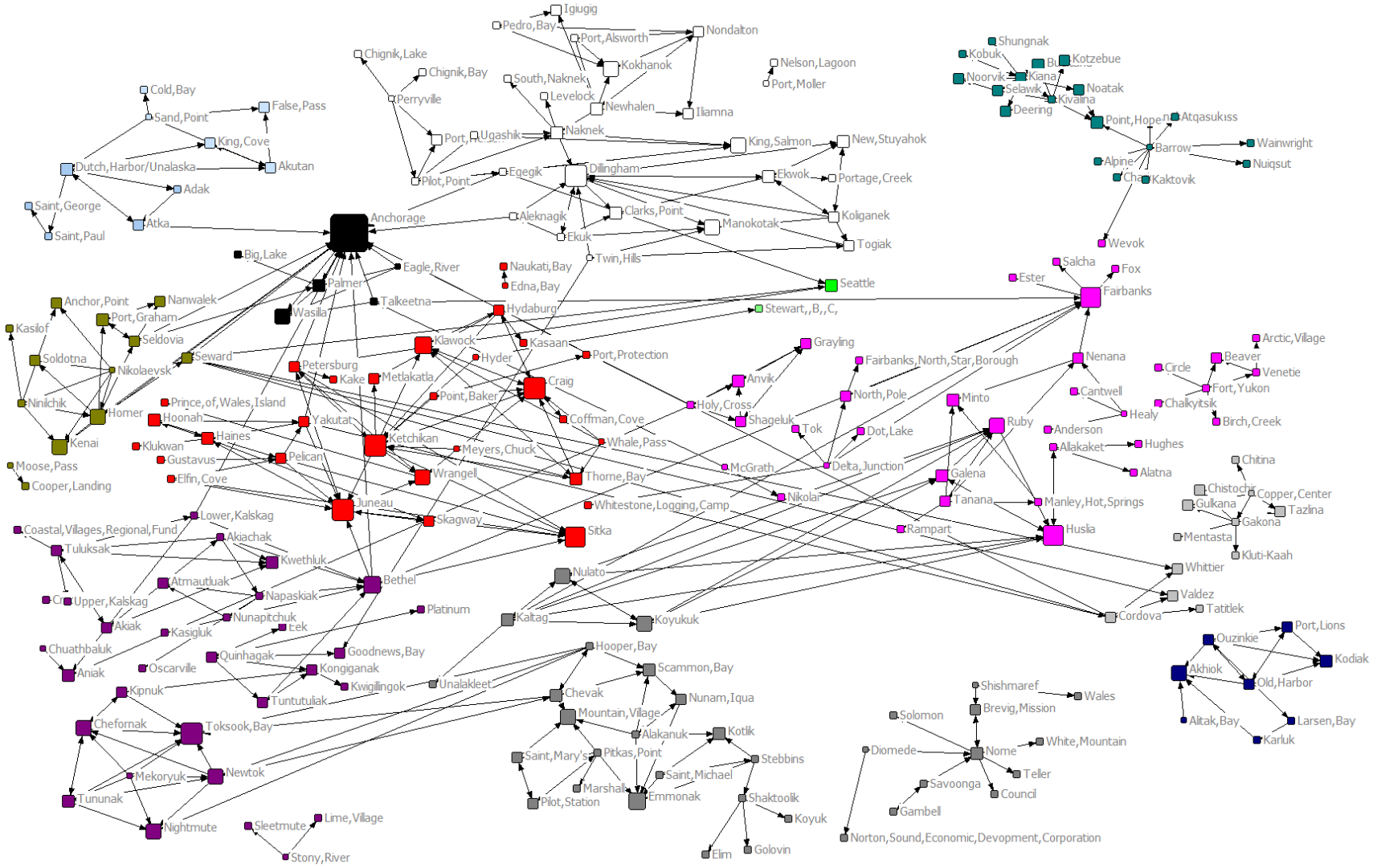


Figure 33. -- Distribution of responses to the following question: Please list up to five communities that residents interact with the most and how residents interact with them (share culture) (Q6).

Question 7 asked communities which communities they travel to on a regular basis and the mode of transportation available to travel there. Item response rates are shown in Table 23 and in-degree centrality in Table 24. The responses were analyzed as social network data and sociograms were created to visually represent the relationships as with question Q6 presented above.

The mode of transportaion used for travel to communities with highest network centralization was ferries (21%) (Figure 34 and Appendix Table C2). Forty-three communities were listed for ferry travel. Ketchikan (10), Juneau (9) and Seattle (6) were the top hubs traveled to via ferry, with the highest in-degree centrality, or nominations. As would be expected only communities of coastal regions resported using ferry service. Interior, Kuskokwim River Mouth, Northern Alaska, and Norton Sound and Bering Strait communities did not report using ferry for travel.

One hundred ninety-eight communities were nominated for visits using air travel with Anchoarge being the major hub with 38 nominations followed by Bethel (20), and Ketchikan (11). Network centralization was 9.12%. Figure 35 illustrates the dense network of communities, from all eleven regions, traveling to Anchorage via air. These findings are consistent with Q6 above and Q22 below with Anchorage being the main hub for accesing various resources.

A total of 83 communities within five in-land regions (Figure 36) were nominated for travel via ice roads. The network centralization was 4.2% (Table 24) and Bethel and Nondalton were nominated the most with 9 and 7 nominations, respectively. The Kuskokwim River Mouth region had the largest sub-network for ice road travel.

Network centralization was 8.3% for travel via river. One hundred-sixteen communities of only five regional groupings were nominated for river travel mainly occuring between Norton Sound and Bering Strait, and Interior and Bristol Bay and Alaska Penninusla communities (Figure 37). Bethel was nominated the most (11) followed by Galena, Koyokuk, Nulato amd Emmonak with an equal number of nominations (5).

Network centralization of winter trail travel was the lowest at 0.09% despite having 132 community nominations. This suggests winter trail travel is well dispersed among communities. Bethel is most traveled to via winter trails (13) followed by Emmonak (6) and Dillingham (5). As was with river travel, travel via winter trails was most prominent between Norton Sound and Bering Strait, and Interior, Bristol Bay and Alaska Penninsula, and Kuskokwim River Mouth communities (Figure 38).

Skiff travel network centralization was 2.4% with 162 communities nominated (Figure 39). Bethel had the highest in-degree centrality for skiffs (9) followed by Emmonak (7) and Dillingham (5). There were few ties for travel out of region via skiffs and communities of Northern Alaska and Kenai Peninsula reportedly did not travel out of region on skiffs.

Finally, road travel inetwork centralization was 10.6% with Anchoarge having the highest nominations (6), and the remaining communities having low scores (< 3 nominations) (Figure 40). The total number of nominations was 48 and the network and sub-networks are relatively small. The high network centralization is because of the small network size and concentrated nominations within regions.

Overall the results suggest that travel via centralized formal systems (air and ferry) have higher network centralization because of the concentration of these services which may be limited to some areas (ferry) and necessary in others (air) for accessing resources. The lower centralization of the informal travel methods (ice roads, winter trails, river, skiff) suggest that

there are more options for these types of travel and they depend upon the types of resources that communities are accessing both within and across regions.

Table 23. – Response rate to the following question: Which communities do residents travel to on a regular basis and what mode of transportation is available to travel there? (Q7).

Region	Item response	Item response rate
Aleutian and Pribilof Islands	11	91.67%
Anchorage and Mat-Su	4	100.00%
Bristol Bay and Alaska Peninsula	23	100.00%
Interior	16	94.12%
Kenai Peninsula and Cook Inlet	9	100.00%
Kodiak Island	7	100.00%
Kuskokwim River Mouth	18	94.74%
Northern Alaska	6	100.00%
Norton Sound and Bering Strait	22	95.65%
Prince William Sound	4	80.00%
Southeast	23	100.00%
Total	143	

Table 24. -- Descriptive statistics of degree centrality measures for social network analysis of the following question: Which communities do residents travel to on a regular basis and what mode of transportation is available to travel there (Q7).

Ferry	**In-degree**	**Air**	**In-degree**	**Ice roads**	**In-degree**
Mean	1.54	Mean	2.26	Mean	2.24
Std. Dev.	2.15	Std. Dev.	3.51	Std. Dev.	1.68
Minimum	0.00	Minimum	0.00	Minimum	0.00
Maximum	10.00	Maximum	38.00	Maximum	9.00
Network Centralization	20.64%	Network Centralization	9.12%	Network Centralization	4.17%

River	**In-degree**	**Winter trails**	**In-degree**	**Skiff**	**In-degree**
Mean	1.53	Mean	1.80	Mean	1.38
Std. Dev.	1.44	Std. Dev.	1.56	Std. Dev.	1.20
Minimum	0.00	Minimum	0.00	Minimum	0.00
Maximum	11.00	Maximum	13.00	Maximum	9.00
Network Centralization	8.30%	Network Centralization	0.09%	Network Centralization	2.38%

Roads	**In-degree**
Mean	1.15
Std. Dev.	1.041
Minimum	0
Maximum	6
Network Centralization	10.55%

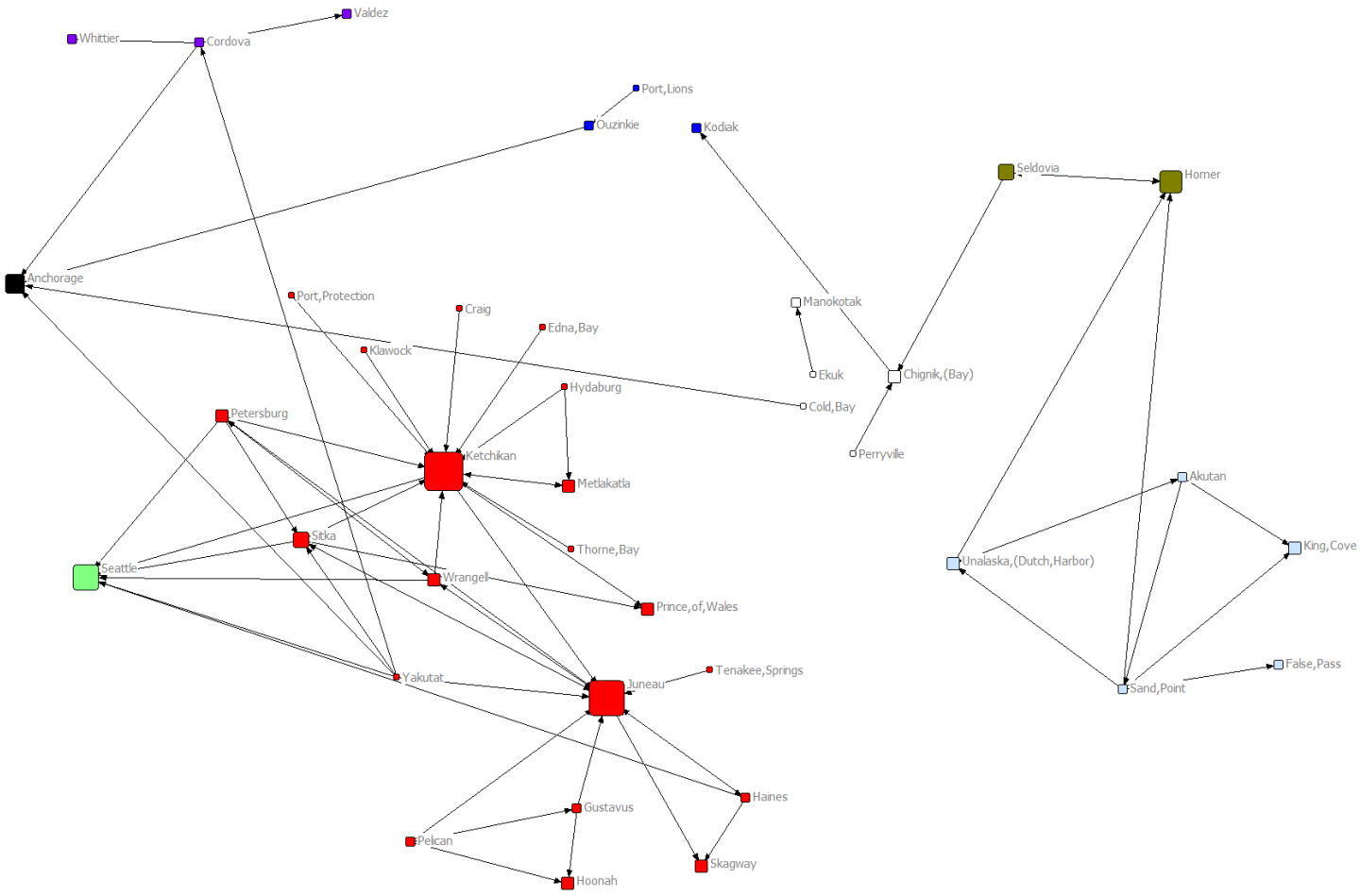


Figure 34. -- Distribution of responses to the following question: Which communities do residents travel to on a regular basis and what mode of transportation is available to travel there? (Ferry) (Q7).

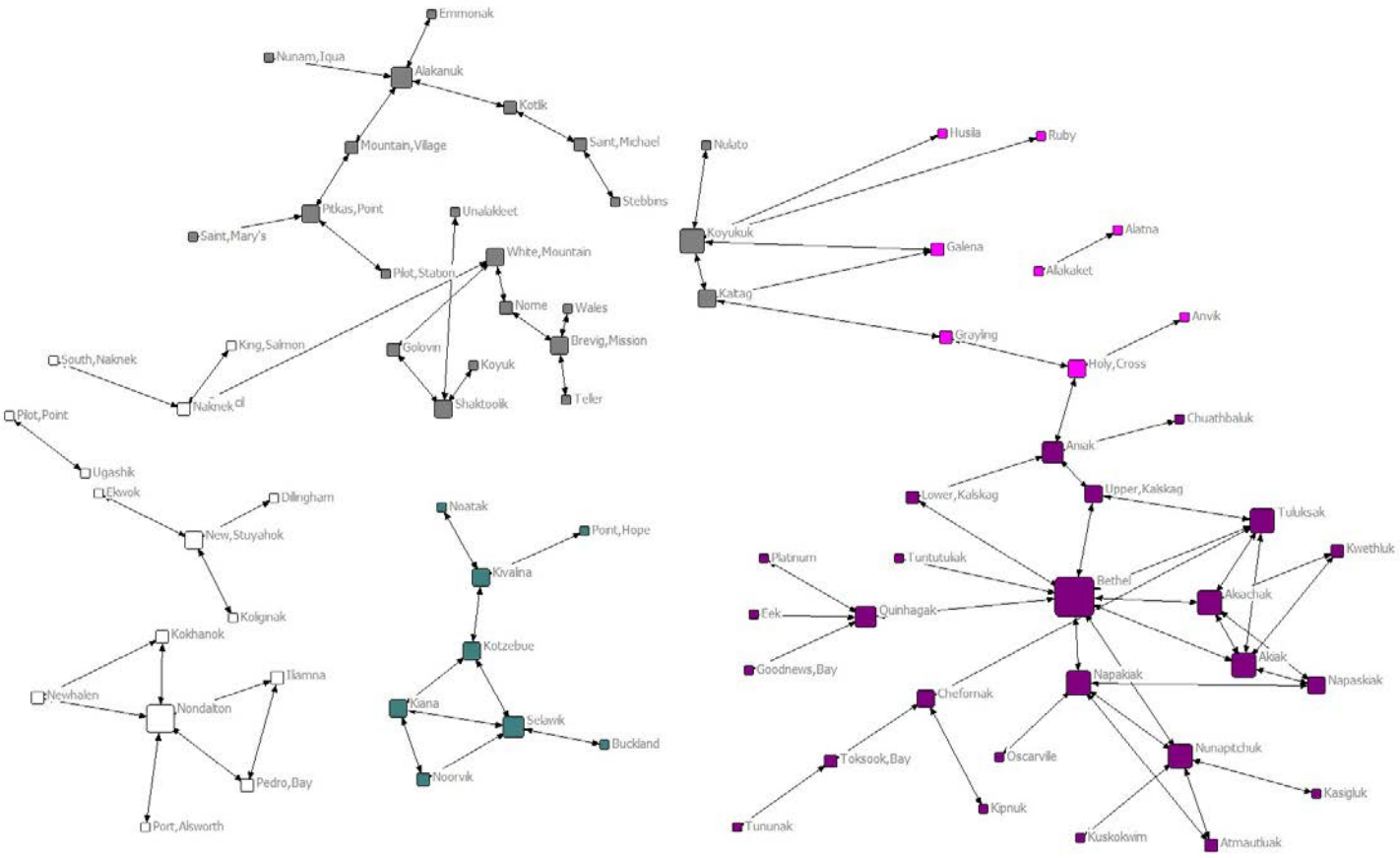


Figure 35. -- Distribution of responses to the following question: Which communities do residents travel to on a regular basis and what mode of transportation is available to travel there? (Air) (Q7).

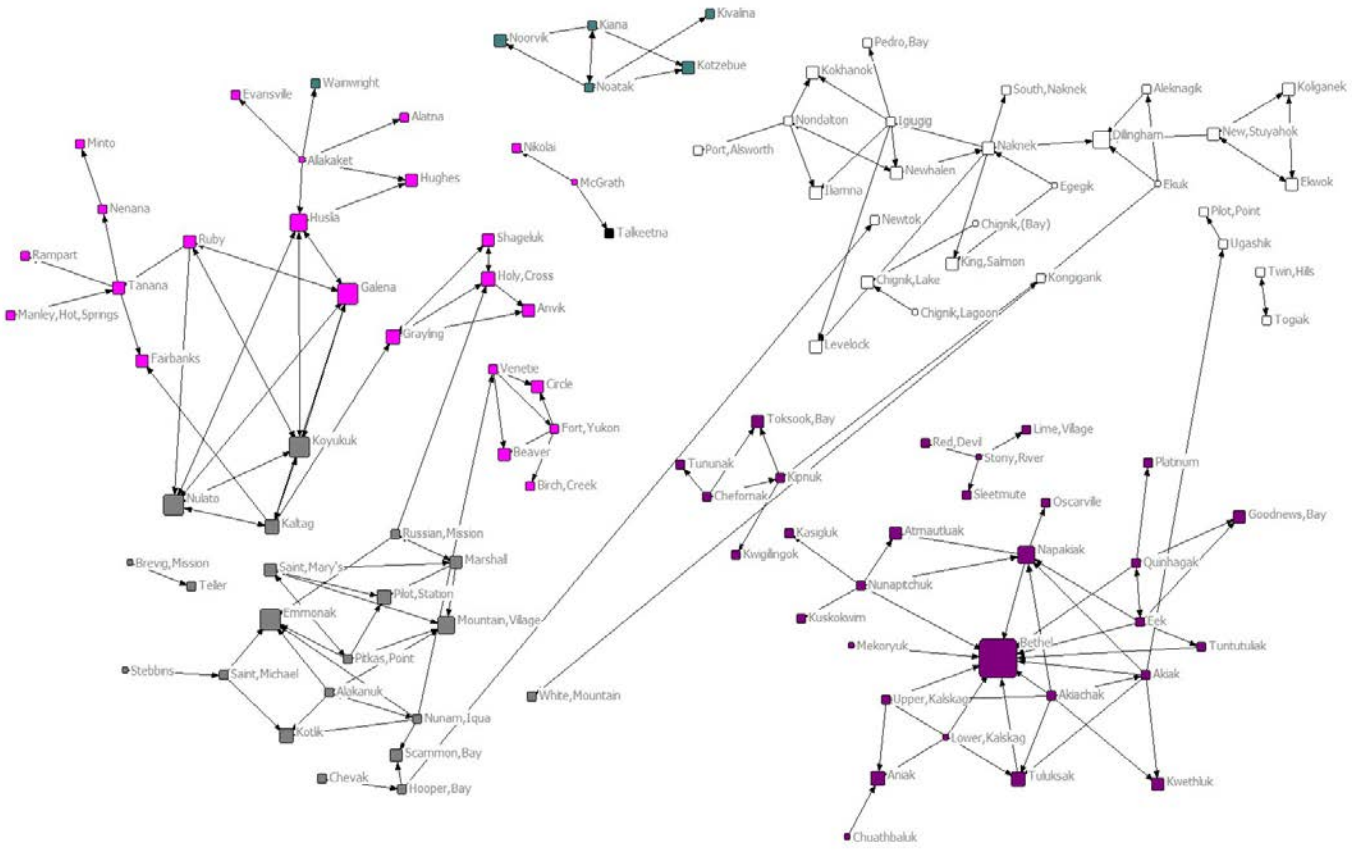


Figure 36. -- Distribution of responses to the following question: Which communities do residents travel to on a regular basis and what mode of transportation is available to travel there? (Ice road) (Q7).

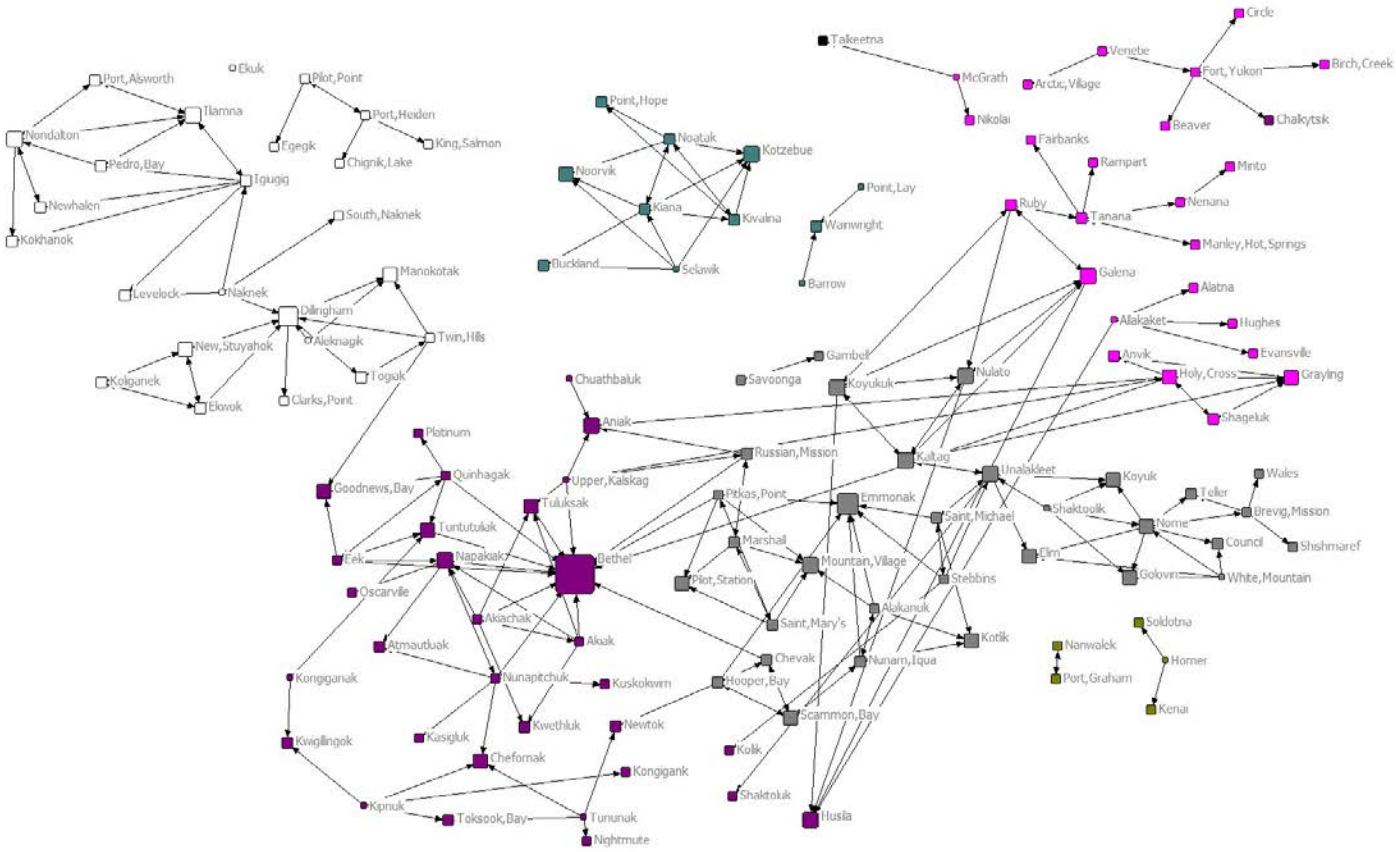


Figure 37. -- Distribution of responses to the following question: Which communities do residents travel to on a regular basis and what mode of transportation is available to travel there? (River) (Q7).

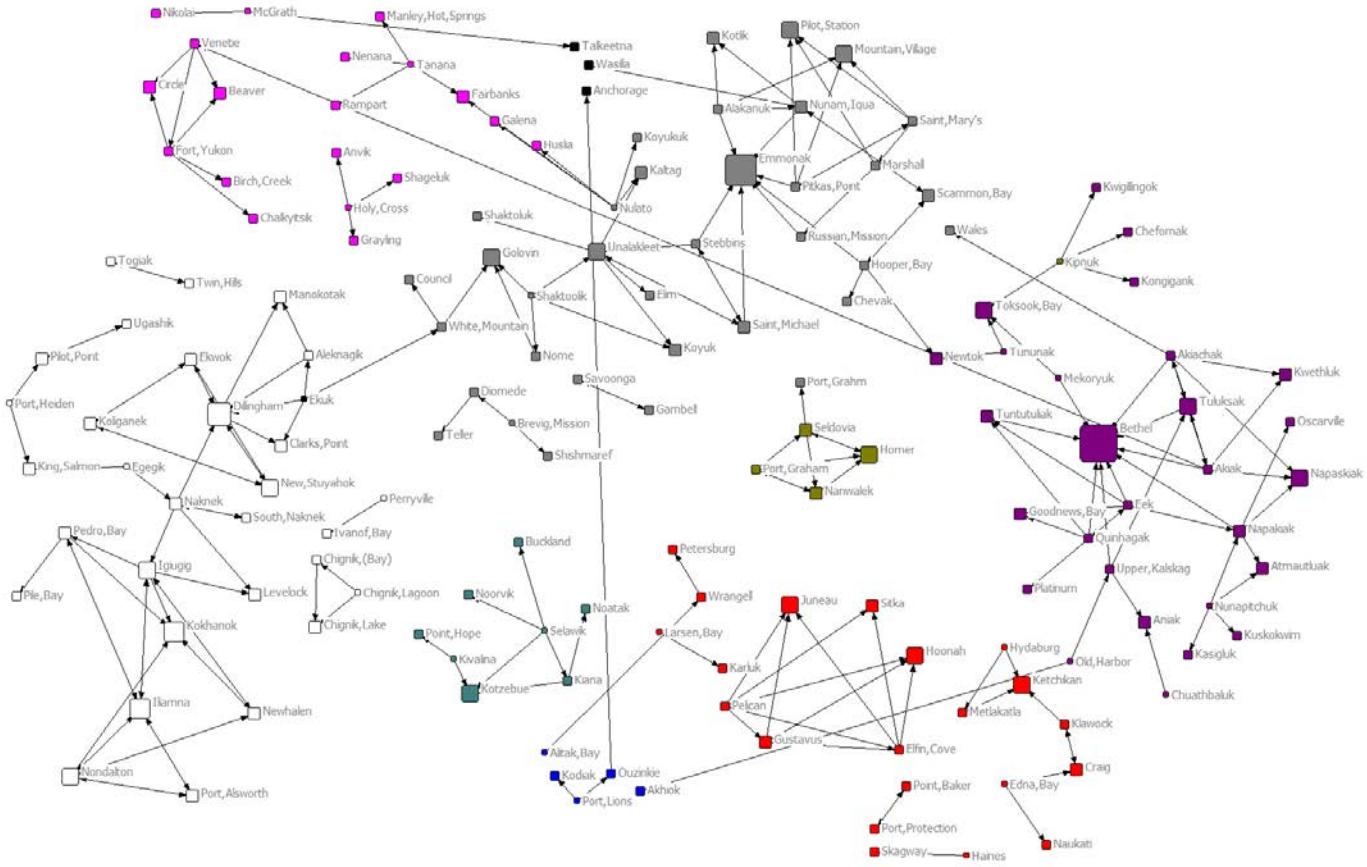


Figure 38. -- Distribution of responses to the following question: Which communities do residents travel to on a regular basis and what mode of transportation is available to travel there? (Winter trails) (Q7).

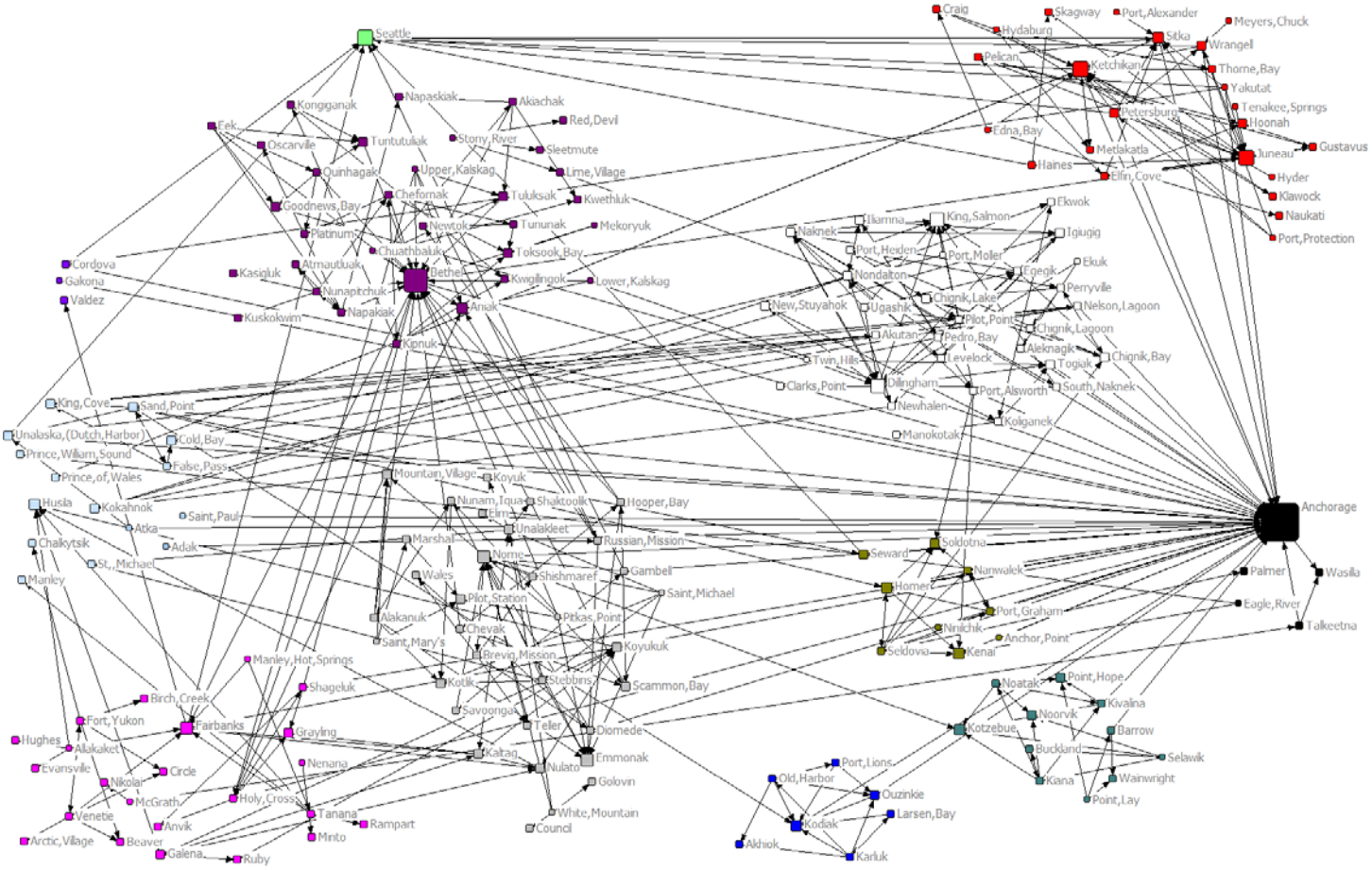


Figure 39. -- Distribution of responses to the following question: Which communities do residents travel to on a regular basis and what mode of transportation is available to travel there? (Skiff) (Q7).

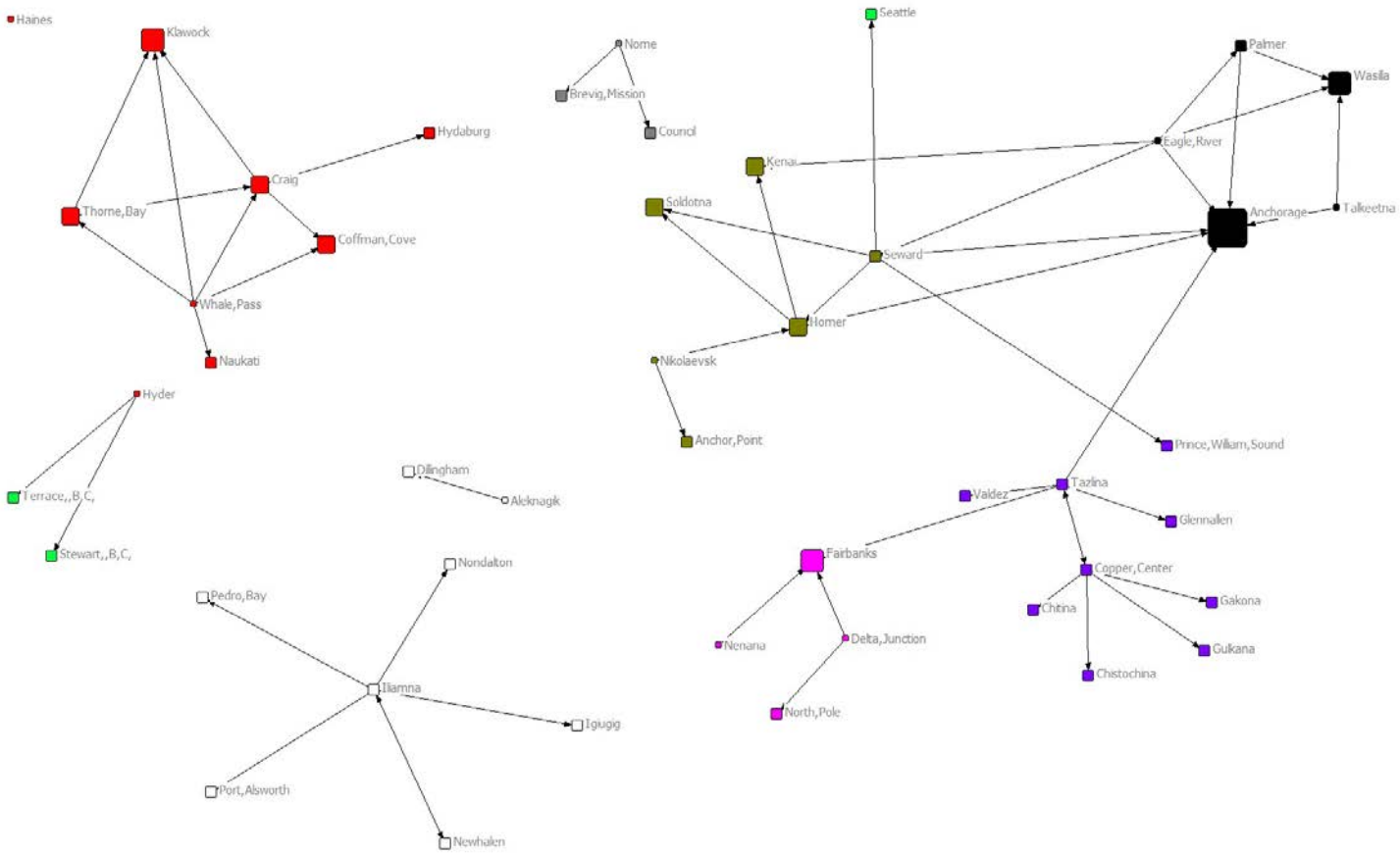


Figure 40. -- Distribution of responses to the following question: Which communities do residents travel to on a regular basis and what mode of transportation is available to travel there? (Road) (Q7).

Survey question 8 asked community respondents to list the top three cities or communities that residents depend on for goods and supplies such as groceries, fuel, household supplies, construction materials, and hardware. The question had high response rates as shown in Table 25 below. Network centralization was high at 31% (Table 26) and 176 communities were nominated. As above, in this social network section, a sociogram created to visually represent hubs that remote communities access for goods and supplies (Figure 41). This sociogram emerged structurally different with hubs concentrated with dense ties. The sociogram clearly shows that Anchorage is a major hub for goods and supplies with 110 nominations. Seattle (51) and Fairbanks (32) are also cities that Alaskan communities access for resources not available in their commmunities (Appendix Table C3). The smaller city of Bethel (22) also had relatively high nominations. The results demonstrate that these major hubs are accessed as goods and supplies are not readily available in small communities or in their relative regions.

Table 25. -- Response rate to the following question: Please list the top 3 communities your community depends on for goods and supplies, such as groceries, fuel, household supplies, construction material and hardware (Q8).

Region	Item response	Item response rate
Aleutian and Pribilof Islands	12	100.00%
Anchorage and Mat-Su	4	100.00%
Bristol Bay and Alaska Peninsula	23	100.00%
Interior	17	100.00%
Kenai Peninsula and Cook Inlet	9	100.00%
Kodiak Island	7	100.00%
Kuskokwim River Mouth	19	100.00%
Northern Alaska	6	100.00%
Norton Sound and Bering Strait	23	100.00%
Prince William Sound	5	100.00%
Southeast	23	100.00%
Total	148	

Table 26. -- Descriptive statistics of degree centrality measures for social network analysis of the following question: Please list the top three communities that this community depends on for goods and supplies, such as groceries, fuel, household supplies, construction material, and hardware (Q8).

	In-degree
Mean	2.21
Std. Dev.	9.63
Minimum	0.00
Maximum	110.00
Network Centralization	30.97%

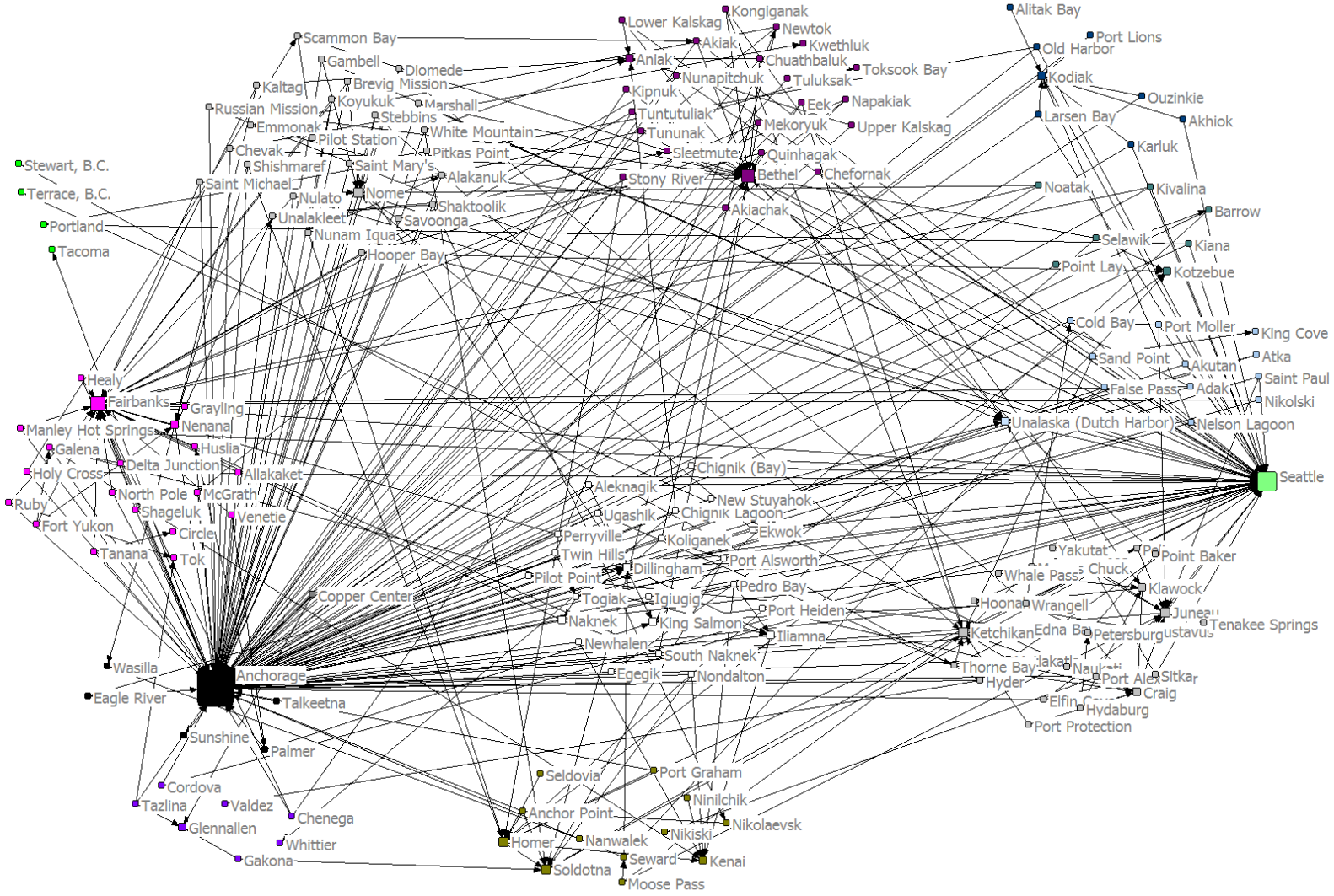


Figure 41. -- Distribution of responses to the following question: Please list the top three communities that this community depends on for goods and supplies, such as groceries, fuel, household supplies, construction material, and hardware (Q8).

Survey question 9 asked community respondents if any of the children in the community under age 18 attend schools in another community. It also asked if children were enrolled in correspondence courses and to list the communities where children attends school. The question also had high response rates as shown in Table 27 below. Network centralization was high at 44.3% (Table 28) and 98 communities were nominated. The top communities where children attend school are Sitka (44) of the Southeast, Nenana (13) and Galena (29) of the Interior, and Anchorage (14) of the Anchorage and Mat-Su region (Figure 42 and Appendix Table C3). These communities have K9-12 boarding schools such as Mt. Edgecumbe in Sitka, Galena Interior Learning Academy, and Nenana Public High School. Children attend these schools because many small communities of Alaska do not have highschools.

As displayed in Table 29, 60% of community respondents from Prince William Sound and more than half of the from Bristol Bay and Alaska Peninsula and Norton Sound and Bering Strait (55% for both regions) reported that children under the age of 18 attend school in another community. Conversly the majority of respondents of Anchorage and Mat-Su (75%), Northern Alaska (67%), Kodiak Island (57%), and Kenai Peninsula and Cook Inlet (56%) reported that children attend school in the same community. Very few respondents reported that students were taking correspondence courses.

Table 27. -- Response rate to the following question: Do any of the children in your community under age 18 attend school in another community? (Q9).

Region	Item response	Item response rate
Aleutian and Pribilof Islands	11	91.67%
Anchorage and Mat-Su	4	100.00%
Bristol Bay and Alaska Peninsula	22	95.65%
Interior	17	100.00%
Kenai Peninsula and Cook Inlet	9	100.00%
Kodiak Island	7	100.00%
Kuskokwim River Mouth	17	89.47%
Northern Alaska	6	100.00%
Norton Sound and Bering Strait	22	95.65%
Prince William Sound	5	100.00%
Southeast	20	86.96%
Total	140	

Table 28. -- Descriptive statistics of degree centrality measures for social network analysis of the following question: Do any of the children in your community under age 18 attend school in another community? (Q9).

	In-degree
Mean	1.50
Std. Dev.	5.56
Minimum	0.00
Maximum	44.00
Network Centralization	44.27%

Table 29. -- Regional breakdown of responses to the following question: Do any of the children in your community under age 18 attend school in another community? (Q9).

Region	n	Same community	Another community	Correspondence courses	This and other community	This community, other, and correspondence courses
Aleutian and Pribilof Islands	11	36.36%	36.36%	9.09%	0.00%	0.00%
Anchorage and Mat-Su	4	75.00%	0.00%	0.00%	0.00%	25.00%
Bristol Bay and Alaska Peninsula	22	36.36%	54.55%	4.55%	0.00%	4.55%
Interior	17	41.18%	35.29%	0.00%	23.53%	0.00%
Kenai Peninsula and Cook Inlet	9	55.56%	44.44%	0.00%	0.00%	0.00%
Kodiak Island	7	57.14%	28.57%	0.00%	14.29%	0.00%
Kuskokwim River Mouth	17	50.00%	27.78%	0.00%	16.67%	0.00%
Northern Alaska	6	66.67%	16.67%	0.00%	16.67%	0.00%
Norton Sound and Bering Strait	22	22.73%	54.55%	0.00%	13.64%	9.09%
Prince William Sound	5	40.00%	60.00%	0.00%	0.00%	0.00%
Southeast	20	50.00%	27.27%	4.55%	4.55%	4.55%

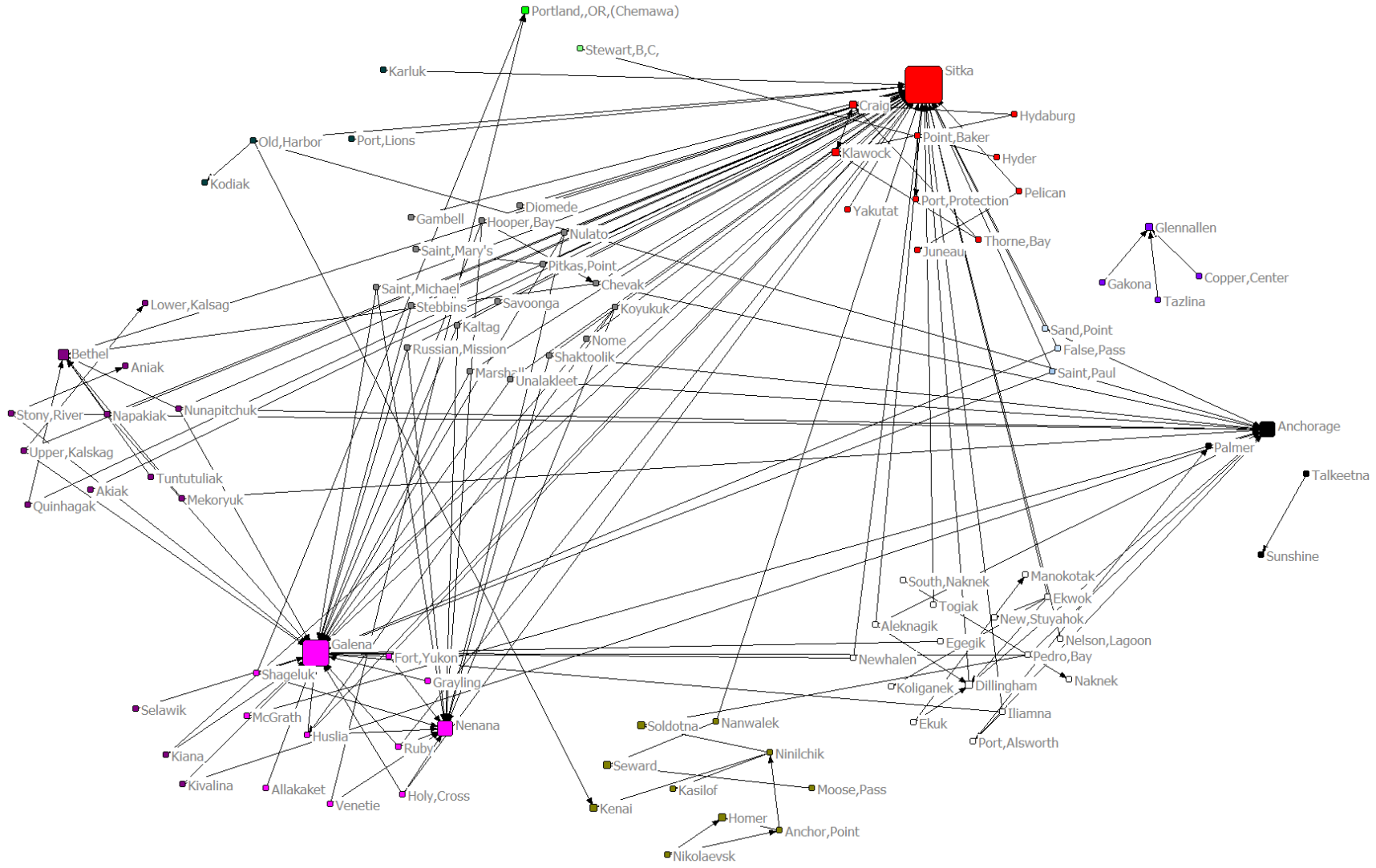


Figure 42. -- Distribution of responses to the following question: Do any of the children in your community under age 18 attend school in another community? (Q9).

As presented earlier in this report, one survey question (Q21) asked respondents about the types of fishing support businesses located in their community. Relevant to this is question 22, which asked respondents to list the top three communities that residents go for fishing support businesses, if they are not located in their community. The item response rate is summarized in Table 30. Network centralization was 27.5% (Table 31) for fishery business services and there were 142 communities nominated. Communities with the highest number of nominations include Anchorage (40), Seattle (20), and Homer (13) (Appendix Table C3). Although Anchorage is a major hub for fishing support businesses, nominations for support businesses is heterogeneous as many communities access services in communities across regional groupings as illustrated in Figure 43. However, the findings suggest that fishery support businesses are not readily available in smaller communities or their relative regions, as was the case with goods and supplies (Q8).

Table 30. -- Response rate to the following question: For those businesses not available in this community, please list the top three communities that people go to for these services (Q22).

Region	Item response	Item response rate
Aleutian and Pribilof Islands	10	83.33%
Anchorage and Mat-Su	4	100.00%
Bristol Bay and Alaska Peninsula	16	69.57%
Interior	10	58.82%
Kenai Peninsula and Cook Inlet	8	88.89%
Kodiak Island	4	57.14%
Kuskokwim River Mouth	12	63.16%
Northern Alaska	2	33.33%
Norton Sound and Bering Strait	18	78.26%
Prince William Sound	3	60.00%
Southeast	21	91.30%
Total	108	

Table 31. -- Descriptive statistics of degree centrality measures for social network analysis of the following question: For those businesses not available in this community, please list the top three communities that people go to for these services (Q22).

	In-degree
Mean	1.46
Std. Dev.	4.18
Minimum	0.00
Maximum	40.00
Network Centralization	27.53%

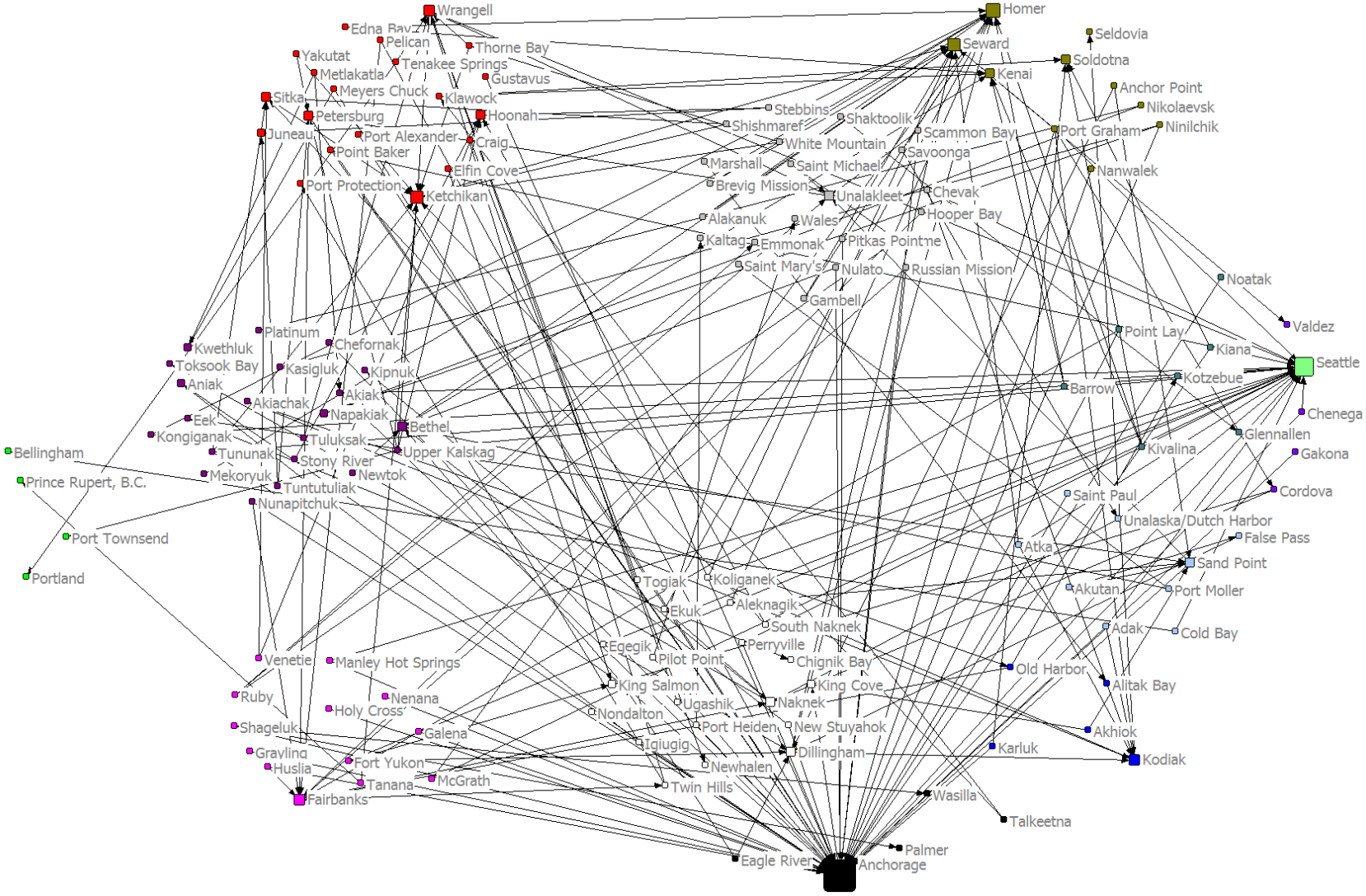


Figure 43. -- Distribution of responses to the following question: For those businesses not available in this community, please list the top three communities that people go to for these services (Q22).

DISCUSSION AND CONCLUSIONS

This report presents the results of the third year of the Alaska Community Survey data collection (implemented in 2014 querying the 2013 calendar year). Communities in Alaska, engaged in commercial, recreational, and/or subsistence fisheries, participated in the survey as in previous years. Community-level data was collected from key informants across all regions of Alaska and the results presented here are generally informative to communities, researchers, and fishery managers.

The survey is representative of 71.15% of communities of interest that were invited to participate in the survey. A non-response analysis was conducted to assess bias in the survey results based on characteristics of the communities that did and did not respond to the survey. Of 21 variables analyzed, 3 were statistically significant; communities that responded to the previous survey year, have a larger number of vessels homeported in the community, and are in proximity to major road/highway were all more likely to respond to the survey of 2013. These results are consistent with the previous year of survey (Himes-Cornell and Kent 2014b) and indicate that more effort is needed to acquire responses from more remote communities or communities that did not respond in previous years. Nonetheless, the response rate was high overall and the results well represent characteristics of Alaskan fishing communities. It is also important to note that this survey relies on key informants to have the knowledge and experience to respond on a broad variety of topics of the communities in which they reside including fisheries participation of its members, municipal finances, and infrastructure development. Given the broad range of communities the results are generally informative, yet they generated important insights as discussed below.

POPULATION AND INFRASTRUCTURE

The majority of Alaska communities experience seasonal fluctuations in population due to the presence of non-resident seasonal workers engaged in fisheries. Communities across all regions reported an influx of seasonal workers between May and September, a period when fishery activity peaks, yet at varying levels. Communities of the Aleutian and Pribilof Islands reported that the peak in population was largely driven by employment in fisheries. This is consistent with US census data as this region has high net migration rates (100-250), and a large proportion of the population living in group quarters working in fisheries and seafood processing (ADLWD 2016). Communities of Anchorage and Mat-Su, and Interior regions reported the lowest association between population and fishery activity, and the remaining regions reported varying levels of association. Conversely, Kodiak Island communities reported the highest proportion of year-round residents working in shore-side processing plants indicative of a more stable population engaged in fisheries. Although Kodiak Island has had among the most transient populations because of the fish processing industry (Williams 2004), recent evidence suggests this trend is diminishing as Kodiak Island had among the lowest net migration rates in the State as of 2014 (ADLWD 2016). Seasonal influx of population may produce cash in-flow during those months contributing to the local economy. However, some communities may lack the infrastructure to handle population fluctuations.

Infrastructure is important for sustaining Alaska communities and supporting vessels and fisheries activity (Lyons et al. in press). Many communities surveyed reported that they had no

public moorage available for vessels. The majority of communities of the Interior, Northern Alaska, Bristol Bay and Alaska Peninsula, Kuskokwim River mouth, and Norton Sound and Bering Strait regions reported they had no public moorage to support permanent or transient vessels. The Aleutian and Pribilof Islands, Kenai Peninsula and Cook Inlet, Kodiak Island, and Southeast regions are better equipped for supporting vessels. Also, few communities have the capacity to support vessels over 1,000 feet in length. Communities that participate in fisheries with smaller vessels must use other shoreline for moorage, and those with larger vessels may engage in fisheries based out of other communities with proper infrastructure. As such, communities with active fishery quota and permit holders, yet lack fishery infrastructure may not derive the economic benefits from fisheries as benefits are displaced to communities where infrastructure is available.

Community infrastructure and public services are often funded by moorage fees and fishery related fees and taxes. Many community respondents reported revenue received from vessel moorage, and the Kenai Peninsula and Cook Inlet region received the highest revenue (median of $84,929). This is consistent with the wide-ranging fishery infrastructure available in the region, discussed above. The Southeast, Kodiak Island, and Aleutian and Pribilof Islands regions also reported substantial revenue from vessel moorage. Communities of the Northern Alaska and Interior regions reported zero revenue from public moorage facilities.

Fishery related taxes and fees such as raw fish tax and shared fisheries business tax also bring revenue into communities that support fishery and general public infrastructure. Community respondents reported a variety of public services and infrastructure that are supported by fishery taxes and fees. Communities across seven of the eleven regions reported they received revenue from harbor rentals. Only the Interior and Northern Alaska communities reported zero revenue for fishery related taxes and fees. Examples of fee programs that support municipal operations and infrastructure include; commercial fishing crew licensing fees which support municipal operations (Aleutian and Pribilof Islands); boat and skiff haul out fees which support public services/infrastructure (Bristol Bay and Alaska Peninsula); and shares of the fish tax that go to retire debt on infrastructure (Southeast).

Many public services are supported by fishery related taxes and fees. These include harbor maintenance, hospitals, educational scholarships, roads, social services, water treatment, schools and police enforcement and fire protection. The Aleutian and Pribilof Islands, Southeast, Norton Sound and Bering Strait, and Bristol Bay and Alaska Peninsula regions funded all of these public services, to varying degrees, with fishery related taxes and fees. Northern Alaska communities received no fishery related support for these public services and Interior communities received limited support. These finding suggests commercial fishing activity in Alaska provides funding for various community needs and has substantial positive economic effects on communities.

In regard to fishery support businesses and services, the Kenai Peninsula and Cook Inlet region had the most comprehensive services, whereas Northern Alaska had the least. The other regions, excluding Interior with relatively limited services, also had sufficient business services to support fishery activity. The majority of communities with fish processing plants were in the Aleutian and Pribilof Islands, Kenai Peninsula and Cook Inlet, and Southeast regions. With fish processing facilities and adequate fishery related infrastructure, communities may receive higher landings of fish, acquire higher fishery related revenue, and provide employment opportunities.

The majority of communities rely upon the fishing industry to support their economies according to the results of this survey. Only communities of the Interior and Northern Alaska

regions reported lower economic dependence on fisheries and this is consistent with the general findings that these regions lack fishery infrastructure, such as basic moorage facilities. However, it is unclear whether the lower participation in fisheries is because of less accessibility to fishery support infrastructure and services. Communities of the Interior rely also on other extractive industries such as mining, logging, and oil and gas. However, where economic opportunities are limited, such as in Northern Alaska, there is more dependence on subsistence activity.

FISHING AND VESSEL ACTIVITY

Communities of Alaska harvest a wide variety of fishes for commercial, recreational and subsistence purposes, however, Salmonids are highly prized in the State. Community respondents across all regions consistently reported salmon as a target species for commercial, recreational and subsistence purposes. One hundred percent of communities of the Anchorage and Mat-Su, Kenai Peninsula and Cook Inlet, Kodiak Island, Kuskokwim River Mouth, Norton Sound and Bering Strait, and Southeast regional groupings, and majority of communities in the other regions reported participating in salmon fisheries. This demonstrates the importance of salmon to Alaskan fishing communities. Other reported species indicates some regionalization in the types of fisheries communities are engaged in. For example, halibut and sablefish, and cod fisheries were prominent in the Aleutian and Pribilof Islands communities, and cod in the Aleutian and Pribilof Islands grouping and in Kenai Peninsula and Cook Inlet. Crab fisheries were prominent in the Anchorage and Mat-Su and Kodiak Island regions, pollock fisheries in the Aleutian and Pribilof Islands, and herring in Kodiak Island. Whitefish was also a prominent species targeted in the Interior region.

With regard to commercial fisheries, the size of vessels based out of communities and types of gear varied across regions. The majority of communities across all regions had fishing vessels less than 35 feet and 35-60 feet based out of their communities except for Northern Alaska (no commercial fishing vessels) and Interior. Almost half of the Aleutian and Pribilof Islands, Southeast, and Prince William Sound communities had vessels between 65-125 feet, and the Aleutian and Pribilof Islands region had the highest reporting of vessels over 125 feet.

The types of fishing gear also varied across regions, although gillnets were reported by communities across all regions with the majority in the Kuskokwim River Mouth region. Communities of the Aleutian and Pribilof Islands reported the greatest use of trawls, Southeast longline, and Kodiak Island purse seiner. The greatest diversification of gear types (6) used was in Southeast region. Gear and target species diversification is a form of livelihood security and can mitigate effects of fishery management and environmental impacts specific to one fishery, such as closures (Allison and Ellis 2001; Kasperski and Holland 2013; Sethi et al. 2014; Santos and Brannstrom 2015).

Communities also harvest a wide variety of subsistence resource, yet salmon again was reported by the majority of communities across all regions. Few northern Alaska communities harvest salmon for subsistence; the majority harvests pinnipeds (e.g., seals, sea lions, and walruses) and whales (bowhead and beluga whales), whereas others lake fishes and crustaceans and mollusks. Halibut was also a significant subsistence resource, particularly for Southeast, Aleutian and Pribilof Islands, and Prince William Sound regions. Many remote communities that are not heavily engaged in commercial fisheries and with few economic alternatives rely upon subsistence activity for maintaining their livelihoods. Subsistence activity in Alaska is critical for

winter survival, cultural preservation, food security and health (Ballew et al. 2006: DeCou et al. 2013).

Recreational fishing activity also varied across regions. Communities of the Southeast, Kodiak Island, Prince William Sound and Kenai Peninsula and Cook Inlet regions reported the highest levels of recreational fishing activity, and Northern Alaska the least. Fishing on private boats owned by residents was reported by the majority of communities in all regions except for Northern Alaska. The majority of communities also reported fishing on charter boats/party boats, private boats owned by non-residents, and shore or dock based by local residents and non-residents. However, Anchorage and Mat-Su communities did not report of fishing on non-resident private boats, Kuskokwim River Mouth did not report of fishing on charter/party boats, and Northern Alaska did not report of shore or dock based fishing. Southeast communities also reported the highest diversity of target species for recreational fishing including all five species of salmon, halibut, rockfish, and crab among others. Northern Alaska and Interior reported the least number of species and activity indicative of lower engagement in recreational fishing.

Perceived change in vessel activity and vessel size also varied across regional groupings, although the majority of community respondents reported there were no more or no less of charter boats and private pleasure boats. However, more than half of Kenai Peninsula and Cook Inlet communities reported there were more private pleasure boats, and more commercial fishing boats. This region is very engaged in both commercial and recreational fishing and some of the reported reasons for change included increased number of pleasure boats for sport fishing and increased commercial fishing activity. For vessels smaller than 35 feet, the majority of Northern Alaska, Kuskokwim River Mouth, Kenai Peninsula and Cook Inlet, and Norton Sound and Bering Strait communities reported there were more, or a lot more. Respondents across these regions stated there were more small boats as people transitioned from commercial fishing to sport fishing, and many needed smaller boats (skiffs) for private use. The majority of communities across all regions also reported no change in activity of vessels 35-60 feet, vessels 61-125 feet, and vessels over 125 feet. These findings indicate that the number of commercial fishing boats are not necessarily increasing as commercial fleets in Alaska have decreased following consolidation.

FISHERY MANAGEMENT AND PARTICIPATION

An informative finding of the survey results was community representation in fishery management processes. In the Aleutian and Pribilof Islands, Bristol Bay and Alaska Peninsula, Kenai Peninsula and Cook Inlet, and Southeast regions, there are communities participating across all types of fishery management processes (paid staff attending federal and state council meetings, representatives participating in state and federal advisory groups, representatives participating in subsistence boards, relying on regional organizations, and financially supporting groups). Almost half of the Aleutian and Pribilof Island communities have paid staff participate in state and federal, and more than half have representatives for federal management processes. The regions with the highest participation in subsistence management processes are Norton Sound and Bering Strait, and Prince William Sound, although Interior and Northern Alaska communities mainly participate in subsistence management. Half of Northern Alaska and the majority of Anchorage and Mat-Su communities do not participate in fishery management processes at all. Community representation in fishery management processes and decision-making is critical for communities to express their needs and concerns as stakeholders. The

results indicate that regions heavily engaged in fisheries are well-represented, yet local participation in fishery management decisions in remote areas, such as in Northern Alaska, could be improved upon to better reflect the various needs and concerns of Alaska fishing communities.

Community respondents were also asked to provide open responses about the current challenges in their community relative to fishery activity and the effects of management actions on their communities. The greatest challenges for communities involved infrastructure, fishery management and regulations, and quotas and permits. Infrastructure is essential to support fisheries activity and infrastructure generates fishery related revenue that benefits communities as discussed earlier. Even communities in regions with more commercial fishery engagement, such as the Aleutian and Pribilof Islands and Southeast regions, expressed concerns about inadequate infrastructure such as transportation and lack of fish processing plants.

The most cited issues, as a result of fishery policies and management, regarded general fishery management and regulations, quotas and allocations, and subsistence fishing. Communities of the Kuskokwim River Mouth region emphasized how fishery regulations had both direct (direct subsistence regulation) and indirect (commercial fishery activity) effects on subsistence activity. Respondents perceived the cause of decline in king salmon as bycatch from trawl fisheries and or other cyclical phenomena involving salmon runs and escapement. They also expressed concern about the lack of Native Alaska representation in fishery management decisions and how subsistence closures have placed burdens on communities that depend heavily on subsistence fishing for their livelihoods. In addition, limited entry fisheries, high fees, and start-up costs have increased the barriers for new fishermen to enter the fisheries according to respondents. There were concerns about local permits being sold to “big buyers.” These issues expressed by fishing community respondents represent the valid perspectives and experiences of community members as they respond to change in resource access as a result of fishery policy and management in Alaska.

ALASKA COMMUNITY SOCIAL NETWORKS

A major new outcome of this survey is the verification of Alaska fishing community networks that exist for sharing fishery information and resources, grade K-12 education hubs, hubs for goods and supplies, and hubs for fishery support businesses. For example, the communities of Dillingham, Ketchikan, and Bethel were hubs for sharing fishery information. Anchorage, Juneau and Dillingham were hubs for sharing general public services. Anchorage, Ketchikan, and Dillingham, were also hubs for accessing professional services. Anchorage was also the major hub for communities to access goods and supplies followed by Seattle, Washington and Fairbanks. Communities access Anchorage, Seattle, Washington and Homer for fishery support business that are not available in their communities or immediate areas. The less populated communities, Sitka and Galena, were the hubs for grade K-12 education, followed by Anchorage. These communities have boarding schools and provide high school level education as it is not available in many small remote communities.

Social networks of Alaska fishing communities have been shown to increase community resilience as communities are able to tap into various resources provided by other communities (Reedy and Maschner 2014). The overall heterogeneity of the social networks for sharing fishery information and resources is indicative of high social capital and suggests that communities are in a better position to adapt to challenges posed from fishery policy and management, as has

been posited in other cases (Bodin and Crona 2008, Marín and Berkes 2010). Communities of the Kuskokwim River Mouth, Interior, and Norton Sound and Bering Strait regions are heavily engaged in subsistence fishing and most effected by salmon fishery regulations. The communities within these regions also shared the most between-region ties for sharing fishery information and resources. The bridging of these networks increases social capital as communities are able to diversify their options for sharing information and resources thus increasing their adaptive capacity (Crona and Bodin 2006, Bodin et al. 2006, Sandström and Rova 2010). These networks are also important for coping with subsistence fishery challenges, and for a communities' ability to acquire information and resources such as food, medicine and fuel from other communities in times of hardship. Further, the absence of fishery support services in smaller communities limits their self-sustainability and increases the challenges in engaging in traditional fishing activity (Kent and Himes-Cornell 2016).

CONCLUSION

The Alaska Community Survey provides longitudinal primary data from community representatives about fishery participation. The results demonstrate the significance of commercial, recreational and subsistence fisheries to Alaska communities. Although communities vary in the type of fishery they engage in, and their levels of fishery participation, fishery resources are critical to supporting livelihoods and local economies across Alaska. Fisheries contribute to community tax revenues that support both fishery-related and not fishery-related infrastructure and public services. Subsistence fisheries contribute to household economies and are critical to livelihoods in geographically remote areas, such as in Northern Alaska. Community capacity to engage in commercial fisheries is largely determined by the infrastructure available for supporting fishery activity, and smaller remote communities are limited in this aspect. The main concerns expressed by community respondents were in regard to inadequate infrastructure, fishery quotas, and management and regulations. The community social networks presented in this report show that the majority of communities access larger communities or hubs, such as Anchorage, for fishery and non-fishery goods and services. Many communities are also limited in their capacity to provide education as children attend school in educational hubs. A significant finding of this survey was of the social networks that exist across Alaska communities for sharing fishery information and sharing resources, a socio-cultural activity that increases community resilience (Reedy and Maschner 2014). The overall results demonstrate how fishing activity permeates through all facets of society in Alaska, forming the basis of local economies and culture. Fishery policy makers should ensure that all communities across Alaska have fair and continued access to fishery resources critical to community vitality.

The reports produced from the survey can inform researchers, and fishery policy-makers and managers. The information reported here represents data collected of 2013, adding to previous year data collections (Himes-Cornell and Kent 2014a; 2014b). We aim to improve upon the survey as some findings have led to further questions. For example, the social network results are highly insightful and we are interested in answering how the social networks came to exist or why communities access specific communities for fishery information and resources. It will also be helpful to increase our understanding of community perception of changes in resource abundance as respondents have place-based knowledge of the resources that could be incorporated into the scientific and management process. We aim to answer these and other questions in future iterations of the survey.

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APPENDIX A: REGIONAL RESPONSE DISTRIBUTION TABLES

Appendix Table A1. -- Regional breakdown of responses to the following question: How many people live in your community as year-round residents? (Q1a).

Region	N	Mean	Median	Max	Min	St.Dev.
Aleutian and Pribilof Islands	12	2944	181	32324	55	9255.24
Anchorage and Mat-Su	4	76421	2252	301000	182	149731.52
Bristol Bay and Alaska Peninsula	23	1144	129	14000	1	3090.08
Interior	17	553	249	2508	29	2956.05
Kenai Peninsula and Cook Inlet	9	273	165	950	12	770.95
Kodiak Island	7	241	132	857	80	281.07
Kuskokwim River Mouth	19	356	330	1255	50	323.64
Northern Alaska	6	3401	765	13856	24	5421.47
Norton Sound and Bering Strait	23	1744	154	33000	0	6828.69
Prince William Sound	5	689	235	2302	68	7052.22
Southeast	23	1937	200	35000	1	7229.43

Appendix Table A2. -- Regional breakdown of responses to the following question: How many people live in your community as seasonal workers or transients? (Q1b).

Region	N	Mean	Median	Max	Min	St.Dev.
Aleutian and Pribilof Islands	12	462	175	2500	0	745.71
Anchorage and Mat-Su	4	563	250	1750	0	825.56
Bristol Bay and Alaska Peninsula	23	684	50	5500	0	1568.84
Interior	17	532	20	7500	0	1814.36
Kenai Peninsula and Cook Inlet	9	482	100	2500	0	848.39
Kodiak Island	7	355	20	2000	10	739.16
Kuskokwim River Mouth	19	81	20	680	0	164.44
Northern Alaska	6	97	2	400	5	152.63
Norton Sound and Bering Strait	23	140	40	1000	0	285.31
Prince William Sound	5	568	31	2500	0	1086.93
Southeast	23	260	50	1200	0	376.26

Appendix Table A3. -- Regional breakdown of responses to the following question: How many live in your community as year round-residents and work in a shore-side processing plant? (Q1c).

Region	N	Mean	Median	Max	Min	St.Dev.	% working in shore-side processing
Aleutian and Pribilof Islands	12	59	6	250	0	90.57	15.50%
Anchorage and Mat-Su	4	1	1	1	0	0.50	0.14%
Bristol Bay and Alaska Peninsula	23	10	0	100	0	29.85	1.92%
Interior	17	1	0	1	0	0.39	0.08%
Kenai Peninsula and Cook Inlet	9	58	1	380	0	122.94	38.24%
Kodiak Island	7	429	0	3000	0	1133.64	50.60%
Kuskokwim River Mouth	19	77	9	650	0	193.78	37.56%
Northern Alaska	6	1	0	1	0	0.41	0.03%
Norton Sound and Bering Strait	23	60	2	999	0	207.38	48.74%
Prince William Sound	5	860	0	4300	0	1922.80	37.57%
Southeast	23	37	4	250	0	67.85	41.84%

Appendix Table A4. -- Regional breakdown of responses to the following question: In what month(s) does the population in your community reach its annual peak? (Q4).

Region	N	Jan	Feb	March	April	May	June
Aleutian and Pribilof Islands	12	25.00%	41.67%	41.67%	33.33%	16.67%	25.00%
Anchorage and Mat-Su	4	0.00%	0.00%	0.00%	0.00%	0.00%	25.00%
Bristol Bay and Alaska Peninsula	22	4.55%	4.55%	4.55%	4.55%	13.64%	54.55%
Interior	15	0.00%	0.00%	0.00%	0.00%	0.00%	26.67%
Kenai Peninsula and Cook Inlet	9	0.00%	0.00%	0.00%	0.00%	22.22%	66.67%
Kodiak Island	7	0.00%	0.00%	0.00%	0.00%	14.29%	71.43%
Kuskokwim River Mouth	19	0.00%	0.00%	0.00%	0.00%	10.53%	52.63%
Northern Alaska	5	20.00%	20.00%	20.00%	20.00%	20.00%	60.00%
Norton Sound and Bering Strait	21	4.76%	4.76%	14.29%	14.29%	47.62%	47.62%
Prince William Sound	5	0.00%	0.00%	0.00%	0.00%	20.00%	60.00%
Southeast	23	0.00%	0.00%	0.00%	0.00%	4.35%	26.09%

Appendix Table A4. -- Cont.

Region	N	July	August	Sept	Oct	Nov	Dec	No peak
Aleutian and Pribilof Islands	12	50.00%	41.67%	25.00%	8.33%	0.00%	8.33%	0.00%
Anchorage and Mat-Su	4	75.00%	25.00%	0.00%	0.00%	0.00%	0.00%	25.00%
Bristol Bay and Alaska Peninsula	22	77.27%	36.36%	18.18%	9.09%	4.55%	4.55%	0.00%
Interior	15	66.67%	20.00%	20.00%	13.33%	0.00%	0.00%	0.00%
Kenai Peninsula and Cook Inlet	9	77.78%	44.44%	11.11%	0.00%	0.00%	0.00%	0.00%
Kodiak Island	7	85.71%	71.43%	0.00%	0.00%	0.00%	0.00%	14.29%
Kuskokwim River Mouth	19	57.89%	36.84%	10.53%	0.00%	0.00%	0.00%	0.00%
Northern Alaska	5	60.00%	40.00%	40.00%	20.00%	20.00%	60.00%	0.00%
Norton Sound and Bering Strait	21	71.43%	66.67%	19.05%	14.29%	9.52%	14.29%	0.00%
Prince William Sound	5	40.00%	40.00%	0.00%	20.00%	0.00%	0.00%	0.00%
Southeast	23	82.61%	69.57%	4.35%	4.35%	0.00%	0.00%	0.00%

Appendix Table A5. -- Regional breakdown of responses to the following question: On average, which months per year does your community have seasonal workers living there? (Q2).

Region	N	Jan	Feb	March	April	May	June	July
Aleutian and Pribilof Islands	7	29%	29%	29%	43%	29%	57%	71%
Anchorage and Mat-Su	4	0%	0%	0%	0%	50%	50%	75%
Bristol Bay and Alaska Peninsula	15	7%	7%	7%	13%	87%	100%	100%
Interior	13	8%	8%	15%	23%	77%	85%	85%
Kenai Peninsula and Cook Inlet	8	13%	13%	13%	25%	63%	100%	100%
Kodiak Island	5	0%	0%	0%	60%	80%	100%	100%
Kuskokwim River Mouth	4	0%	0%	25%	25%	25%	75%	100%
Northern Alaska	2	50%	50%	50%	50%	50%	50%	100%
Norton Sound and Bering Strait	19	16%	16%	16%	16%	53%	84%	89%
Prince William Sound	4	0%	0%	50%	50%	75%	100%	100%
Southeast	18	6%	6%	17%	28%	72%	94%	100%

Appendix Table A5. -- Cont.

Region	N	August	Sept	Oct	Nov	Dec	All year	None
Aleutian and Pribilof Islands	7	71%	57%	43%	14%	14%	0.00%	8.33%
Anchorage and Mat-Su	4	75%	50%	0%	0%	0%	0.00%	25.00%
Bristol Bay and Alaska Peninsula	15	100%	67%	27%	13%	7%	6.67%	0.00%
Interior	13	85%	77%	31%	8%	8%	7.69%	15.38%
Kenai Peninsula and Cook Inlet	8	100%	75%	25%	13%	13%	12.50%	0.00%
Kodiak Island	5	100%	100%	40%	0%	0%	0.00%	0.00%
Kuskokwim River Mouth	4	75%	25%	0%	0%	0%	0.00%	0.00%
Northern Alaska	2	50%	50%	50%	50%	50%	50.00%	0.00%
Norton Sound and Bering Strait	19	95%	84%	42%	21%	16%	10.53%	0.00%
Prince William Sound	4	100%	75%	50%	25%	0%	0.00%	0.00%
Southeast	18	100%	83%	11%	6%	6%	5.56%	0.00%

Appendix Table A6. -- Regional breakdown of responses to the following question: To what degree is this peak in population driven by employment in the fishing sectors? (Q5).

Region	N	Entirely	Mostly	Somewhat	A little	Not at all
Aleutian and Pribilof Islands	11	45.45%	18.18%	9.09%	18.18%	9.09%
Anchorage and Mat-Su	4	0.00%	0.00%	50.00%	0.00%	50.00%
Bristol Bay and Alaska Peninsula	23	30.43%	17.39%	13.04%	4.35%	34.78%
Interior	17	5.88%	17.65%	17.65%	17.65%	41.18%
Kenai Peninsula and Cook Inlet	8	0.00%	37.50%	37.50%	25.00%	0.00%
Kodiak Island	7	0.00%	42.86%	0.00%	28.57%	28.57%
Kuskokwim River Mouth	19	15.79%	21.05%	31.58%	15.79%	15.79%
Northern Alaska	6	16.67%	16.67%	16.67%	33.33%	16.67%
Norton Sound and Bering Strait	23	30.43%	26.09%	13.04%	21.74%	8.70%
Prince William Sound	5	20.00%	20.00%	0.00%	60.00%	0.00%
Southeast	22	18.18%	22.73%	18.18%	22.73%	18.18%

Appendix Table A7. -- Regional breakdown of responses to the following question: Which, if any, natural resource-based industries does your community's economy rely upon? (Q24).

Region	N	Mining	Logging	Fishing	Oil and gas	Geo-thermal	Eco-tourism	Sportfishing & hunting
Aleutian and Pribilof Islands	12	0.00%	0.00%	91.67%	0.00%	0.00%	16.67%	33.33%
Anchorage and Mat-Su	4	50.00%	0.00%	50.00%	25.00%	0.00%	50.00%	50.00%
Bristol Bay and Alaska Peninsula	22	4.55%	4.55%	90.91%	4.55%	0.00%	18.18%	77.27%
Interior	16	37.50%	31.25%	25.00%	25.00%	0.00%	12.50%	18.75%
Kenai Peninsula and Cook Inlet	9	0.00%	0.00%	77.78%	55.56%	0.00%	33.33%	55.56%
Kodiak Island	7	14.29%	42.86%	85.71%	0.00%	0.00%	57.14%	71.43%
Kuskokwim River Mouth	19	5.26%	15.79%	73.68%	0.00%	0.00%	5.26%	15.79%
Northern Alaska	6	16.67%	0.00%	33.33%	0.00%	0.00%	16.67%	16.67%
Norton Sound and Bering Strait	23	8.70%	13.04%	69.57%	4.35%	0.00%	8.70%	30.43%
Prince William Sound	5	0.00%	0.00%	60.00%	20.00%	0.00%	60.00%	40.00%
Southeast	23	17.39%	43.48%	95.65%	0.00%	0.00%	60.87%	82.61%

Appendix Table A8. -- Regional breakdown of responses to the following question: How many feet of public dock space for moorage are located in and around the port of your community for permanent vessels? (Q12).

Region	N	None	<500 ft	500-1000 ft	1000-3000 ft	3000-8000 ft	>8000 ft
Aleutian and Pribilof Islands	10	50.00%	10.00%	10.00%	10.00%	10.00%	10.00%
Anchorage and Mat-Su	4	75.00%	25.00%	0.00%	0.00%	0.00%	0.00%
Bristol Bay and Alaska Peninsula	18	88.89%	5.56%	0.00%	5.56%	0.00%	0.00%
Interior	16	93.75%	6.25%	0.00%	0.00%	0.00%	0.00%
Kenai Peninsula and Cook Inlet	9	25.00%	37.50%	0.00%	0.00%	12.50%	25.00%
Kodiak Island	6	16.67%	0.00%	0.00%	66.67%	0.00%	16.67%
Kuskokwim River Mouth	18	77.78%	16.67%	0.00%	5.56%	0.00%	0.00%
Northern Alaska	6	83.33%	16.67%	0.00%	0.00%	0.00%	0.00%
Norton Sound and Bering Strait	19	63.16%	26.32%	0.00%	5.26%	5.26%	0.00%
Prince William Sound	3	33.33%	33.33%	0.00%	0.00%	0.00%	33.33%
Southeast	18	5.56%	27.78%	11.11%	16.67%	22.22%	16.67%

Appendix Table A9. -- Regional breakdown of responses to the following question: How many feet of public dock space for moorage are located in and around the port of your community for temporary vessels? (Q12).

Region	N	None	<500 ft	500-1000 ft	1000-3000 ft	3000-8000 ft	>8000 ft
Aleutian and Pribilof Islands	9	22.22%	22.22%	22.22%	11.11%	11.11%	11.11%
Anchorage and Mat-Su	4	75.00%	25.00%	0.00%	0.00%	0.00%	0.00%
Bristol Bay and Alaska Peninsula	15	86.67%	13.33%	0.00%	0.00%	0.00%	0.00%
Interior	15	93.33%	6.67%	0.00%	0.00%	0.00%	0.00%
Kenai Peninsula and Cook Inlet	7	28.57%	28.57%	14.29%	0.00%	0.00%	28.57%
Kodiak Island	5	40.00%	40.00%	20.00%	0.00%	0.00%	0.00%
Kuskokwim River Mouth	14	78.57%	14.29%	0.00%	7.14%	0.00%	0.00%
Northern Alaska	6	83.33%	16.67%	0.00%	0.00%	0.00%	0.00%
Norton Sound and Bering Strait	17	70.59%	23.53%	0.00%	5.88%	0.00%	0.00%
Prince William Sound	4	50.00%	25.00%	25.00%	0.00%	0.00%	0.00%
Southeast	19	5.26%	42.11%	26.32%	15.79%	5.26%	5.26%

Appendix Table A10. -- Regional breakdown of responses to the following question: What is the maximum vessel length that can use moorage in your community? (Q11).

Region	N	0 ft	1-100 ft	100-200 ft	200-300 ft	300-400 ft	400-500 ft	>500 ft
Aleutian and Pribilof Islands	12	25.00%	16.67%	8.33%	0.00%	16.67%	16.67%	16.67%
Anchorage and Mat-Su	4	75.00%	25.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Bristol Bay and Alaska Peninsula	22	45.45%	36.36%	4.55%	0.00%	0.00%	4.55%	9.09%
Interior	16	75.00%	18.75%	6.25%	0.00%	0.00%	0.00%	0.00%
Kenai Peninsula and Cook Inlet	8	25.00%	25.00%	25.00%	12.50%	0.00%	0.00%	12.50%
Kodiak Island	7	28.57%	14.29%	14.29%	14.29%	14.29%	0.00%	14.29%
Kuskokwim River Mouth	16	50.00%	18.75%	25.00%	0.00%	0.00%	6.25%	0.00%
Northern Alaska	6	50.00%	33.33%	16.67%	0.00%	0.00%	0.00%	0.00%
Norton Sound and Bering Strait	22	31.82%	40.91%	18.18%	4.55%	0.00%	4.55%	0.00%
Prince William Sound	4	50.00%	25.00%	25.00%	0.00%	0.00%	0.00%	0.00%
Southeast	22	0.00%	40.91%	22.73%	9.09%	13.64%	0.00%	13.64%

Appendix Table A11. -- Regional breakdown of responses to the following question: Which of the following types of regulated vessels is the port of your community capable of handling? (Q14).

Region	N	Rescue vessels	Cruise ships	Ferries	Fuel barges	HAZ-MAT	None
Aleutian and Pribilof Islands	12	50.00%	33.33%	58.33%	91.67%	33.33%	8.33%
Anchorage and Mat-Su	3	33.33%	33.33%	33.33%	33.33%	33.33%	66.67%
Bristol Bay and Alaska Peninsula	20	10.00%	0.00%	5.00%	70.00%	10.00%	35.00%
Interior	15	6.67%	6.67%	6.67%	53.33%	6.67%	53.33%
Kenai Peninsula and Cook Inlet	9	33.33%	22.22%	33.33%	55.56%	33.33%	33.33%
Kodiak Island	7	57.14%	28.57%	57.14%	57.14%	14.29%	28.57%
Kuskokwim River Mouth	18	16.67%	11.11%	5.56%	72.22%	16.67%	22.22%
Northern Alaska	6	0.00%	0.00%	0.00%	50.00%	16.67%	50.00%
Norton Sound and Bering Strait	21	28.57%	14.29%	9.52%	85.71%	19.05%	19.05%
Prince William Sound	4	25.00%	0.00%	25.00%	25.00%	25.00%	75.00%
Southeast	23	82.61%	52.17%	47.83%	60.87%	34.78%	17.39%

Appendix Table A12. -- Distribution of responses to the following question: Which of the following types of infrastructure projects have been completed in your community in the last 10 years, are currently in progress, or are being planned for completion in the next 10 years? (Q10).

Type of infrastructure project	Completed in the last 10 years?			Currently in progress?			Plan to complete in the next 10 years?		
	n	% item respondents	% survey respondents	n	% item respondents	% survey respondents	n	% item respondents	% survey respondents
Fish cleaning station	34	23.94%	22.97%	4	2.82%	2.70%	13	9.15%	8.78%
Barge landing area	48	33.80%	32.43%	21	14.79%	14.19%	21	14.79%	14.19%
Construct new dock space	24	16.90%	16.22%	23	16.20%	15.54%	32	22.54%	21.62%
Improve existing dock structure	30	21.13%	20.27%	29	20.42%	19.59%	37	26.06%	25.00%
Electricity serving the dock	29	20.42%	19.59%	13	9.15%	8.78%	19	13.38%	12.84%
Water serving the dock	28	19.72%	18.92%	11	7.75%	7.43%	17	11.97%	11.49%
Roads serving dock space	39	27.46%	26.35%	13	9.15%	8.78%	20	14.08%	13.51%
Pilings	28	19.72%	18.92%	15	10.56%	10.14%	15	10.56%	10.14%
Fuel tanks at dock	26	18.31%	17.57%	5	3.52%	3.38%	12	8.45%	8.11%
Breakwater	21	14.78%	14.19%	15	10.56%	10.14%	27	19.01%	18.24%
Harbor dredging	19	13.38%	12.84%	11	7.75%	7.43%	19	13.38%	12.84%
Jetty	7	4.93%	4.73%	1	0.70%	0.68%	8	5.63%	5.41%
Dry dock space	15	10.56%	10.14%	6	4.23%	4.05%	15	10.56%	10.14%
Haul out facilities	23	16.20%	15.54%	9	6.34%	6.08%	17	11.97%	11.49%
EPA certified boat cleaning station	8	5.63%	5.41%	2	1.41%	1.35%	13	9.15%	8.78%
Broadband internet access	55	38.73%	37.16%	22	15.49%	14.86%	14	9.86%	9.46%
Road	52	36.62%	35.14%	23	16.20%	15.54%	27	19.01%	18.24%
Airport/seaplane base	48	33.80%	32.43%	14	9.86%	9.46%	11	7.75%	7.43%
Water and sewer pipelines	58	40.85%	39.19%	30	21.13%	20.27%	27	19.01%	18.24%
Diesel powerhouse	51	35.92%	34.46%	11	7.75%	7.43%	9	6.34%	6.08%
Sewage treatment	49	34.51%	33.11%	13	9.15%	8.78%	19	13.38%	12.84%
Water treatment	62	43.66%	41.89%	20	14.08%	13.51%	19	13.38%	12.84%
Alternative energy (e.g., hydro, wind, tidal).	29	20.42%	19.59%	28	19.72%	18.92%	25	17.61%	16.89%
New landfill/solid waste site	39	27.46%	26.35%	22	15.49%	14.86%	33	23.24%	22.30%
Community center/Library	46	32.39%	31.08%	15	10.56%	10.14%	19	13.38%	12.84%
Public safety – Police department	44	30.99%	29.73%	15	10.56%	10.14%	13	9.15%	8.78%
Emergency response	47	33.10%	31.76%	17	11.97%	11.49%	9	6.34%	6.08%
Fire department	48	33.80%	32.43%	19	13.38%	12.84%	15	10.56%	10.14%
School	65	45.77%	43.92%	12	8.45%	8.11%	3	2.11%	2.03%
Telephone service	59	41.55%	39.86%	10	7.04%	6.76%	3	2.11%	2.03%
Post office	62	43.66%	41.89%	6	4.23%	4.05%	5	3.52%	3.38%
Other	7	4.93%	4.73%	9	6.34%	6.08%	9	6.34%	6.08%

Appendix Table A13. -- Regional breakdown of responses to the following question: Which of the following types of infrastructure projects have been completed in the last 10 years, are currently in progress, or are being planned for completion in the next 10 years? (Q10). *Aleutian and Pribilof Islands*. Item response n = 11.

	Completed in the last 10 years?	**Currently in progress?**	**Plan to complete in the next 10 years?**
Fish cleaning station	27.27%	0.00%	0.00%
Barge landing area	45.45%	9.09%	18.18%
Construct new dock space	36.36%	9.09%	45.45%
Improve existing dock structure	36.36%	36.36%	45.45%
Electricity serving the dock	45.45%	9.09%	18.18%
Water serving the dock	63.64%	9.09%	0.00%
Roads serving dock space	63.64%	0.00%	18.18%
Pilings	45.45%	27.27%	9.09%
Fuel tanks at dock	27.27%	0.00%	9.09%
Breakwater	45.45%	9.09%	27.27%
Harbor dredging	36.36%	0.00%	45.45%
Jetty	27.27%	0.00%	18.18%
Dry dock space	18.18%	0.00%	36.36%
Haul out facilities	45.45%	0.00%	27.27%
EPA certified boat cleaning station	18.18%	0.00%	27.27%
Broadband internet access	36.36%	36.36%	9.09%
Road	36.36%	0.00%	9.09%
Airport/seaplane base	63.64%	0.00%	9.09%
Water and sewer pipelines	54.55%	9.09%	18.18%
Diesel powerhouse	54.55%	18.18%	27.27%
Sewage treatment	27.27%	18.18%	9.09%
Water treatment	45.45%	36.36%	9.09%
Alternative energy (e.g., hydro, wind, tidal).	36.36%	18.18%	18.18%
New landfill/solid waste site	9.09%	9.09%	45.45%
Community center/Library	45.45%	9.09%	0.00%
Public safety – Police department	27.27%	0.00%	27.27%
Emergency response	27.27%	9.09%	27.27%
Fire department	27.27%	9.09%	27.27%
School	36.36%	0.00%	0.00%
Telephone service	36.36%	9.09%	9.09%
Post office	54.55%	9.09%	0.00%
Other	9.09%	0.00%	0.00%

Appendix Table A14. -- Regional breakdown of responses to the following question: Which of the following types of infrastructure projects have been completed in your community in the last 10 years, are currently in progress, or are being planned for completion in the next 10 years? (Q10). *Anchorage and Mat-Su.* Item response n = 4.

	Completed in the last 10 years?	**Currently in progress?**	**Plan to complete in the next 10 years?**
Fish cleaning station	25.00%	0.00%	0.00%
Barge landing area	25.00%	0.00%	0.00%
Construct new dock space	0.00%	0.00%	25.00%
Improve existing dock structure	0.00%	0.00%	25.00%
Electricity serving the dock	0.00%	0.00%	25.00%
Water serving the dock	0.00%	0.00%	25.00%
Roads serving dock space	25.00%	0.00%	25.00%
Pilings	0.00%	25.00%	25.00%
Fuel tanks at dock	0.00%	0.00%	25.00%
Breakwater	0.00%	50.00%	0.00%
Harbor dredging	0.00%	25.00%	0.00%
Jetty	0.00%	0.00%	0.00%
Dry dock space	25.00%	0.00%	0.00%
Haul out facilities	0.00%	0.00%	0.00%
EPA certified boat cleaning station	0.00%	0.00%	0.00%
Broadband internet access	25.00%	0.00%	25.00%
Road	75.00%	0.00%	50.00%
Airport/seaplane base	0.00%	25.00%	0.00%
Water and sewer pipelines	75.00%	75.00%	50.00%
Diesel powerhouse	0.00%	25.00%	25.00%
Sewage treatment	50.00%	25.00%	0.00%
Water treatment	25.00%	25.00%	0.00%
Alternative energy (e.g., hydro, wind, tidal).	25.00%	0.00%	0.00%
New landfill/solid waste site	50.00%	25.00%	25.00%
Community center/Library	50.00%	25.00%	25.00%
Public safety – Police department	0.00%	0.00%	0.00%
Emergency response	25.00%	0.00%	0.00%
Fire department	50.00%	25.00%	0.00%
School	50.00%	25.00%	0.00%
Telephone service	25.00%	25.00%	0.00%
Post office	25.00%	0.00%	0.00%
Other	0.00%	0.00%	0.00%

Appendix Table A15. -- Regional breakdown of responses to the following question: Which of the following types of infrastructure projects have been completed in your community in the last 10 years, are currently in progress, or are being planned for completion in the next 10 years? (Q10). *Bristol Bay and Alaska Peninsula.* Item response n = 23.

	Completed in the last 10 years?	**Currently in progress?**	**Plan to complete in the next 10 years?**
Fish cleaning station	8.70%	4.35%	8.70%
Barge landing area	39.13%	13.04%	13.04%
Construct new dock space	13.04%	17.39%	21.74%
Improve existing dock structure	17.39%	13.04%	21.74%
Electricity serving the dock	17.39%	8.70%	8.70%
Water serving the dock	13.04%	4.35%	8.70%
Roads serving dock space	17.39%	8.70%	21.74%
Pilings	8.70%	4.35%	8.70%
Fuel tanks at dock	13.04%	4.35%	8.70%
Breakwater	0.00%	13.04%	8.70%
Harbor dredging	8.70%	8.70%	0.00%
Jetty	0.00%	4.35%	0.00%
Dry dock space	8.70%	4.35%	8.70%
Haul out facilities	17.39%	13.04%	8.70%
EPA certified boat cleaning station	0.00%	0.00%	4.35%
Broadband internet access	52.17%	8.70%	8.70%
Road	43.48%	17.39%	21.74%
Airport/seaplane base	34.78%	21.74%	13.04%
Water and sewer pipelines	43.48%	30.43%	17.39%
Diesel powerhouse	43.48%	13.04%	0.00%
Sewage treatment	39.13%	17.39%	17.39%
Water treatment	34.78%	21.74%	13.04%
Alternative energy (e.g., hydro, wind, tidal).	26.09%	17.39%	17.39%
New landfill/solid waste site	47.83%	26.09%	13.04%
Community center/Library	52.17%	8.70%	17.39%
Public safety – Police department	26.09%	17.39%	13.04%
Emergency response	34.78%	21.74%	8.70%
Fire department	30.43%	21.74%	21.74%
School	52.17%	21.74%	4.35%
Telephone service	65.22%	17.39%	4.35%
Post office	52.17%	13.04%	4.35%
Other	8.70%	0.00%	4.35%

Appendix Table A16. -- Regional breakdown of responses to the following question: Which of the following types of infrastructure projects have been completed in your community in the last 10 years, are currently in progress, or are being planned for completion in the next 10 years? (Q10). *Interior.* Item response n = 15.

	Completed in the last 10 years?	**Currently in progress?**	**Plan to complete in the next 10 years?**
Fish cleaning station	0.00%	0.00%	13.33%
Barge landing area	26.67%	13.33%	26.67%
Construct new dock space	0.00%	0.00%	33.33%
Improve existing dock structure	13.33%	6.67%	13.33%
Electricity serving the dock	0.00%	0.00%	13.33%
Water serving the dock	6.67%	0.00%	13.33%
Roads serving dock space	20.00%	0.00%	6.67%
Pilings	6.67%	6.67%	6.67%
Fuel tanks at dock	6.67%	0.00%	6.67%
Breakwater	0.00%	6.67%	6.67%
Harbor dredging	6.67%	0.00%	0.00%
Jetty	0.00%	0.00%	0.00%
Dry dock space	0.00%	0.00%	0.00%
Haul out facilities	0.00%	0.00%	6.67%
EPA certified boat cleaning station	0.00%	0.00%	0.00%
Broadband internet access	26.67%	0.00%	0.00%
Road	26.67%	13.33%	20.00%
Airport/seaplane base	6.67%	0.00%	0.00%
Water and sewer pipelines	20.00%	20.00%	20.00%
Diesel powerhouse	20.00%	0.00%	0.00%
Sewage treatment	26.67%	0.00%	6.67%
Water treatment	33.33%	6.67%	6.67%
Alternative energy (e.g., hydro, wind, tidal).	13.33%	13.33%	20.00%
New landfill/solid waste site	26.67%	0.00%	40.00%
Community center/Library	33.33%	13.33%	0.00%
Public safety – Police department	6.67%	13.33%	6.67%
Emergency response	20.00%	0.00%	0.00%
Fire department	26.67%	0.00%	0.00%
School	20.00%	6.67%	0.00%
Telephone service	13.33%	0.00%	0.00%
Post office	20.00%	0.00%	0.00%
Other	0.00%	0.00%	6.67%

Appendix Table A17. -- Regional breakdown of responses to the following question: Which of the following types of infrastructure projects have been completed in your community in the last 10 years, are currently in progress, or are being planned for completion in the next 10 years? (Q10). *Kenai Peninsula and Cook Inlet.* Item response n = 9.

	Completed in the last 10 years?	**Currently in progress?**	**Plan to complete in the next 10 years?**
Fish cleaning station	44.44%	11.11%	33.33%
Barge landing area	44.44%	11.11%	0.00%
Construct new dock space	11.11%	22.22%	22.22%
Improve existing dock structure	33.33%	44.44%	22.22%
Electricity serving the dock	44.44%	33.33%	22.22%
Water serving the dock	44.44%	33.33%	11.11%
Roads serving dock space	55.56%	11.11%	0.00%
Pilings	44.44%	33.33%	22.22%
Fuel tanks at dock	33.33%	0.00%	0.00%
Breakwater	55.56%	22.22%	22.22%
Harbor dredging	33.33%	33.33%	44.44%
Jetty	11.11%	0.00%	11.11%
Dry dock space	22.22%	22.22%	22.22%
Haul out facilities	33.33%	22.22%	22.22%
EPA certified boat cleaning station	22.22%	11.11%	11.11%
Broadband internet access	22.22%	55.56%	0.00%
Road	55.56%	22.22%	11.11%
Airport/seaplane base	33.33%	33.33%	0.00%
Water and sewer pipelines	55.56%	44.44%	11.11%
Diesel powerhouse	33.33%	11.11%	22.22%
Sewage treatment	44.44%	22.22%	22.22%
Water treatment	55.56%	33.33%	33.33%
Alternative energy (e.g., hydro, wind, tidal).	11.11%	33.33%	22.22%
New landfill/solid waste site	44.44%	0.00%	11.11%
Community center/Library	44.44%	44.44%	11.11%
Public safety – Police department	44.44%	11.11%	0.00%
Emergency response	77.78%	11.11%	0.00%
Fire department	100.00%	22.22%	0.00%
School	77.78%	0.00%	0.00%
Telephone service	66.67%	11.11%	11.11%
Post office	77.78%	11.11%	11.11%
Other	0.00%	11.11%	11.11%

Appendix Table A18. -- Regional breakdown of responses to the following question: Which of the following types of infrastructure projects have been completed in your community in the last 10 years, are currently in progress, or are being planned for completion in the next 10 years? (Q10). *Kodiak Island.* Item response n = 6.

	Completed in the last 10 years?	**Currently in progress?**	**Plan to complete in the next 10 years?**
Fish cleaning station	33.33%	0.00%	16.67%
Barge landing area	33.33%	16.67%	0.00%
Construct new dock space	50.00%	16.67%	0.00%
Improve existing dock structure	16.67%	33.33%	0.00%
Electricity serving the dock	66.67%	0.00%	0.00%
Water serving the dock	16.67%	16.67%	0.00%
Roads serving dock space	50.00%	0.00%	0.00%
Pilings	33.33%	16.67%	0.00%
Fuel tanks at dock	50.00%	0.00%	0.00%
Breakwater	33.33%	0.00%	16.67%
Harbor dredging	0.00%	16.67%	16.67%
Jetty	0.00%	0.00%	0.00%
Dry dock space	16.67%	0.00%	0.00%
Haul out facilities	33.33%	0.00%	0.00%
EPA certified boat cleaning station	0.00%	0.00%	0.00%
Broadband internet access	50.00%	33.33%	0.00%
Road	33.33%	33.33%	0.00%
Airport/seaplane base	33.33%	16.67%	0.00%
Water and sewer pipelines	16.67%	50.00%	0.00%
Diesel powerhouse	50.00%	16.67%	0.00%
Sewage treatment	50.00%	0.00%	0.00%
Water treatment	66.67%	0.00%	0.00%
Alternative energy (e.g., hydro, wind, tidal).	33.33%	33.33%	16.67%
New landfill/solid waste site	0.00%	33.33%	16.67%
Community center/Library	33.33%	0.00%	16.67%
Public safety – Police department	33.33%	0.00%	0.00%
Emergency response	16.67%	0.00%	0.00%
Fire department	16.67%	0.00%	33.33%
School	33.33%	0.00%	0.00%
Telephone service	16.67%	0.00%	0.00%
Post office	16.67%	0.00%	0.00%
Other	0.00%	0.00%	0.00%

Appendix Table A19. -- Regional breakdown of responses to the following question: Which of the following types of infrastructure projects have been completed in your community in the last 10 years, are currently in progress, or are being planned for completion in the next 10 years? (Q10). *Kuskokwim River Mouth.* Item response n = 18.

	Completed in the last 10 years?	**Currently in progress?**	**Plan to complete in the next 10 years?**
Fish cleaning station	22.22%	0.00%	0.00%
Barge landing area	38.89%	27.78%	11.11%
Construct new dock space	5.56%	27.78%	11.11%
Improve existing dock structure	5.56%	16.67%	27.78%
Electricity serving the dock	5.56%	11.11%	11.11%
Water serving the dock	0.00%	11.11%	11.11%
Roads serving dock space	0.00%	22.22%	11.11%
Pilings	11.11%	0.00%	11.11%
Fuel tanks at dock	33.33%	5.56%	11.11%
Breakwater	22.22%	5.56%	16.67%
Harbor dredging	11.11%	16.67%	5.56%
Jetty	11.11%	0.00%	5.56%
Dry dock space	11.11%	11.11%	11.11%
Haul out facilities	0.00%	5.56%	5.56%
EPA certified boat cleaning station	0.00%	0.00%	11.11%
Broadband internet access	44.44%	16.67%	5.56%
Road	38.89%	33.33%	27.78%
Airport/seaplane base	44.44%	16.67%	11.11%
Water and sewer pipelines	38.89%	16.67%	22.22%
Diesel powerhouse	27.78%	0.00%	16.67%
Sewage treatment	33.33%	16.67%	27.78%
Water treatment	44.44%	16.67%	27.78%
Alternative energy (e.g., hydro, wind, tidal).	11.11%	11.11%	22.22%
New landfill/solid waste site	16.67%	22.22%	38.89%
Community center/Library	16.67%	5.56%	22.22%
Public safety – Police department	44.44%	11.11%	16.67%
Emergency response	33.33%	11.11%	11.11%
Fire department	27.78%	11.11%	5.56%
School	61.11%	16.67%	5.56%
Telephone service	50.00%	0.00%	0.00%
Post office	66.67%	0.00%	5.56%
Other	11.11%	11.11%	16.67%

Appendix Table A20. -- Regional breakdown of responses to the following question: Which of the following types of infrastructure projects have been completed in your community in the last 10 years, are currently in progress, or are being planned for completion in the next 10 years? (Q10). *Northern Alaska.* Item response n = 6.

	Completed in the last 10 years?	**Currently in progress?**	**Plan to complete in the next 10 years?**
Fish cleaning station	0.00%	0.00%	0.00%
Barge landing area	16.67%	16.67%	33.33%
Construct new dock space	16.67%	0.00%	16.67%
Improve existing dock structure	0.00%	0.00%	33.33%
Electricity serving the dock	0.00%	0.00%	16.67%
Water serving the dock	0.00%	0.00%	0.00%
Roads serving dock space	16.67%	0.00%	16.67%
Pilings	0.00%	0.00%	0.00%
Fuel tanks at dock	0.00%	0.00%	0.00%
Breakwater	0.00%	0.00%	16.67%
Harbor dredging	0.00%	0.00%	0.00%
Jetty	0.00%	0.00%	0.00%
Dry dock space	0.00%	0.00%	0.00%
Haul out facilities	0.00%	0.00%	0.00%
EPA certified boat cleaning station	0.00%	0.00%	0.00%
Broadband internet access	66.67%	0.00%	16.67%
Road	16.67%	16.67%	16.67%
Airport/seaplane base	33.33%	0.00%	0.00%
Water and sewer pipelines	50.00%	0.00%	0.00%
Diesel powerhouse	50.00%	0.00%	0.00%
Sewage treatment	50.00%	0.00%	0.00%
Water treatment	66.67%	16.67%	16.67%
Alternative energy (e.g., hydro, wind, tidal).	0.00%	16.67%	0.00%
New landfill/solid waste site	33.33%	16.67%	33.33%
Community center/Library	33.33%	0.00%	0.00%
Public safety – Police department	50.00%	0.00%	0.00%
Emergency response	16.67%	0.00%	0.00%
Fire department	66.67%	0.00%	0.00%
School	50.00%	0.00%	0.00%
Telephone service	50.00%	0.00%	0.00%
Post office	50.00%	0.00%	0.00%
Other	0.00%	16.67%	16.67%

Appendix Table A21. -- Regional breakdown of responses to the following question: Which of the following types of infrastructure projects have been completed in your community in the last 10 years, are currently in progress, or are being planned for completion in the next 10 years? (Q10). *Norton Sound and Bering Strait*. Item response n = 23.

	Completed in the last 10 years?	**Currently in progress?**	**Plan to complete in the next 10 years?**
Fish cleaning station	21.74%	4.35%	13.04%
Barge landing area	43.48%	21.74%	26.09%
Construct new dock space	4.35%	26.09%	26.09%
Improve existing dock structure	17.39%	21.74%	34.78%
Electricity serving the dock	4.35%	17.39%	26.09%
Water serving the dock	4.35%	13.04%	30.43%
Roads serving dock space	26.09%	21.74%	26.09%
Pilings	8.70%	13.04%	13.04%
Fuel tanks at dock	13.04%	4.35%	13.04%
Breakwater	8.70%	13.04%	26.09%
Harbor dredging	8.70%	4.35%	21.74%
Jetty	4.35%	0.00%	17.39%
Dry dock space	8.70%	4.35%	21.74%
Haul out facilities	8.70%	13.04%	17.39%
EPA certified boat cleaning station	0.00%	4.35%	17.39%
Broadband internet access	39.13%	17.39%	17.39%
Road	39.13%	13.04%	21.74%
Airport/seaplane base	43.48%	4.35%	13.04%
Water and sewer pipelines	52.17%	13.04%	17.39%
Diesel powerhouse	52.17%	13.04%	0.00%
Sewage treatment	52.17%	4.35%	8.70%
Water treatment	65.22%	8.70%	0.00%
Alternative energy (e.g., hydro, wind, tidal).	26.09%	26.09%	17.39%
New landfill/solid waste site	43.48%	26.09%	17.39%
Community center/Library	34.78%	8.70%	8.70%
Public safety – Police department	60.87%	17.39%	4.35%
Emergency response	43.48%	30.43%	4.35%
Fire department	30.43%	21.74%	8.70%
School	65.22%	4.35%	0.00%
Telephone service	56.52%	8.70%	0.00%
Post office	56.52%	4.35%	4.35%
Other	0.00%	8.70%	0.00%

Appendix Table A22. -- Regional breakdown of responses to the following question: Which of the following types of infrastructure projects have been completed in your community in the last 10 years, are currently in progress, or are being planned for completion in the next 10 years? (Q10). *Prince William Sound.* Item response n = 4.

	Completed in the last 10 years?	**Currently in progress?**	**Plan to complete in the next 10 years?**
Fish cleaning station	20.00%	0.00%	0.00%
Barge landing area	0.00%	20.00%	0.00%
Construct new dock space	0.00%	0.00%	20.00%
Improve existing dock structure	0.00%	0.00%	20.00%
Electricity serving the dock	20.00%	0.00%	0.00%
Water serving the dock	0.00%	0.00%	0.00%
Roads serving dock space	0.00%	0.00%	0.00%
Pilings	20.00%	0.00%	0.00%
Fuel tanks at dock	0.00%	0.00%	0.00%
Breakwater	0.00%	0.00%	20.00%
Harbor dredging	20.00%	0.00%	0.00%
Jetty	0.00%	0.00%	0.00%
Dry dock space	20.00%	0.00%	0.00%
Haul out facilities	20.00%	0.00%	0.00%
EPA certified boat cleaning station	20.00%	0.00%	0.00%
Broadband internet access	20.00%	0.00%	0.00%
Road	0.00%	0.00%	20.00%
Airport/seaplane base	20.00%	0.00%	0.00%
Water and sewer pipelines	20.00%	0.00%	0.00%
Diesel powerhouse	20.00%	0.00%	0.00%
Sewage treatment	0.00%	0.00%	0.00%
Water treatment	20.00%	0.00%	20.00%
Alternative energy (e.g., hydro, wind, tidal).	20.00%	0.00%	20.00%
New landfill/solid waste site	0.00%	0.00%	0.00%
Community center/Library	0.00%	0.00%	40.00%
Public safety – Police department	20.00%	0.00%	0.00%
Emergency response	40.00%	0.00%	0.00%
Fire department	20.00%	0.00%	0.00%
School	20.00%	0.00%	0.00%
Telephone service	20.00%	0.00%	0.00%
Post office	20.00%	0.00%	0.00%
Other	0.00%	20.00%	0.00%

Appendix Table A23. -- Regional breakdown of responses to the following question: Which of the following types of infrastructure projects have been completed in your community in the last 10 years, are currently in progress, or are being planned for completion in the next 10 years? (Q10). *Southeast*. Item response n = 23.

	Completed in the last 10 years?	**Currently in progress?**	**Plan to complete in the next 10 years?**
Fish cleaning station	52.17%	4.35%	8.70%
Barge landing area	21.74%	4.35%	8.70%
Construct new dock space	43.48%	17.39%	17.39%
Improve existing dock structure	47.83%	30.43%	26.09%
Electricity serving the dock	39.13%	4.35%	4.35%
Water serving the dock	47.83%	0.00%	8.70%
Roads serving dock space	39.13%	4.35%	8.70%
Pilings	39.13%	8.70%	13.04%
Fuel tanks at dock	17.39%	8.70%	8.70%
Breakwater	13.04%	8.70%	30.43%
Harbor dredging	17.39%	0.00%	13.04%
Jetty	0.00%	0.00%	0.00%
Dry dock space	8.70%	0.00%	0.00%
Haul out facilities	26.09%	0.00%	17.39%
EPA certified boat cleaning station	13.04%	0.00%	8.70%
Broadband internet access	26.09%	8.70%	17.39%
Road	30.43%	13.04%	13.04%
Airport/seaplane base	26.09%	0.00%	8.70%
Water and sewer pipelines	30.43%	13.04%	30.43%
Diesel powerhouse	21.74%	0.00%	0.00%
Sewage treatment	13.04%	0.00%	17.39%
Water treatment	21.74%	0.00%	17.39%
Alternative energy (e.g., hydro, wind, tidal).	17.39%	26.09%	17.39%
New landfill/solid waste site	8.70%	4.35%	13.04%
Community center/Library	13.04%	8.70%	17.39%
Public safety – Police department	8.70%	8.70%	8.70%
Emergency response	21.74%	4.35%	4.35%
Fire department	21.74%	13.04%	8.70%
School	21.74%	4.35%	4.35%
Telephone service	17.39%	4.35%	0.00%
Post office	13.04%	0.00%	4.35%
Other	0.00%	0.00%	0.00%

Appendix Table A24. -- Regional breakdown of responses to the following question: What types of fishing support businesses are located in your community? (Q21).

	Aleutian and Pribilof Islands	Anchorage and Mat-Su	Bristol Bay and Alaska Peninsula	Interior	Kenai Peninsula and Cook Inlet	Kodiak Island	Kusko-kwim River Mouth	Northern Alaska	Norton Sound and Bering Strait	Prince William Sound	Southeast
Fish processing plants	75.00%	25.00%	26.09%	6.25%	62.50%	42.86%	26.32%	0.00%	30.43%	20.00%	60.87%
Fishing gear sales	41.67%	75.00%	26.09%	25.00%	75.00%	14.29%	57.89%	0.00%	52.17%	80.00%	56.52%
Fishing gear manufacturer	8.33%	25.00%	8.70%	6.25%	12.50%	0.00%	0.00%	0.00%	8.70%	0.00%	0.00%
Boat repair	33.33%	25.00%	17.39%	12.50%	37.50%	0.00%	47.37%	0.00%	34.78%	40.00%	52.17%
Electrical	33.33%	25.00%	26.09%	12.50%	37.50%	14.29%	21.05%	0.00%	26.09%	60.00%	43.48%
Welding	58.33%	50.00%	30.43%	12.50%	75.00%	14.29%	68.42%	0.00%	52.17%	60.00%	52.17%
Mechanical services	41.67%	50.00%	26.09%	12.50%	50.00%	14.29%	57.89%	0.00%	34.78%	60.00%	39.13%
Machine Shop	41.67%	25.00%	21.74%	12.50%	37.50%	14.29%	42.11%	0.00%	34.78%	60.00%	30.43%
Hydraulics	41.67%	25.00%	21.74%	12.50%	37.50%	14.29%	5.26%	0.00%	21.74%	60.00%	34.78%
Haul-out facilities for small boats (less than 60 tons).	66.67%	0.00%	52.17%	6.25%	75.00%	14.29%	26.32%	0.00%	17.39%	40.00%	43.48%
Haul-out facilities for large boats (more than 60 tons).	25.00%	0.00%	8.70%	6.25%	37.50%	14.29%	5.26%	0.00%	0.00%	20.00%	17.39%
Tidal grid for small boats (less than 60 tons).	16.67%	0.00%	4.35%	0.00%	37.50%	28.57%	15.79%	0.00%	8.70%	20.00%	73.91%
Tidal grid for large boats (more than 60 tons).	16.67%	0.00%	0.00%	0.00%	25.00%	28.57%	5.26%	0.00%	4.35%	0.00%	43.48%
Commercial fishing vessel moorage	66.67%	0.00%	47.83%	6.25%	62.50%	57.14%	21.05%	0.00%	13.04%	20.00%	82.61%
Recreational fishing vessel moorage	50.00%	0.00%	52.17%	12.50%	62.50%	71.43%	15.79%	20.00%	21.74%	20.00%	78.26%
Tackle sales	25.00%	75.00%	26.09%	37.50%	75.00%	28.57%	36.84%	40.00%	30.43%	80.00%	60.87%
Bait sales	58.33%	50.00%	8.70%	25.00%	75.00%	14.29%	36.84%	20.00%	17.39%	80.00%	56.52%
Commercial cold storage facilities	50.00%	25.00%	17.39%	6.25%	25.00%	14.29%	10.53%	0.00%	17.39%	0.00%	43.48%
Dry dock storage	41.67%	25.00%	30.43%	12.50%	37.50%	14.29%	10.53%	0.00%	13.04%	20.00%	30.43%
Marine Refrigeration	50.00%	25.00%	17.39%	0.00%	25.00%	14.29%	5.26%	0.00%	4.35%	20.00%	26.09%

Appendix Table A24. -- Cont.

	Aleutian and Pribilof Islands	Anchorage and Mat-Su	Bristol Bay and Alaska Peninsula	Interior	Kenai Peninsula and Cook Inlet	Kodiak Island	Kusko-kwim River Mouth	Northern Alaska	Norton Sound and Bering Strait	Prince William Sound	Southeast
Fish lodges	8.33%	0.00%	65.22%	0.00%	75.00%	71.43%	5.26%	20.00%	8.70%	20.00%	60.87%
Fishing business attorneys	0.00%	25.00%	4.35%	0.00%	25.00%	14.29%	5.26%	0.00%	0.00%	0.00%	17.39%
Fishing related bookkeeping	16.67%	25.00%	13.04%	6.25%	62.50%	14.29%	5.26%	0.00%	4.35%	20.00%	39.13%
Boat fuel Sales	75.00%	50.00%	60.87%	25.00%	75.00%	57.14%	78.95%	40.00%	65.22%	60.00%	65.22%
Fishing gear repair	25.00%	25.00%	17.39%	0.00%	37.50%	14.29%	21.05%	0.00%	17.39%	20.00%	34.78%
Fishing gear storage	66.67%	25.00%	30.43%	0.00%	37.50%	42.86%	5.26%	0.00%	4.35%	20.00%	52.17%
Ice sales	75.00%	50.00%	30.43%	6.25%	50.00%	14.29%	5.26%	0.00%	17.39%	60.00%	47.83%
Water taxi	8.33%	25.00%	21.74%	0.00%	37.50%	57.14%	10.53%	20.00%	4.35%	20.00%	39.13%
Seaplane service	0.00%	50.00%	26.09%	12.50%	37.50%	42.86%	10.53%	0.00%	0.00%	20.00%	65.22%
Air taxi	66.67%	50.00%	65.22%	43.75%	50.00%	57.14%	42.11%	20.00%	39.13%	60.00%	52.17%
N	12	4	23	16	8	7	19	5	23	5	23

Appendix Table A25. -- Regional breakdown of the fishing season(s) in the community each year. (Q3).

Region	N	Salmon	Herring	Halibut/ Sablefish	Cod	Pollock	Crab	Whitefish
Aleutian and Pribilof Islands	11	54.55%	9.09%	81.82%	63.64%	27.27%	36.36%	0.00%
Anchorage and Mat-Su	2	100.00%	0.00%	0.00%	0.00%	0.00%	50.00%	0.00%
Bristol Bay and Alaska Peninsula	23	86.96%	8.70%	13.04%	8.70%	0.00%	0.00%	8.70%
Interior	14	92.86%	0.00%	0.00%	7.14%	0.00%	0.00%	35.71%
Kenai Peninsula and Cook Inlet	9	100.00%	0.00%	55.56%	66.67%	11.11%	0.00%	0.00%
Kodiak Island	6	100.00%	33.33%	33.33%	50.00%	16.67%	50.00%	0.00%
Kuskokwim River Mouth	17	100.00%	11.76%	23.53%	0.00%	0.00%	0.00%	0.00%
Northern Alaska	4	25.00%	0.00%	0.00%	25.00%	0.00%	0.00%	0.00%
Norton Sound and Bering Strait	22	100.00%	18.18%	13.64%	9.09%	0.00%	22.73%	9.09%
Prince William Sound	4	50.00%	0.00%	25.00%	25.00%	0.00%	0.00%	0.00%
Southeast	23	100.00%	17.39%	43.48%	8.70%	0.00%	34.78%	0.00%

Appendix Table A26. -- Regional breakdown of responses to the following question: Which size classes of commercial fishing boats use your community as their base of operation during the fishing season? (Q15).

Region	N	<35 ft	35-60 ft	61-125 ft	>125 ft	None
Aleutian and Pribilof Islands	12	58.33%	75.00%	41.67%	41.67%	16.67%
Anchorage and Mat-Su	3	66.67%	66.67%	0.00%	0.00%	33.33%
Bristol Bay and Alaska Peninsula	23	69.57%	17.39%	4.35%	4.35%	8.70%
Interior	16	18.75%	6.25%	0.00%	0.00%	81.25%
Kenai Peninsula and Cook Inlet	9	66.67%	66.67%	44.44%	22.22%	11.11%
Kodiak Island	6	83.33%	100.00%	16.67%	16.67%	0.00%
Kuskokwim River Mouth	19	78.95%	0.00%	5.26%	10.53%	26.32%
Northern Alaska	6	0.00%	0.00%	0.00%	0.00%	100.00%
Norton Sound and Bering Strait	23	69.57%	17.39%	4.35%	4.35%	30.43%
Prince William Sound	4	25.00%	25.00%	25.00%	25.00%	75.00%
Southeast	23	100.00%	91.30%	47.83%	21.74%	0.00%

Appendix Table A27. -- Regional breakdown of responses to the following question: Which fishing gear types are used by commercial fishing boats that use your community as their base of operation during the fishing season? (Q19).

Region	N	Trawl	Pot	Longline	Gillnet	Purse seiner	Troll	Other	None
Aleutian and Pribilof Islands	12	41.67%	50.00%	50.00%	50.00%	33.33%	0.00%	0.00%	16.67%
Anchorage and Mat-Su	4	0.00%	0.00%	0.00%	25.00%	0.00%	0.00%	50.00%	50.00%
Bristol Bay and Alaska Peninsula	22	0.00%	4.55%	18.18%	72.73%	18.18%	0.00%	9.09%	13.64%
Interior	17	0.00%	0.00%	0.00%	23.53%	0.00%	0.00%	29.41%	64.71%
Kenai Peninsula and Cook Inlet	9	0.00%	44.44%	66.67%	66.67%	33.33%	22.22%	33.33%	11.11%
Kodiak Island	7	14.29%	42.86%	42.86%	57.14%	85.71%	0.00%	14.29%	14.29%
Kuskokwim River Mouth	18	0.00%	0.00%	22.22%	88.89%	0.00%	11.11%	16.67%	5.56%
Northern Alaska	6	0.00%	0.00%	0.00%	50.00%	0.00%	0.00%	0.00%	50.00%
Norton Sound and Bering Strait	23	0.00%	26.09%	17.39%	65.22%	0.00%	0.00%	26.09%	21.74%
Prince William Sound	4	0.00%	0.00%	0.00%	25.00%	25.00%	0.00%	0.00%	0.00%
Southeast	23	13.04%	69.57%	91.30%	52.17%	47.83%	95.65%	8.70%	0.00%

Appendix Table A28. -- Regional breakdown of number of gear types used by commercial fishing boats that use the community as their base of operation during the fishing season. (Q15).

Region	One gear	Two gears	Three gears	Four gears	Five gears	Six gears
Aleutian and Pribilof Islands	12	50.00%	8.33%	16.67%	0.00%	25.00%
Anchorage and Mat-Su	4	75.00%	25.00%	0.00%	0.00%	0.00%
Bristol Bay and Alaska Peninsula	22	81.82%	9.09%	4.55%	0.00%	4.55%
Interior	17	82.35%	17.65%	0.00%	0.00%	0.00%
Kenai Peninsula and Cook Inlet	9	33.33%	22.22%	0.00%	11.11%	33.33%
Kodiak Island	7	28.57%	28.57%	0.00%	28.57%	14.29%
Kuskokwim River Mouth	18	61.11%	33.33%	5.56%	0.00%	0.00%
Northern Alaska	6	100.00%	0.00%	0.00%	0.00%	0.00%
Norton Sound and Bering Strait	23	47.83%	47.83%	4.35%	0.00%	0.00%
Prince William Sound	4	75.00%	0.00%	25.00%	0.00%	0.00%
Southeast	23	8.70%	8.70%	21.74%	30.43%	17.39%

Appendix Table A29. -- Regional breakdown of responses to the following question: To the best of your knowledge, what type of recreational or sport fishing, if any, goes on in your community? (Q17).

Region	N	Charter/ party boats	Private boats (residents)	Private boats (non-residents)	Shore or dock fishing (residents)	Shore or dock fishing (non- residents)	None
Aleutian and Pribilof Islands	12	8.33%	58.33%	25.00%	50.00%	33.33%	16.67%
Anchorage and Mat-Su	4	25.00%	75.00%	0.00%	25.00%	25.00%	0.00%
Bristol Bay and Alaska Peninsula	22	27.27%	95.45%	54.55%	45.45%	36.36%	4.55%
Interior	17	17.65%	64.71%	35.29%	11.76%	17.65%	17.65%
Kenai Peninsula and Cook Inlet	9	55.56%	77.78%	44.44%	66.67%	55.56%	0.00%
Kodiak Island	7	71.43%	85.71%	57.14%	71.43%	71.43%	0.00%
Kuskokwim River Mouth	19	0.00%	63.16%	15.79%	26.32%	5.26%	21.05%
Northern Alaska	6	16.67%	33.33%	16.67%	0.00%	0.00%	33.33%
Norton Sound and Bering Strait	23	4.35%	82.61%	17.39%	13.04%	4.35%	17.39%
Prince William Sound	5	80.00%	80.00%	40.00%	40.00%	60.00%	0.00%
Southeast	23	78.26%	100.00%	82.61%	73.91%	52.17%	0.00%

Appendix Table A30. -- Regional breakdown of responses to the following question: What saltwater species, if any, are targeted by recreational fishermen that use boats based in your community? (Q18).

Region	N	Pink salmon	Chum salmon	Chinook/ King salmon	Coho/ Silver salmon	Sockeye/ Red salmon	Halibut
Aleutian and Pribilof Islands	12	33.33%	33.33%	41.67%	58.33%	50.00%	75.00%
Anchorage and Mat-Su	3	100.00%	66.67%	100.00%	100.00%	100.00%	33.33%
Bristol Bay and Alaska Peninsula	22	36.36%	40.91%	72.73%	72.73%	86.36%	27.27%
Interior	17	11.76%	52.94%	47.06%	47.06%	11.76%	0.00%
Kenai Peninsula and Cook Inlet	9	55.56%	44.44%	77.78%	77.78%	66.67%	88.89%
Kodiak Island	6	66.67%	50.00%	83.33%	100.00%	100.00%	100.00%
Kuskokwim River Mouth	19	31.58%	47.37%	57.89%	63.16%	52.63%	36.84%
Northern Alaska	6	0.00%	33.33%	0.00%	16.67%	0.00%	0.00%
Norton Sound and Bering Strait	23	56.52%	73.91%	65.22%	82.61%	39.13%	43.48%
Prince William Sound	5	60.00%	40.00%	80.00%	60.00%	60.00%	40.00%
Southeast	23	69.57%	52.17%	100.00%	100.00%	60.87%	100.00%

Region	N	Rockfish	Crab	Black cod/ sablefish	Shrimp	Clam	None
Aleutian and Pribilof Islands	12	25.00%	41.67%	25.00%	0.00%	16.67%	41.67%
Anchorage and Mat-Su	3	0.00%	0.00%	0.00%	33.33%	33.33%	0.00%
Bristol Bay and Alaska Peninsula	22	9.09%	13.64%	4.55%	4.55%	18.18%	4.55%
Interior	17	0.00%	0.00%	0.00%	0.00%	0.00%	35.29%
Kenai Peninsula and Cook Inlet	9	88.89%	22.22%	33.33%	22.22%	55.56%	11.11%
Kodiak Island	6	83.33%	83.33%	66.67%	50.00%	66.67%	0.00%
Kuskokwim River Mouth	19	0.00%	0.00%	5.26%	0.00%	26.32%	31.58%
Northern Alaska	6	0.00%	0.00%	0.00%	0.00%	0.00%	66.67%
Norton Sound and Bering Strait	23	8.70%	30.43%	0.00%	0.00%	17.39%	4.35%
Prince William Sound	5	40.00%	20.00%	20.00%	40.00%	40.00%	20.00%
Southeast	23	100.00%	86.96%	30.43%	82.61%	52.17%	0.00%

Appendix Table A31. -- Regional breakdown of responses to the following question: What are the three (3) most important subsistence marine or aquatic resource to the residents of your community? (Q20).

Region	N	Salmon	Halibut	Cod	Rockfish	Lake fish/trout	Herring
Aleutian and Pribilof Islands	11	90.91%	72.73%	18.18%	9.09%	0.00%	0.00%
Anchorage and Mat-Su	3	100.00%	33.33%	0.00%	0.00%	0.00%	33.33%
Bristol Bay and Alaska Peninsula	22	86.36%	9.09%	0.00%	0.00%	40.91%	4.55%
Interior	14	100.00%	0.00%	0.00%	0.00%	7.14%	0.00%
Kenai Peninsula and Cook Inlet	8	62.50%	50.00%	0.00%	12.50%	12.50%	0.00%
Kodiak Island	6	83.33%	50.00%	0.00%	0.00%	0.00%	0.00%
Kuskokwim River Mouth	18	94.44%	22.22%	5.56%	0.00%	11.11%	22.22%
Northern Alaska	5	20.00%	0.00%	0.00%	0.00%	40.00%	0.00%
Norton Sound and Bering Strait	22	72.73%	4.55%	4.55%	0.00%	13.64%	9.09%
Prince William Sound	5	100.00%	60.00%	0.00%	0.00%	20.00%	0.00%
Southeast	22	90.91%	81.82%	13.64%	13.64%	0.00%	9.09%

Region	N	Pinnipeds	Whales	Crustaceans and Mollusks	Unspecified fish
Aleutian and Pribilof Islands	11	27.27%	0.00%	36.36%	0.00%
Anchorage and Mat-Su	3	0.00%	0.00%	0.00%	33.33%
Bristol Bay and Alaska Peninsula	22	22.73%	9.09%	22.73%	18.18%
Interior	14	0.00%	0.00%	0.00%	0.00%
Kenai Peninsula and Cook Inlet	8	25.00%	0.00%	37.50%	0.00%
Kodiak Island	6	16.67%	0.00%	66.67%	0.00%
Kuskokwim River Mouth	18	16.67%	0.00%	5.56%	11.11%
Northern Alaska	5	80.00%	80.00%	40.00%	0.00%
Norton Sound and Bering Strait	22	63.64%	40.91%	13.64%	13.64%
Prince William Sound	5	20.00%	0.00%	20.00%	0.00%
Southeast	22	0.00%	0.00%	50.00%	9.09%

Appendix Table A32. -- Regional breakdown of responses to the following question: Does the local government, organizations, or other local entities of your community receive any funding or grants from a Community Development Quota entity? (Q26).

Region	N	Funding or Grants	Special Allocation	None
Aleutian and Pribilof Islands	12	41.67%	33.33%	33.33%
Anchorage and Mat-Su	4	25.00%	25.00%	75.00%
Bristol Bay and Alaska Peninsula	19	31.58%	0.00%	63.16%
Interior	15	0.00%	0.00%	100.00%
Kenai Peninsula and Cook Inlet	7	0.00%	0.00%	100.00%
Kodiak Island	7	0.00%	0.00%	100.00%
Kuskokwim River Mouth	18	38.89%	16.67%	50.00%
Northern Alaska	6	0.00%	0.00%	100.00%
Norton Sound and Bering Strait	23	52.17%	26.09%	43.48%
Prince William Sound	5	0.00%	0.00%	100.00%
Southeast	20	5.00%	0.00%	95.00%

Appendix Table A33. -- Regional breakdown of responses to the following question: Did the community receive revenue from fisheries related taxes or fee programs this year? (Q25).

Region	N	Fishing gear storage	Leasing public lands to fishing industry	Marine Fuel Sales Tax	Harbor Rental	Municipal dock use fees	Other
Aleutian and Pribilof Islands	11	9.09%	9.09%	9.09%	27.27%	54.55%	72.73%
Anchorage and Mat-Su	3	0.00%	0.00%	0.00%	0.00%	33.33%	0.00%
Bristol Bay and Alaska Peninsula	20	10.00%	10.00%	5.00%	15.00%	10.00%	45.00%
Interior	16	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Kenai Peninsula and Cook Inlet	8	12.50%	12.50%	25.00%	25.00%	37.50%	50.00%
Kodiak Island	7	14.29%	14.29%	28.57%	42.86%	14.29%	28.57%
Kuskokwim River Mouth	15	0.00%	6.67%	20.00%	0.00%	6.67%	6.67%
Northern Alaska	5	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Norton Sound and Bering Strait	22	9.09%	9.09%	9.09%	9.09%	9.09%	31.82%
Prince William Sound	4	25.00%	0.00%	0.00%	25.00%	25.00%	75.00%
Southeast	23	13.04%	17.39%	17.39%	39.13%	43.48%	56.52%

Appendix Table A34. -- Regional breakdown of responses to the following question: Which of your community's public services are at least partially supported or funded by any of the following: Local or Borough Raw Fish Tax, Shared Fisheries Business Tax, the Fisheries Resource Landing Tax, or marine fuel sales tax? (Q27).

Region	N	Maintaining the harbor	Hospital/ Medical clinic	Educational scholarships	Roads	Social Services	Water and wastewater systems	Police and Fire	None	Don't know
Aleutian and Pribilof Islands	12	58.33%	33.33%	25.00%	33.33%	41.67%	33.33%	25.00%	33.33%	0.00%
Anchorage and Mat-Su	4	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	50.00%	50.00%
Bristol Bay and Alaska Peninsula	20	25.00%	20.00%	5.00%	40.00%	25.00%	45.00%	25.00%	15.00%	15.00%
Interior	16	6.25%	0.00%	6.25%	0.00%	0.00%	6.25%	0.00%	87.50%	0.00%
Kenai Peninsula and Cook Inlet	9	44.44%	11.11%	0.00%	33.33%	22.22%	11.11%	22.22%	22.22%	11.11%
Kodiak Island	7	57.14%	0.00%	0.00%	42.86%	14.29%	57.14%	28.57%	0.00%	14.29%
Kuskokwim River Mouth	16	12.50%	6.25%	0.00%	18.75%	6.25%	18.75%	6.25%	56.25%	12.50%
Northern Alaska	6	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%
Norton Sound and Bering Strait	22	18.18%	4.55%	9.09%	18.18%	4.55%	13.64%	9.09%	54.55%	9.09%
Prince William Sound	5	0.00%	20.00%	0.00%	20.00%	20.00%	0.00%	20.00%	80.00%	0.00%
Southeast	23	56.52%	17.39%	4.35%	21.74%	26.09%	8.70%	17.39%	30.43%	8.70%

Appendix Table A35. -- Regional breakdown of responses to the following question: Does your community have local fishing-related fee programs charged to the fishing industry that specifically support public services and infrastructure? (Q28).

Region	N	Yes	No
Aleutian and Pribilof Islands	12	33.33%	66.67%
Anchorage and Mat-Su	4	0.00%	100.00%
Bristol Bay and Alaska Peninsula	20	20.00%	80.00%
Interior	17	0.00%	100.00%
Kenai Peninsula and Cook Inlet	9	33.33%	66.67%
Kodiak Island	6	0.00%	100.00%
Kuskokwim River Mouth	19	0.00%	100.00%
Northern Alaska	5	0.00%	100.00%
Norton Sound and Bering Strait	21	0.00%	100.00%
Prince William Sound	5	0.00%	100.00%
Southeast	23	26.09%	73.91%

Appendix Table A36. -- Regional breakdown of responses to the following question: Which public social services are available in your community? (Q23).

Region	N	Medical services or doctors	Food bank	Soup kitchen	Job placement services	Publicly subsidized housing	Public library
Aleutian and Pribilof Islands	12	75.00%	16.67%	0.00%	8.33%	16.67%	33.33%
Anchorage and Mat-Su	4	100.00%	50.00%	0.00%	50.00%	50.00%	50.00%
Bristol Bay and Alaska Peninsula	20	95.00%	25.00%	5.00%	25.00%	40.00%	45.00%
Interior	17	88.24%	35.29%	11.76%	35.29%	17.65%	47.06%
Kenai Peninsula and Cook Inlet	8	87.50%	37.50%	25.00%	37.50%	50.00%	37.50%
Kodiak Island	7	100.00%	28.57%	0.00%	0.00%	42.86%	57.14%
Kuskokwim River Mouth	18	61.11%	50.00%	5.56%	33.33%	50.00%	72.22%
Northern Alaska	6	50.00%	33.33%	16.67%	16.67%	16.67%	66.67%
Norton Sound and Bering Strait	21	85.71%	47.62%	4.76%	28.57%	47.62%	52.38%
Prince William Sound	5	80.00%	20.00%	20.00%	40.00%	40.00%	60.00%
Southeast	20	85.00%	35.00%	5.00%	25.00%	70.00%	80.00%

Appendix Table A37. -- Regional breakdown of responses to the following question: For the types of boats listed, would you say there were a lot more, more, no more or less, less, or a lot less boats in your community compared to five years ago? (Q16).

A. Charter boats/party boats

Region	N	A lot more	More	No more or less	Less	A lot less	Blank
Aleutian and Pribilof Islands	11	0.00%	0.00%	27.27%	0.00%	9.09%	63.64%
Anchorage and Mat-Su	3	0.00%	0.00%	33.33%	0.00%	0.00%	66.67%
Bristol Bay and Alaska Peninsula	21	4.76%	4.76%	19.05%	0.00%	14.29%	57.14%
Interior	14	0.00%	7.14%	14.29%	7.14%	0.00%	71.43%
Kenai Peninsula and Cook Inlet	9	11.11%	22.22%	33.33%	11.11%	11.11%	11.11%
Kodiak Island	6	0.00%	33.33%	33.33%	33.33%	0.00%	0.00%
Kuskokwim River Mouth	19	0.00%	0.00%	10.53%	0.00%	15.79%	73.68%
Northern Alaska	5	0.00%	0.00%	80.00%	0.00%	0.00%	20.00%
Norton Sound and Bering Strait	23	0.00%	0.00%	30.43%	4.35%	4.35%	60.87%
Prince William Sound	3	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%
Southeast	23	0.00%	26.09%	60.87%	13.04%	0.00%	0.00%

B. Private pleasure boats

Region	N	A lot more	More	No more or less	Less	A lot less	Blank
Aleutian and Pribilof Islands	11	9.09%	9.09%	45.45%	0.00%	0.00%	36.36%
Anchorage and Mat-Su	3	0.00%	0.00%	33.33%	33.33%	0.00%	33.33%
Bristol Bay and Alaska Peninsula	21	14.29%	14.29%	28.57%	0.00%	14.29%	28.57%
Interior	14	7.14%	21.43%	28.57%	7.14%	0.00%	35.71%
Kenai Peninsula and Cook Inlet	9	11.11%	55.56%	11.11%	11.11%	11.11%	0.00%
Kodiak Island	6	0.00%	50.00%	50.00%	0.00%	0.00%	0.00%
Kuskokwim River Mouth	19	31.58%	21.05%	26.32%	0.00%	0.00%	21.05%
Northern Alaska	5	0.00%	20.00%	40.00%	0.00%	0.00%	40.00%
Norton Sound and Bering Strait	23	8.70%	21.74%	26.09%	8.70%	4.35%	30.43%
Prince William Sound	3	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%
Southeast	23	0.00%	47.83%	47.83%	4.35%	0.00%	0.00%

Appendix Table A37. -- Cont.

C. Commercial fishing boats

Region	N	A lot more	More	No more or less	Less	A lot less	Blank
Aleutian and Pribilof Islands	11	18.18%	9.09%	45.45%	9.09%	18.18%	0.00%
Anchorage and Mat-Su	3	0.00%	0.00%	0.00%	33.33%	0.00%	66.67%
Bristol Bay and Alaska Peninsula	21	4.76%	14.29%	57.14%	4.76%	9.52%	9.52%
Interior	14	0.00%	0.00%	14.29%	7.14%	0.00%	78.57%
Kenai Peninsula and Cook Inlet	9	0.00%	55.56%	11.11%	11.11%	0.00%	22.22%
Kodiak Island	6	0.00%	33.33%	66.67%	0.00%	0.00%	0.00%
Kuskokwim River Mouth	19	15.79%	36.84%	21.05%	5.26%	5.26%	15.79%
Northern Alaska	5	0.00%	0.00%	60.00%	0.00%	20.00%	20.00%
Norton Sound and Bering Strait	23	13.04%	30.43%	34.78%	0.00%	4.35%	17.39%
Prince William Sound	3	0.00%	33.33%	66.67%	0.00%	0.00%	0.00%
Southeast	23	0.00%	34.78%	52.17%	8.70%	0.00%	4.35%

D. Boats less than 35 ft.

Region	N	A lot more	More	No more or less	Less	A lot less	Blank
Aleutian and Pribilof Islands	11	9.09%	0.00%	45.45%	9.09%	9.09%	27.27%
Anchorage and Mat-Su	3	0.00%	33.33%	66.67%	0.00%	0.00%	0.00%
Bristol Bay and Alaska Peninsula	21	9.52%	9.52%	47.62%	4.76%	14.29%	14.29%
Interior	14	9.52%	9.52%	47.62%	4.76%	14.29%	28.57%
Kenai Peninsula and Cook Inlet	9	11.11%	44.44%	33.33%	0.00%	0.00%	11.11%
Kodiak Island	6	0.00%	16.67%	83.33%	0.00%	0.00%	0.00%
Kuskokwim River Mouth	19	31.58%	31.58%	10.53%	5.26%	5.26%	15.79%
Northern Alaska	5	20.00%	40.00%	20.00%	20.00%	0.00%	0.00%
Norton Sound and Bering Strait	23	30.43%	47.83%	13.04%	4.35%	0.00%	4.35%
Prince William Sound	3	0.00%	33.33%	66.67%	0.00%	0.00%	0.00%
Southeast	23	0.00%	43.48%	52.17%	0.00%	0.00%	4.35%

Appendix Table A37. -- Cont.

E. Boats 35 to 60 ft.

Region	N	A lot more	More	No more or less	Less	A lot less	Blank
Aleutian and Pribilof Islands	11	9.09%	9.09%	36.36%	0.00%	9.09%	36.36%
Anchorage and Mat-Su	3	0.00%	0.00%	33.33%	0.00%	0.00%	66.67%
Bristol Bay and Alaska Peninsula	21	14.29%	0.00%	23.81%	0.00%	9.52%	52.38%
Interior	14	0.00%	0.00%	14.29%	14.29%	0.00%	71.43%
Kenai Peninsula and Cook Inlet	9	0.00%	44.44%	22.22%	11.11%	0.00%	22.22%
Kodiak Island	6	0.00%	0.00%	83.33%	0.00%	16.67%	0.00%
Kuskokwim River Mouth	19	0.00%	0.00%	5.26%	15.79%	21.05%	57.89%
Northern Alaska	5	0.00%	0.00%	60.00%	0.00%	0.00%	40.00%
Norton Sound and Bering Strait	23	0.00%	13.04%	17.39%	17.39%	8.70%	43.48%
Prince William Sound	3	0.00%	33.33%	33.33%	0.00%	0.00%	33.33%
Southeast	23	0.00%	43.48%	34.78%	8.70%	4.35%	8.70%

F. Boats 61 to 125 ft.

Region	N	A lot more	More	No more or less	Less	A lot less	Blank
Aleutian and Pribilof Islands	11	9.09%	9.09%	36.36%	0.00%	9.09%	36.36%
Anchorage and Mat-Su	3	0.00%	0.00%	0.00%	33.33%	0.00%	66.67%
Bristol Bay and Alaska Peninsula	21	9.52%	0.00%	14.29%	4.76%	9.52%	61.90%
Interior	14	0.00%	0.00%	14.29%	7.14%	0.00%	78.57%
Kenai Peninsula and Cook Inlet	9	0.00%	11.11%	44.44%	22.22%	0.00%	22.22%
Kodiak Island	6	0.00%	0.00%	83.33%	0.00%	16.67%	0.00%
Kuskokwim River Mouth	19	0.00%	0.00%	5.26%	10.53%	21.05%	63.16%
Northern Alaska	5	0.00%	0.00%	60.00%	0.00%	0.00%	40.00%
Norton Sound and Bering Strait	23	0.00%	8.70%	21.74%	8.70%	17.39%	43.48%
Prince William Sound	3	0.00%	0.00%	66.67%	0.00%	0.00%	33.33%
Southeast	23	0.00%	8.70%	60.87%	4.35%	4.35%	21.74%

Appendix Table A37. -- Cont.

G. Boats greater than 125 ft.

Region	N	A lot more	More	No more or less	Less	A lot less	Blank
Aleutian and Pribilof Islands	11	9.09%	0.00%	36.36%	18.18%	9.09%	27.27%
Anchorage and Mat-Su	3	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
Bristol Bay and Alaska Peninsula	21	9.52%	0.00%	9.52%	4.76%	9.52%	66.67%
Interior	14	0.00%	0.00%	14.29%	7.14%	0.00%	78.57%
Kenai Peninsula and Cook Inlet	9	0.00%	22.22%	22.22%	33.33%	0.00%	22.22%
Kodiak Island	6	0.00%	0.00%	83.33%	0.00%	0.00%	16.67%
Kuskokwim River Mouth	19	0.00%	0.00%	5.56%	5.56%	22.22%	72.22%
Northern Alaska	5	0.00%	0.00%	60.00%	0.00%	0.00%	40.00%
Norton Sound and Bering Strait	23	0.00%	4.35%	21.74%	13.04%	13.04%	47.83%
Prince William Sound	3	0.00%	0.00%	33.33%	0.00%	0.00%	66.67%
Southeast	23	0.00%	8.70%	52.17%	0.00%	8.70%	30.43%

Appendix Table A38. -- Regional breakdown of responses to the following question: Does your community participate in the fisheries management process in Alaska? (Q29).

Region	N	Paid staff member attends NPFMC &/or Board of Fish meetings	Representative participates in NPFMC committees or advisory groups	Representative sits on regional fisheries advisory &/or working groups run by ADF&G	Representative participates in Federal subsistence Board or Federal Subsistence Regional Advisory Council process	Relies on regional organizations to provide information on fisheries management issues	Financially supports research organizations, industry coalitions, and trade associations	Doesn't participate
Aleutian and Pribilof Islands	11	45.45%	63.64%	36.36%	27.27%	54.55%	27.27%	9.09%
Anchorage and Mat-Su	3	0.00%	33.33%	33.33%	0.00%	0.00%	0.00%	66.67%
Bristol Bay and Alaska Peninsula	22	13.64%	13.64%	50.00%	31.82%	36.36%	4.55%	13.64%
Interior	16	6.25%	0.00%	37.50%	43.75%	12.50%	0.00%	37.50%
Kenai Peninsula and Cook Inlet	9	11.11%	44.44%	44.44%	33.33%	22.22%	11.11%	22.22%
Kodiak Island	7	0.00%	42.86%	28.57%	14.29%	57.14%	0.00%	28.57%
Kuskokwim River Mouth	19	5.26%	5.26%	36.84%	26.32%	21.05%	0.00%	36.84%
Northern Alaska	6	0.00%	0.00%	16.67%	33.33%	0.00%	0.00%	50.00%
Norton Sound and Bering Strait	23	8.70%	47.83%	56.52%	69.57%	17.39%	0.00%	26.09%
Prince William Sound	5	0.00%	0.00%	20.00%	60.00%	0.00%	0.00%	40.00%
Southeast	22	9.09%	18.18%	22.73%	40.91%	50.00%	40.91%	4.55%

APPENDIX B: SUMMARY RESPONSE DISTRIBUTION TABLES

Appendix Table B1. -- Distribution of responses to the following question: How many people live in your community as year round-residents, seasonal workers, or year round residents who work in a shore-side processing plant? (Q1).

	n	% survey respondents	% item respondents
Year-round residents	148	100.00%	100.00%
Seasonal workers or transients	127	85.81%	85.81%
Year round residents working in a processing plant	75	50.68%	50.68%
Blank	0	0.00%	
Total item respondents	**148**		

Appendix Table B2. -- Distribution of responses to the following question: On average, which months per year does your community have seasonal workers living there? (Q2).

	n	% survey respondents	% item respondents
Jan-March	16	10.81%	16.16%
April-June	89	60.14%	89.90%
July-Sept	94	63.51%	94.95%
Oct-Dec	28	18.92%	28.28%
All year	7	4.73%	7.07%
None	4	2.70%	4.04%
Blank	49	33.11%	
Total item respondents	**99**		

Appendix Table B3. -- Distribution of community fishery participation (Q3).

	n	% survey respondents	% item respondents
Salmon	90	60.81%	66.67%
Herring	15	10.14%	11.11%
Halibut/sablefish	37	25.00%	27.41%
Cod	23	15.54%	17.04%
Pollock	5	3.38%	3.70%
Crab	20	13.51%	14.81%
Whitefish	9	6.08%	6.67%
Shrimp	8	5.41%	5.93%
Shellfish	0	0.00%	0.00%
Blank	14	9.46%	
Total item respondents	**135**		

Appendix Table B4. -- Distribution of responses to the following question: In what month(s) does the population in your community reach its annual peak? (Q4).

	n	% survey respondents	% item respondents
Constant population	7	4.73%	4.93%
Peak in Jan-Mar	10	6.76%	7.04%
Peak in Apr-Jun	71	47.97%	50.00%
Peak in July-Sept	113	76.35%	79.58%
Peak in Oct-Dec	15	10.14%	10.56%
Blank	7	4.73%	
Total item respondents	**142**		

Appendix Table B5. -- Distribution of responses to the following question: To what degree is this peak in population driven by employment in the fishing sectors? (Q5).

	n	% survey respondents	% item respondents
Entirely	30	20.27%	20.69%
Mostly	34	22.97%	23.45%
Somewhat	29	19.59%	20.00%
A little	32	21.62%	22.07%
Not at all	35	23.65%	24.14%
Blank	3	2.03%	
Total item respondents	**145**		

Appendix Table B6. -- Distribution of responses to the following question: Please list up to 5 communities that residents interact with the most and how residents interact with them. (Q6).

Region	n	Percent survey respondents
Aleutian and Pribilof Islands	10	83.33%
Anchorage and Mat-Su	4	100.00%
Bristol Bay and Alaska Peninsula	23	100.00%
Interior	16	100.00%
Kenai Peninsula and Cook Inlet	7	88.89%
Kodiak Island	6	85.71%
Kuskokwim River Mouth	19	100.00%
Northern Alaska	4	66.67%
Norton Sound and Bering Strait	22	95.65%
Prince William Sound	4	80.00%
Southeast	22	95.65%
Blank	9	
Total item respondents	**139**	

Appendix Table B7. -- Distribution of responses to the following question: Which communities do residents travel to on a regular basis and what mode of transportation is available to travel there? (Q7).

Region	n	Percent survey respondents
Aleutian and Pribilof Islands	11	91.67%
Anchorage and Mat-Su	4	100.00%
Bristol Bay and Alaska Peninsula	23	100.00%
Interior	16	94.12%
Kenai Peninsula and Cook Inlet	9	100.00%
Kodiak Island	7	100.00%
Kuskokwim River Mouth	18	94.74%
Northern Alaska	6	100.00%
Norton Sound and Bering Strait	22	95.65%
Prince William Sound	4	80.00%
Southeast	23	100.00%
Blank	11	
Total item respondents	**143**	

Appendix Table B8. -- Distribution of responses to the following question: Please list the top 3 communities your community depends on for goods and supplies, such as groceries, fuel, household supplies, construction material and hardware. (Q8)

Region	n	Percent survey respondents
Aleutian and Pribilof Islands	12	100.00%
Anchorage and Mat-Su	4	100.00%
Bristol Bay and Alaska Peninsula	23	100.00%
Interior	17	100.00%
Kenai Peninsula and Cook Inlet	9	100.00%
Kodiak Island	7	100.00%
Kuskokwim River Mouth	19	100.00%
Northern Alaska	6	100.00%
Norton Sound and Bering Strait	23	100.00%
Prince William Sound	5	100.00%
Southeast	23	100.00%
Blank	0	
Total item respondents	**148**	

Appendix Table B9. -- Distribution of responses to the following question: Do any of the children in your community under age 18 attend school in another community? (Q9).

Region	n	Percent survey respondents
Aleutian and Pribilof Islands	11	91.67%
Anchorage and Mat-Su	4	100.00%
Bristol Bay and Alaska Peninsula	22	95.65%
Interior	17	100.00%
Kenai Peninsula and Cook Inlet	9	100.00%
Kodiak Island	7	100.00%
Kuskokwim River Mouth	17	89.47%
Northern Alaska	6	100.00%
Norton Sound and Bering Strait	22	95.65%
Prince William Sound	5	100.00%
Southeast	20	86.96%
Blank	8	
Total item respondents	**140**	

Appendix Table B10. -- Distribution of responses to the following question: Which of the following types of infrastructure projects have been completed in your community in the last 10 years, are currently in progress, or are being planned for completion in the next 10 years? (Q10).

Region	n	% survey respondents
Aleutian and Pribilof Islands	11	91.67%
Anchorage and Mat-Su	4	100.00%
Bristol Bay and Alaska Peninsula	23	100.00%
Interior	15	88.24%
Kenai Peninsula and Cook Inlet	9	100.00%
Kodiak Island	6	85.71%
Kuskokwim River Mouth	18	94.74%
Northern Alaska	6	100.00%
Norton Sound and Bering Strait	23	100.00%
Prince William Sound	4	80.00%
Southeast	23	100.00%
Blank	6	
Total item respondents	**142**	

Appendix Table B11. -- Distribution of responses to the following question: What is the maximum vessel length that can use moorage in your community? (Q11).

Vessel size	n	% survey respondents	% item respondents
0 ft.	52	37.41%	35.14%
1-100 ft.	41	29.50%	27.70%
101-200 ft.	21	15.11%	14.19%
201-300 ft.	5	3.60%	3.38%
301-400 ft.	6	4.32%	4.05%
401-500 ft.	5	3.60%	3.38%
>500 ft.	9	6.47%	6.08%
Blank	9	5.76%	
Total item respondents	**139**		

Appendix Table B12. -- Distribution of responses to the following question: How many feet of public dock space for moorage are located in and around the port of your community for permanent and transient vessels? (Q12).

	Permanent			Transient		
Dock feet	**n**	**% survey respondents**	**% item respondents**	**n**	**% survey respondents**	**% item respondents**
None	75	50.68%	58.59%	67	45.27%	58.77%
<500 ft	22	14.86%	17.19%	26	17.57%	22.81%
500-1000 ft	3	2.03%	2.34%	10	6.76%	8.77%
1000-3000 ft	11	7.43%	8.59%	6	4.05%	5.26%
3000-8000 ft	7	4.73%	5.47%	2	1.35%	1.75%
> 8000 ft	8	5.41%	6.25%	4	2.70%	3.51%
Blank	22	14.86%		33	22.30%	
Total item respondents	**126**			**115**		

Appendix Table B13. -- Distribution of responses to the following question: What is the annual revenue that public moorage facilities earned in 2011? (Q13).

Region	**n**	**% survey respondents**
Aleutian and Pribilof Islands	9	75.00%
Anchorage and Mat-Su	2	50.00%
Bristol Bay and Alaska Peninsula	13	56.52%
Interior	13	76.47%
Kenai Peninsula and Cook Inlet	6	66.67%
Kodiak Island	6	85.71%
Kuskokwim River Mouth	16	84.21%
Northern Alaska	5	83.33%
Norton Sound and Bering Strait	21	91.30%
Prince William Sound	5	100.00%
Southeast	22	95.65%
Blank	29	
Total item respondents	**118**	

Appendix Table B14. -- Distribution of responses to the following question: Which of the following types of regulated vessels is the port of your community capable of handling? (Q14).

Vessel	n	% survey respondents	% item respondents
Rescue vessels	46	31.08%	33.33%
Cruise ships	27	18.24%	19.57%
Ferries	32	21.62%	23.19%
Fuel barges	92	62.16%	66.67%
Hazmat	28	18.92%	20.29%
None	44	29.73%	31.88%
Other	21	14.19%	15.22%
Blank	10	6.76%	
Total item respondents	**138**		

Appendix Table B15. -- Distribution of responses to the following question: Which size classes of commercial fishing boats use your community as their base of operation during the fishing season? (Q15).

Vessel size	n	% survey respondents	% item respondents
Under 35 feet	94	63.51%	65.28%
35-60 feet	52	35.14%	36.11%
61-125 feet	25	16.89%	17.36%
Over 125 feet	18	12.16%	12.50%
None	44	29.73%	30.56%
Blank	6	2.70%	
Total item respondents	**144**		

Appendix Table B16. -- Distribution of responses to the following question: For the types of boats listed, would you say there were a lot more, more, no more or less, less, or a lot less boats in your community compared to five years ago? (Q16).

		A lot more	More	No more no less	Less	A lot less	Total item respondents
Charter boats/ Party boats	n	2	12	44	8	8	137
	% survey respondents	1.35%	8.11%	29.73%	5.41%	5.41%	
	% item respondents	1.46%	8.76%	32.12%	5.84%	5.84%	
Private pleasure boats	n	14	36	47	6	4	137
	% survey respondents	9.46%	24.32%	31.76%	4.05%	2.70%	
	% item respondents	10.22%	26.28%	34.31%	4.38%	2.92%	
Commercial fishing boats	n	9	34	0	8	7	137
	% survey respondents	6.08%	22.97%	0.00%	5.41%	4.73%	
	% item respondents	6.57%	24.82%	0.00%	5.84%	5.11%	
Boats <35 ft	n	17	36	50	6	5	137
	% survey respondents	11.49%	24.32%	33.78%	4.05%	3.38%	
	% item respondents	12.41%	26.28%	36.23%	4.35%	3.62%	
Boats between 35-60 ft	n	4	19	36	12	11	137
	% survey respondents	2.70%	12.84%	24.32%	8.11%	7.43%	
	% item respondents	2.92%	13.87%	26.28%	8.76%	8.03%	
Boats between 61-125 ft	n	3	6	43	10	13	137
	% survey respondents	2.03%	4.05%	29.05%	6.76%	8.78%	
	% item respondents	2.19%	4.38%	31.39%	7.30%	9.49%	
Boats >125 ft	n	3	3	38	11	12	137
	% survey respondents	2.03%	2.03%	25.68%	7.43%	8.11%	
	% item respondents	2.19%	2.19%	27.74%	8.03%	8.76%	

Appendix Table B17. -- Distribution of responses to the following question: To the best of your knowledge, what type of recreational or sport fishing, if any, goes on in your community? (Q17).

Recreational fishing type	n	% survey respondents	% item respondents
Charter boats/Party boats	46	31.08%	31.29%
Private boats owned by residents	116	78.38%	78.91%
Private boats owned by non- residents	59	39.86%	40.14%
Shore based or dock fishing by local residents	58	39.19%	39.46%
Shore based or dock fishing by non- residents	44	29.73%	29.93%
None	16	10.81%	10.88%
Blank	1	0.68%	
Total item respondents	**147**		

Appendix Table B18. -- Distribution of responses to the following question: What saltwater species, if any, are targeted by recreational fishermen that use boats based in your community? (Q18).

Recreational species	n	% survey respondents	% item respondents
Pink salmon	63	42.57%	43.45%
Chum salmon	72	48.65%	49.66%
Chinook/King salmon	96	64.86%	66.21%
Coho/Silver salmon	104	70.27%	71.72%
Sockeye/Red salmon	78	52.70%	53.79%
Halibut	72	48.65%	49.66%
Rockfish	45	30.41%	31.03%
Crab	43	29.05%	29.66%
Black cod/sablefish	20	13.51%	13.79%
Shrimp	28	18.92%	19.31%
Clam	39	26.35%	26.90%
Other	17	11.49%	11.72%
None	96	64.86%	66.21%
Blank	3	2.03%	
Total item respondents	**145**		

Appendix Table B19a. -- Distribution of responses to the following question: Which fishing gear types are used by commercial fishing boats that use your community as their base of operation during the fishing season? (Q19a).

Gear	n	% survey respondents	% item respondents
Trawl	9	6.08%	6.21%
Pots	36	24.32%	24.83%
Longline	49	33.11%	33.79%
Gillnet	84	56.76%	57.93%
Purse Seine	29	19.59%	20.00%
Troll	26	17.57%	17.93%
None	31	20.95%	21.38%
Blank	3	2.03%	
Total item respondents	**145**		

Appendix Table B19b. -- Distribution of the number of different gears used by commercial fishing boats that use the community as their base of operation during the fishing season. (Q19b).

Gear #	n	% survey respondents	% item respondents[1]
One gear	79	53.38%	54.48%
Two gears	30	20.27%	20.69%
Three gears	11	7.43%	7.59%
Four gears	10	6.76%	6.90%
Five gears	12	8.11%	8.28%
Six gears	3	2.03%	2.07%
Seven gears	0	0.00%	0.00%
Blank	3	2.03%	
Total item respondents	**145**		

[1] The pool of item respondents in this case refers to communities that reported at least one specific gear type.

Appendix Table B20. -- Distribution of responses to the following question: What are the three (3) most important subsistence marine or aquatic resource to the residents of your community? (Q20).

Subsistence species	n	% survey respondents	% item respondents
Salmon	115	77.70%	84.56%
Pinnipeds (e.g., seals and walrus)	33	22.30%	24.26%
Whales	15	10.14%	11.03%
Halibut	44	29.73%	32.35%
Cod	7	4.73%	5.15%
Rockfish	5	3.38%	3.68%
Herring	10	6.76%	7.35%
Unspecified fish	12	8.11%	8.82%
Mollusks & crustaceans (e.g., clams and crabs)	34	22.97%	25.00%
Seaweed	6	4.05%	4.41%
Waterfowl	10	6.76%	11.03%
Ungulates	15	10.14%	7.35%
Trapping	5	3.38%	3.68%
Berries/plants	3	2.03%	2.21%
Blanks	10	6.76%	
Total item respondents	**136**		

Appendix Table B21. -- Distribution of responses to the following question: What types of fishing support businesses are located in your community? (Q21).

	n	% survey respondents	% item respondents
Fish processing plants	52	35.14%	35.86%
Fishing gear sales	65	43.92%	44.83%
Fishing gear manufacturer	8	5.41%	5.52%
Boat repair	45	30.41%	31.03%
Electrical	39	26.35%	26.90%
Welding	64	43.24%	44.14%
Mechanical services	50	33.78%	34.48%
Machine Shop	42	28.38%	28.97%
Hydraulics	33	22.30%	22.76%
Haul out facilities for small boats (less than 60 tons).	48	32.43%	33.10%
Haul out facilities for large boats (more than 60 tons).	16	10.81%	11.03%
Tidal grid for small boats (less than 60 tons).	31	20.95%	21.38%
Tidal grid for large boats (more than 60 tons).	18	12.16%	12.41%
Commercial fishing vessel moorage	56	37.84%	38.62%
Recreational fishing vessel moorage	58	39.19%	40.00%
Tackle sales	60	40.54%	41.38%
Bait sales	51	34.46%	35.17%
Commercial cold storage facilities	31	20.95%	21.38%
Dry dock storage	32	21.62%	22.07%
Marine Refrigeration	23	15.54%	15.86%
Fish lodges	46	31.08%	31.72%
Fishing business attorneys	10	6.76%	6.90%
Fishing related bookkeeping	25	16.89%	17.24%
Boat fuel Sales	89	60.14%	61.38%
Fishing gear repair	29	19.59%	20.00%
Fishing gear storage	37	25.00%	25.52%
Ice sales	43	29.05%	29.66%
Water taxi	28	18.92%	19.31%
Seaplane service	34	22.97%	23.45%
Air taxi	73	49.32%	50.34%
Other	7	4.73%	4.83%
Blank	3	2.03%	
Total item respondents	**145**		

Appendix Table B22. -- Distribution of responses to the following question: For those businesses that are not available, please list the top three communities that people go to for services. (Q22).

Region	n	Item response rate
Aleutian and Pribilof Islands	10	83.33%
Anchorage and Mat-Su	4	100.00%
Bristol Bay and Alaska Peninsula	16	69.57%
Interior	10	58.82%
Kenai Peninsula and Cook Inlet	8	88.89%
Kodiak Island	4	57.14%
Kuskokwim River Mouth	12	63.16%
Northern Alaska	2	33.33%
Norton Sound and Bering Strait	18	78.26%
Prince William Sound	3	60.00%
Southeast	21	91.30%
Blank	40	
Total item respondents	**108**	

Appendix Table B23. -- Distribution of responses to the following question: Which public social services are available in your community? (Q23).

Public service	n	% survey respondents	% item respondents
Medical services or doctors	114	77.03%	82.61%
Food bank	49	33.11%	35.51%
Soup kitchen	10	6.76%	7.25%
Job placement services	37	25.00%	26.81%
Publicly subsidized housing	58	39.19%	42.03%
Public library	77	52.03%	55.80%
Blank	10	6.76%	
Total item respondents	**138**		

Appendix Table B24. -- Distribution of responses to the following question: Which, if any, natural resource-based industries does your community's economy rely upon? (Q24).

Industry	n	% survey respondents	% item respondents
Mining	18	12.16%	12.33%
Logging	25	16.89%	17.12%
Fishing	107	72.30%	73.29%
Oil and gas	13	8.78%	8.90%
Geothermal	0	0.00%	0.00%
Ecotourism	38	25.68%	26.03%
Sportfishing/hunting	68	45.95%	46.58%
Other	20	13.51%	13.70%
None	22	14.86%	15.07%
Blank	2	1.35%	
Total item respondents	**146**		

Appendix Table B25. -- Distribution of item response for the following question: How much total revenue did the community receive from fisheries-related taxes or fee programs this year? (Q25).

Fishery taxes and fees	n	% survey respondents	% item respondents
Fishing gear storage	11	7.43%	8.21%
Leasing public land to fishing industry	12	8.11%	8.96%
Marine fuel sales tax	15	10.14%	11.19%
Harbor rental	23	15.54%	17.16%
Municipal dock use fees	27	18.24%	20.15%
Other	46	31.08%	34.33%
Blank	14	9.46%	
Total item respondents	**134**		

Appendix Table B26. -- Distribution of responses to the following question: Does the local government, organizations, or other local entities of your community receive any funding or grants from a Community Development Quota entity? (Q26).

Funding	n	% survey respondents	% item respondents
Funding and Grants	32	21.62%	23.53%
Special Allocations	16	10.81%	11.76%
None	96	64.86%	70.59%
Blank	11	7.43%	
Total item respondents	**136**		

Appendix Table B27. -- Distribution of responses to the following question: Which of your community's public services are at least partially supported or funded by any of the following: Local or Borough Raw Fish Tax, Shared Fisheries Business Tax, the Fisheries Resource Landing Tax, or marine fuel sales tax? (Q27).

Public service	n	% survey respondents	% item respondents
Maintaining the Harbor	39	26.35%	27.86%
Hospital/Medical clinic	17	11.49%	12.14%
Educational scholarships	7	4.73%	5.00%
Roads	32	21.62%	22.86%
Social Services	22	14.86%	15.71%
Water and wastewater systems	26	17.57%	18.57%
Roads	21	14.19%	15.00%
Police enforcement/fire protection	30	20.27%	21.43%
Not able to determine	14	9.46%	10.00%
Other	17	11.49%	12.14%
No community services are funded by fish taxes	63	42.57%	45.00%
Blank	8	5.41%	
Total item respondents	**140**		

Appendix Table B28. -- Distribution of responses to the following question: Does your community have local fishing-related fee programs charged to the fishing industry that specifically support public services and infrastructure? (Q28).

	n	% survey respondents	% item respondents
Yes	17	11.49%	12.06%
No	124	83.78%	87.94%
Blank	7	4.73%	
Total item respondents	**141**		

Appendix Table B29. -- Distribution of responses to the following question: Does your community participate in the fisheries management process in Alaska? (Q29).

Participation	n	% survey respondents	% item respondents
Paid staff attends fed & state	15	10.14%	10.49%
Rep participates in federal	34	22.97%	23.78%
Rep sits on state advisory groups	55	37.16%	38.46%
Rep participates in subsistence	56	37.84%	39.16%
Rely on regional organizations	41	27.70%	28.67%
Financially supports groups	14	9.46%	9.79%
Don't participate	24	16.22%	16.78%
Blank	35	23.65%	
Total item respondents	**143**		

Appendix Table B30. -- Distribution of responses to the following question: In your opinion, what are the current challenges for the portion of your community's economy that is based on fishing? (Q30).

Region	n	Response rate	Total survey respondents
Aleutian and Pribilof Islands	10	83.33%	12
Anchorage and Mat-Su	2	50.00%	4
Bristol Bay and Alaska Peninsula	17	73.91%	23
Interior	14	82.35%	17
Kenai Peninsula and Cook Inlet	7	77.78%	9
Kodiak Island	6	85.71%	7
Kuskokwim River Mouth	13	68.42%	19
Northern Alaska	5	83.33%	6
Norton Sound and Bering Strait	22	95.65%	23
Prince William Sound	3	60.00%	5
Southeast	22	95.65%	23
Total	**121**	**81.76%**	**148**

Appendix Table B31. -- Distribution of responses to the following question: In your opinion, what are the current challenges for the portion of your community's economy that is based on fishing? (Q31).

Region	n	Response rate	Total survey respondents
Aleutian and Pribilof Islands	10	83.33%	12
Anchorage and Mat-Su	3	75.00%	4
Bristol Bay and Alaska Peninsula	12	52.17%	23
Interior	13	76.47%	17
Kenai Peninsula and Cook Inlet	8	88.89%	9
Kodiak Island	6	85.71%	7
Kuskokwim River Mouth	18	94.74%	19
Northern Alaska	6	100.00%	6
Norton Sound and Bering Strait	21	91.30%	23
Prince William Sound	5	100.00%	5
Southeast	15	65.22%	23
Total	**117**	**81.76%**	**148**

Appendix Table B32. -- Distribution of responses to the following question: In your opinion, what are the current challenges for the portion of your community's economy that is based on fishing? (Q32).

Region	n	Response rate	Total survey respondents
Aleutian and Pribilof Islands	12	100.00%	12
Anchorage and Mat-Su	1	25.00%	4
Bristol Bay and Alaska Peninsula	14	60.87%	23
Interior	13	76.47%	17
Kenai Peninsula and Cook Inlet	8	88.89%	9
Kodiak Island	7	100.00%	7
Kuskokwim River Mouth	17	89.47%	19
Northern Alaska	3	50.00%	6
Norton Sound and Bering Strait	22	95.65%	23
Prince William Sound	5	100.00%	5
Southeast	20	86.96%	23
Total	**122**	**82.43%**	**148**

Appendix Table B33. -- Distribution of responses to the following question: In your opinion, what are the current challenges for the portion of your community's economy that is based on fishing? (Q33).

Region	n	Response rate	Total survey respondents
Aleutian and Pribilof Islands	11	91.67%	12
Anchorage and Mat-Su	1	25.00%	4
Bristol Bay and Alaska Peninsula	12	52.17%	23
Interior	10	58.82%	17
Kenai Peninsula and Cook Inlet	7	77.78%	9
Kodiak Island	7	100.00%	7
Kuskokwim River Mouth	17	89.47%	19
Northern Alaska	6	100.00%	6
Norton Sound and Bering Strait	21	91.30%	23
Prince William Sound	5	100.00%	5
Southeast	15	65.22%	23
Total	**112**	**75.68%**	**148**

APPENDIX C: NETWORK IN-DEGREE CENTRALITY MEASURES

Appendix Table C1. -- Community network in-degree centrality for question: Please list up to 5 communities that residents interact with the most and how residents interact with them. (Q6).

Share local fisheries information	Community	In-degree	Share general public services	Community	In-degree	Share traditional knowledge	Community	In-degree
	Anchorage	11		Anchorage	10		Sitka	7
	Dillingham	10		Juneau	8		Crooked Creek	7
	Juneau	9		Dillingham	7		Hydaburg	6
	Craig	9		Bethel	6		Wrangell	6
	Bethel	8		Ketchikan	6		Anderson	6
	Sitka	7		Craig	5		Marshall	6
	Ketchikan	6		Nome	5		Tok	6
	Hoonah	6		Kenai	5		Ketchikan	5
	Fairbanks	5		Homer	4		Diomede	5
	Newhalen	5		Galena	4		Ester	5
Share professional services	**Community**	**In-degree**	**Share resources**	**Community**	**In-degree**	**Share culture**	**Community**	**In-degree**
	Anchorage	15		Anchorage	13		Anchorage	14
	Ketchikan	11		Craig	9		Ketchikan	7
	Dillingham	10		Ketchikan	8		Juneau	7
	Craig	9		Dillingham	7		Dillingham	7
	Juneau	8		Klawock	6		Craig	7
	Sitka	7		Juneau	6		Toksook Bay	7
	Fairbanks	6		Nome	5		Fairbanks	6
	Wrangell	6		Fairbanks	5		Huslia	6
	Klawock	6		Sitka	5		Sitka	6
	Nome	6		Wrangell	5		Bethel	5

Appendix Table C2. -- Community network in-degree centrality for question: Which communities do residents travel to on a regular basis and what mode of transportation is available to travel there? (Q7).

Air	Community	In-degree	Ice road	Community	In-degree	Road	Community	In-degree	Ferry	Community	In-degree
	Anchorage	38		Bethel	9		Anchorage	6		Ketchikan	10
	Bethel	20		Nondalton	7		Klawock	3		Juneau	9
	Ketchikan	11		Akiak	6		Fairbanks	3		Seattle	6
	Juneau	11		Napakiak	6		Wasilla	3		Anchorage	4
	Seattle	11		Koyukuk	6		Craig	2		Sitka	3
	Dillingham	10		Akiachak	6		Homer	2		Homer	3
	Nome	9		Nunapitchuk	6		Thorne Bay	2		Petersburg	2
	King Salmon	9		Tuluksak	5		Coffman Cove	2		Wrangell	2
	Fairbanks	8		Kaltag	4		Kenai	2		Unalaska	2
	Emmonak	7		Alakanuk	4		Soldotna	2		Chignik (Bay)	2

River	Community	In-degree	Winter trails	Community	In-degree	Skiff	Community	In-degree
	Bethel	11		Bethel	13		Bethel	9
	Galena	5		Emmonak	6		Emmonak	7
	Koyukuk	5		Dillingham	5		Dillingham	5
	Nulato	5		Koyukuk	4		Iliamna	4
	Emmonak	5		Kaltag	4		Kokhanok	4
	Huslia	4		Nondalton	4		Unalakleet	3
	Napakiak	4		Unalakleet	4		Igiugig	3
	Dillingham	4		Galena	4		Nondalton	3
	Mountain Village	4		Nulato	4		New Stuyahok	3
	Kaltag	3		Napakiak	4		Homer	3

Appendix Table C3. -- Community network in-degree centrality for questions: Please list the top 3 communities your community depends on for goods and supplies, such as groceries, fuel, household supplies, construction material and hardware. (Q8); Do any of the children in your community under age 18 attend school in another community? (Q9); and for those businesses that are not available in your community, please list the top three communities that people go to for services. (Q22).

Goods and supplies	Community	In-degree	Attend school in other community	Community	In-degree	Fishery business services	Community	In-degree
	Anchorage	110		Sitka	44		Anchorage	40
	Seattle	51		Galena	29		Seattle	20
	Fairbanks	32		Anchorage	14		Homer	13
	Bethel	22		Nenana	13		Ketchikan	10
	Ketchikan	12		Bethel	6		Seward	9
	Juneau	10		Dillingham	3		Fairbanks	8
	Soldotna	10		Craig	3		Wrangell	7
	Nome	9		Klawock	3		Kodiak	7
	Homer	9		Glennallen	3		Dillingham	5
	Dillingham	8		Kenai	2		Bethel	5

APPENDIX D: SURVEY RESPONSE RATES

Appendix Table D1. -- Alaska Community Survey Implementation and Response

Community	Number of surveys received	Number of surveys returned
Adak	2	2
Akhiok	2	1
Akiachak	2	1
Akiak	2	1
Akutan	2	1
Alakanuk	2	2
Aleknagik	2	1
Alitak Bay	1	1
Allakaket	3	2
Anchor Point	1	1
Anchorage	2	1
Angoon	2	0
Aniak	2	0
Anvik	2	0
Atka	2	1
Barrow	2	1
Bethel	2	2
Brevig Mission	2	2
Chefornak	2	1
Chenega	1	1
Chevak	2	1
Chignik (Bay)	2	1
Chignik Lagoon	2	1
Chignik Lake	2	0
Chitina	1	0
Chuathbaluk	2	1
Chugiak	1	0
Clam Gulch	1	0
Clark's Point	2	0
Cold Bay	1	1
Cooper Landing	1	0
Copper Center	1	1
Cordova	1	1
Craig	2	1
Delta Junction	1	1
Dillingham	2	1
Diomede	2	1
Douglas	1	0
Eagle River	2	1

Appendix Table D1. -- Cont.

Community	Number of surveys received	Number of surveys returned
Edna Bay	1	1
Eek	2	1
Egegik	2	1
Ekuk	2	1
Ekwok	2	1
Elfin Cove	1	1
Elim	2	0
Emmonak	2	0
Excursion Inlet	1	0
Fairbanks	2	1
False Pass	2	1
Fort Yukon	2	1
Fritz Creek	1	0
Gakona	2	1
Galena	2	2
Gambell	2	1
Glennallen	2	0
Golovin	2	0
Goodnews Bay	2	0
Grayling	2	1
Gustavus	2	2
Haines	2	1
Halibut Cove	1	0
Healy	1	1
Hobart Bay	1	0
Holy Cross	2	2
Homer	2	2
Hoonah	2	0
Hooper Bay	2	2
Huslia	2	1
Hydaburg	2	1
Hyder	2	1
Igiugig	2	1
Iliamna	2	1
Ivanof Bay	1	0
Juneau	3	1
Kake	2	0
Kaltag	2	2
Karluk	2	2

Appendix Table D1. -- Cont.

Community	Number of surveys received	Number of surveys returned
Kasigluk	2	0
Kasilof	1	0
Kenai	2	0
Ketchikan	2	1
Kiana	2	1
King Cove	2	0
King Salmon	1	0
Kipnuk	2	1
Kivalina	3	2
Klawock	2	1
Kodiak	2	1
Kokhanok	2	0
Koliganek	1	1
Kongiganak	2	1
Kotlik	2	0
Kotzebue	2	0
Koyuk	2	0
Koyukuk	2	1
Kwethluk	2	0
Kwigillingok	2	0
Larsen Bay	2	1
Levelock	1	0
Lower Kalskag	2	1
Manley Hot Springs	1	1
Manokotak	2	0
Marshall	2	1
McGrath	2	1
Mekoryuk	2	2
Metlakatla	1	1
Meyers Chuck	2	0
Moose Pass	1	1
Mountain Village	2	0
Naknek	3	1
Nanwalek	2	1
Napakiak	2	2
Napaskiak	2	0
Nelson Lagoon	2	1
Nenana	2	1
New Stuyahok	2	1

Appendix Table D1. -- Cont.

Community	Number of surveys received	Number of surveys returned
Newhalen	2	2
Newtok	2	2
Nightmute	2	0
Nikiski	1	0
Nikolaevsk	1	1
Nikolski	3	2
Ninilchik	2	2
Noatak	1	1
Nome	2	2
Nondalton	2	1
North Pole	2	1
Nulato	2	2
Nunam Iqua	1	1
Nunapitchuk	2	2
Old Harbor	2	2
Oscarville	2	0
Ouzinkie	2	1
Palmer	3	1
Pedro Bay	2	2
Pelican	2	1
Perryville	2	2
Petersburg	2	2
Pilot Point	2	1
Pilot Station	2	0
Pitkas Point	1	1
Platinum	2	0
Point Baker	1	1
Point Lay	2	1
Port Alexander	1	1
Port Alsworth	2	2
Port Graham	2	1
Port Heiden	2	1
Port Lions	2	1
Port Moller	1	1
Port Protection	1	1
Portage Creek	2	0
Prudhoe Bay	1	0
Quinhagak	2	1
Ruby	2	2

Appendix Table D1. -- Cont.

Community	Number of surveys received	Number of surveys returned
Russian Mission	2	1
Saint George	2	0
Saint Mary's	2	1
Saint Michael	2	2
Saint Paul	2	1
Sand Point	2	2
Savoonga	2	2
Scammon Bay	2	1
Selawik	2	1
Seldovia	2	2
Seward	2	2
Shageluk	2	1
Shaktoolik	3	1
Shishmaref	2	1
Sitka	2	2
Skwentna	1	0
Sleetmute	1	0
Soldotna	1	0
South Naknek	1	1
Stebbins	2	1
Sterling	1	0
Stony River	2	2
Talkeetna	2	1
Tanana	2	1
Tatitlek	2	0
Tazlina	1	1
Teller	2	0
Tenakee Springs	1	1
Thorne Bay	2	1
Togiak	2	1
Tok	2	0
Toksook Bay	2	0
Tuluksak	2	1
Tuntutuliak	2	1
Tununak	2	1
Twin Hills	2	1
Ugashik	2	2
Unalakleet	2	1
Unalaska (Dutch Harbor)	2	1

Appendix Table D1. -- Cont.

Community	Number of surveys received	Number of surveys returned
Upper Kalskag	2	2
Valdez	2	0
Venetie	1	1
Wainwright	2	0
Wales	2	0
Whale Pass	2	1
White Mountain	2	2
Whittier	2	0
Willow	2	0
Wiseman	1	0
Wrangell	2	0
Yakutat	2	1

APPENDIX E: SURVEY INSTRUMENT

Alaska Community Survey

Sponsored by:
NOAA Fisheries (National Marine Fisheries Service)
Alaska Fisheries Science Center
Economic and Social Science Research Program

Questions?

Please contact Amber Himes-Cornell, AFSC Social Scientist
Phone: (206) 526-4221
Email: Amber.Himes@noaa.gov

OMB Control No.: 0648-0626 **EXPIRATION DATE:** 03/31/2017

This survey is voluntary. **All responses are anonymous.**

SURVEY INSTRUCTIONS

◊ All answers given in this survey should reflect information about [COMMUNITY NAME].

◊ Please ask questions if anything is unclear. Contact Dr. Amber Himes-Cornell at Amber.Himes@noaa.gov or at (206)526-4221.

◊ Please use pen in blue or black ink.

◊ Please **DO NOT** write your name anywhere on this survey.

◊ Please mark only one answer for each question unless otherwise instructed.

◊ If you are unable to answer the question, please write why you are unable to answer in the margin. (e.g. Data not available)

THANK YOU FOR YOUR TIME AND PARTICIPATION

Q1 **How many people live in [COMMUNITY NAME]…** *Please indicate the source of the number of people or if the number is an estimation. Seasonal workers includes all industries (for example, fishing, construction, tourism, etc.)*

… as year round residents? _____ people

- ❑ Source: _____
- ❑ This is an estimation.

… as seasonal workers or transients? _____ people

- ❑ Source: _____
- ❑ This is an estimation.

… as year round residents <u>and</u> work in a shore-side processing plant? _____ people

- ❑ Source: _____
- ❑ This is an estimation.

Q2 **On average, during which months does [COMMUNITY NAME] have seasonal workers living there?** *Seasonal workers includes all industries (for example, fishing, construction, tourism, etc.)*

Q3 **On average, how long is the fishing season(s) in [COMMUNITY NAME] each year?** *Please provide the months that fishing out of [COMMUNITY NAME] typically begins and ends each year and indicate which fishery(ies) you are referring to.*

Fishery: _____ From _____ to _____

Fishery: _____ From _____ to _____

Fishery: _____ From _____ to _____

Fishery: _____ From _____ to _____

Q4 **In what month(s) does the population in [COMMUNITY NAME] reach its annual peak?**

Q5 **To what degree is this peak in population driven by employment in the fishing sectors** (For example, processing plants, commercial fishing, subsistence fishing, recreational/sport fishing, and charter fishing)?

❑ Entirely ❑ Mostly ❑ Somewhat ❑ A little ❑ Not at all

Q6 **We would like to learn about how your community is interrelated with other communities. Below is a list of ways that your community may engage with other communities. Please list up to 5 communities that [COMMUNITY NAME] residents interact with the most and how residents interact with them.** Check all that apply.

List community name	Share local fisheries information	Share general public services	Share traditional knowledge	Share professional services (e.g., law, medical)	Share resources (e.g., fuel, food, medicines)	Share culture (traditional events)
	❑	❑	❑	❑	❑	❑
	❑	❑	❑	❑	❑	❑
	❑	❑	❑	❑	❑	❑
	❑	❑	❑	❑	❑	❑

	❑	❑	❑	❑	❑	❑

Q7 Which communities do residents of [COMMUNITY NAME] travel to on a regular basis and what mode of transportation is available to travel there? Please list up to 5 communities and check all the modes of transportation available to travel there.

List community name	Air	Ice road	River	Winter trails	Skiff	Ferry
	❑	❑	❑	❑	❑	❑
	❑	❑	❑	❑	❑	❑
	❑	❑	❑	❑	❑	❑
	❑	❑	❑	❑	❑	❑
	❑	❑	❑	❑	❑	❑

Q8 Please list the top 3 cities or communities that [COMMUNITY NAME] depends on for goods and supplies, such as groceries, fuel, household supplies, construction materials, and hardware.

1) _____

2) _____

3) _____

Q9 Do any of the children in your community under age 18 attend school in another community?

❑ Yes ➡ **Go to Q9a**

❑ Local children are enrolled in correspondence courses.

❑ Local children attend schools located in [COMMUNITY NAME].

Q9a If so, please list the community(ies) where local children attend school. Please only list communities where kindergarten through 12th grade schools are attended by local students.

Q10 Which of the following types of infrastructure projects, if any, have been completed in [COMMUNITY NAME] in the last 10 years, are currently in progress, or are being planned for completion in the next 10 years? *Please mark the applicable boxes for each project.*

Type of infrastructure project	Completed in the last 10 years?	Currently in progress?	Plan to complete in the next 10 years?	Year of completion or planned completion (if not known, write "unknown")
Fish cleaning station	❑	❑	❑	_____
Barge landing area	❑	❑	❑	_____
Construct new dock space	❑	❑	❑	_____
Improve existing dock structure	❑	❑	❑	_____
Electricity serving the dock	❑	❑	❑	_____
Water serving the dock	❑	❑	❑	_____
Roads serving dock space	❑	❑	❑	_____
Pilings	❑	❑	❑	_____
Fuel tanks at dock	❑	❑	❑	_____
Breakwater	❑	❑	❑	_____
Harbor dredging	❑	❑	❑	_____
Jetty	❑	❑	❑	_____
Dry dock space	❑	❑	❑	_____
Haul out facilities	❑	❑	❑	_____
EPA certified boat cleaning station	❑	❑	❑	_____
Broadband internet access	❑	❑	❑	_____
Road	❑	❑	❑	_____
Airport/seaplane base	❑	❑	❑	_____
Water and sewer pipelines	❑	❑	❑	_____
Diesel powerhouse	❑	❑	❑	_____
Sewage treatment	❑	❑	❑	_____
Water treatment	❑	❑	❑	_____
Alternative energy (hydro, wind, tidal)	❑	❑	❑	_____
New landfill/solid waste site	❑	❑	❑	_____
Community center/Library	❑	❑	❑	_____
Public safety – Police department	❑	❑	❑	_____
Emergency response	❑	❑	❑	_____
Fire department	❑	❑	❑	_____
School	❑	❑	❑	_____
Telephone service	❑	❑	❑	_____
Post office	❑	❑	❑	_____
Other_____	❑	❑	❑	_____

Q11 What is the maximum vessel length that can use moorage in [COMMUNITY NAME]?

Vessels up to _____ feet long can use moorage in [COMMUNITY NAME].

❑ No dock space is available for public moorage.

Q12 How many feet of <u>public</u> dock space for moorage are located in and around the port of [COMMUNITY NAME] for permanent and transient vessels?

_____ feet of dock space is available for permanent vessels to moor at.

❑ No dock space is available for permanent vessels to moor at.

_____ feet of dock space is available for transient vessels to moor at.

❑ No dock space is available for transient vessels to moor at.

Q13 What is the annual revenue that public moorage facilities earned in 2013?

US$ _____

Q14 Which of the following types of regulated vessels, if any, is the port of [COMMUNITY NAME] capable of handling? *Regulated vessels are those that are specially regulated by the U.S. Coast Guard and must conform to the Maritime Transportation Security Act.*

❑ Rescue vessels (e.g., Coast Guard)
❑ Cruise ships
❑ Ferries
❑ Fuel barges
❑ HAZMAT
❑ None of the above
❑ Other: _____

Q15 Which size classes, if any, of commercial fishing boats use [COMMUNITY NAME] as their base of operation <u>during</u> the fishing season? *Check all that apply.*

❑ Under 35 feet
❑ 35 to 60 feet
❑ 61 to 125 feet
❑ Over 125 feet
❑ None

Q16 How many boats are based in [COMMUNITY NAME] compared to five years ago?

	A lot more	More	No more or less	Less	A lot less
Charter boats/Party boats	❑	❑	❑	❑	❑
Private pleasure boats	❑	❑	❑	❑	❑
Commercial fishing boats	❑	❑	❑	❑	❑
Boats shorter than 35 feet	❑	❑	❑	❑	❑
Boats between 35 and 60 feet	❑	❑	❑	❑	❑
Boats between 61 and 125 feet	❑	❑	❑	❑	❑
Boats longer than 125 feet	❑	❑	❑	❑	❑
Other (specify):	❑	❑	❑	❑	❑

Q16a For any changes you noted in Q16, please describe any changes that you have noticed.

Q17 To the best of your knowledge, what type of recreational or sport fishing, if any, goes on in [COMMUNITY NAME]? *Check all that apply.*

- ❑ Charter boats or party boats
- ❑ Private boats owned by local residents
- ❑ Private boats owned by non-residents
- ❑ Shore-based or dock fishing by local residents
- ❑ Shore-based or dock fishing by non-residents
- ❑ Other: _____
- ❑ None

Q18 What saltwater species, if any, are targeted by recreational fishermen that use boats based in [COMMUNITY NAME]? *Check all that apply.*

- ❑ Pink salmon
- ❑ Chum salmon
- ❑ Chinook/King salmon
- ❑ Coho/Silver salmon
- ❑ Sockeye/Red salmon
- ❑ Halibut
- ❑ Rockfish
- ❑ Crab
- ❑ Black cod/sablefish
- ❑ Shrimp
- ❑ Clam
- ❑ Other: _____
- ❑ None

Q19 Which fishing gear types, if any, are used by commercial fishing boats that use [COMMUNITY NAME] as their base of operation <u>during</u> the fishing season? *Check all that apply.*

- ❑ Trawl
- ❑ Pots
- ❑ Longline
- ❑ Gillnet
- ❑ Purse seiner
- ❑ Troll
- ❑ Other: _____
- ❑ None of the above

Q20 What are the three (3) most important subsistence marine or aquatic resources to the residents of [COMMUNITY NAME]? *Subsistence may be defined as the harvest of local natural resources for local consumption. We encourage you to answer this question in conjunction with others from [COMMUNITY NAME].*

1) _____

2) _____

3) _____

- ❑ Subsistence harvesting is not done by residents of [COMMUNITY NAME].

Q21 What types of fishing support businesses are located in [COMMUNITY NAME])? *From the list below, check one box for each type of business to indicate if it is present in [COMMUNITY NAME].*

Business type	**Located in the community?**
Fish processing plants	❑ Yes ❑ No
Fishing gear sales	❑ Yes ❑ No
Fishing gear manufacturer	❑ Yes ❑ No
Boat repair	❑ Yes ❑ No
Electrical	❑ Yes ❑ No
Welding	❑ Yes ❑ No
Mechanical services	❑ Yes ❑ No
Machine Shop	❑ Yes ❑ No
Hydraulics	❑ Yes ❑ No
Haulout facilities for small boats (less than 60 tons)	❑ Yes ❑ No
Haulout facilities for large boats (more than 60 tons)	❑ Yes ❑ No
Tidal grid for small boats (less than 60 tons)	❑ Yes ❑ No
Tidal grid for large boats (more than 60 tons)	❑ Yes ❑ No
Commercial fishing vessel moorage	❑ Yes ❑ No
Recreational fishing vessel moorage	❑ Yes ❑ No
Tackle sales	❑ Yes ❑ No
Bait sales	❑ Yes ❑ No
Commercial cold storage facilities	❑ Yes ❑ No
Drydock storage	❑ Yes ❑ No
Marine Refrigeration	❑ Yes ❑ No
Fish lodges	❑ Yes ❑ No
Fishing business attorneys	❑ Yes ❑ No
Fishing related bookkeeping	❑ Yes ❑ No
Boat fuel Sales	❑ Yes ❑ No
Fishing gear repair	❑ Yes ❑ No
Fishing gear storage	❑ Yes ❑ No
Ice sales	❑ Yes ❑ No
Water taxi	❑ Yes ❑ No
Seaplane service	❑ Yes ❑ No
Air taxi	❑ Yes ❑ No
Other (Specify):	❑ Yes ❑ No

Q22 For those businesses in Q21 that are not available in [COMMUNITY NAME], please list the top three communities that people go to for these services.

1) _____

2) _____

3) _____

Q23 Which public social services are available in [COMMUNITY NAME]? *Check all that apply.*

- ❑ Medical services or doctors
- ❑ Food bank
- ❑ Soup kitchen
- ❑ Job placement services
- ❑ Publicly subsidized housing
- ❑ Public library
- ❑ Other (Specify): _____

Q24 Which, if any, natural resource-based industries does [COMMUNITY NAME]'s economy rely upon? *Check all that apply.*

- ❑ Mining
- ❑ Logging
- ❑ Fishing
- ❑ Oil and natural gas exploration or drilling
- ❑ Geothermal
- ❑ Ecotourism (e.g. whale watching, kayaking)
- ❑ Sport hunting and fishing
- ❑ Other: _____
- ❑ None of the above

Q25 How much total revenue did the community of [COMMUNITY NAME] receive from fisheries related taxes or fee programs in 2013? *If no revenue was received from one of the sources of revenue listed, please write $0 in the "Revenue Received" column. If revenue is received for one of the sources of revenue listed, but there are no records of the total amount, please write "unknown."*

Source of Revenue	Amount of Total Revenue Received in US$
Fishing gear storage on public/tribal land	US$_____
Leasing public/tribal land to members of the fishing industry	US$_____
Tax on the sale of marine fuel (used to power private and commercially owned boats)	US$_____
Harbor rental	US$_____
Municipal dock use fees (for example, container off-loading/on-loading, fishing gear transfer, etc.)	US$_____
Other:_____	US$_____
Other:_____	US$_____
Other:_____	US$_____

Q26 Does the [COMMUNITY NAME] local government, organizations, or other local entities receive any funding or grants from a Community Development Quota entity? *If funding or grants were received in 2013, please indicate how much the local government received.*

- ❑ [COMMUNITY NAME] received $ _____ in funding or grants from a Community Development Quota entity in 2013.
- ❑ [COMMUNITY NAME] received $ _____ in special allocations from a Community Development Quota entity in 2013.
- ❑ [COMMUNITY NAME] does not receive any funding or grants from Community Development Quota entities.

Q27 Which of [COMMUNITY NAME]'s public services are at least partially supported or funded by any of the following: Local or Borough Raw Fish Tax, Shared Fisheries Business Tax, the Fisheries Resource Landing Tax, or marine fuel sales tax? *Check all that apply.*

- ❑ Maintaining the harbor
- ❑ Hospital/medical clinic/emergency response
- ❑ Educational scholarships
- ❑ Roads
- ❑ Social services (e.g., libraries, etc.)
- ❑ Water and wastewater systems

❑ Roads
❑ Police/enforcement/fire protection
❑ Not able to determine
❑ Other: _____
❑ No community services are funded by these taxes.

Q28 Please describe any local fishing-related fee programs charged to the fishing industry and which public services and infrastructure they support?

- ❑ [COMMUNITY NAME] does not administer any local fishing-related fee programs.

Q29 How does [COMMUNITY NAME] participate in the fisheries management process in Alaska?

- ❑ [COMMUNITY NAME] does not participate at all in the fisheries management process.
- ❑ [COMMUNITY NAME] has a paid staff member that attends North Pacific Fisheries Management Council meetings and/or Board of Fisheries meetings.
- ❑ [COMMUNITY NAME] has a representative that participates in North Pacific Fisheries Management Council committees or advisory groups.
- ❑ [COMMUNITY NAME] has a representative that sits on regional fisheries advisory and/or working groups run by Alaska Department of Fish and Game.
- ❑ [COMMUNITY NAME] has a representative that participates in the Federal Subsistence Board or Federal Subsistence Regional Advisory Council process.
- ❑ [COMMUNITY NAME] relies on regional organizations, such as the Gulf of Alaska Coastal Communities Coalition, Southeast Conference, or Southwest Alaska Municipal Conference, to provide information on fisheries management issues.
- ❑ [COMMUNITY NAME] financially supports research organizations, industry coalitions, and trade associations, such as_____.
- ❑ Other: _____

Q30 In your opinion, what are the current challenges for the portion of [COMMUNITY NAME]'s economy that is based on fishing? *Please feel free to provide additional information on a separate sheet of paper.*

Q31 Please describe the effects you've seen of fisheries policies or management actions you've seen, if any, on [COMMUNITY NAME]. *Please describe the policies or management action(s), both positive and negative and what impact it has had on [COMMUNITY NAME]. Please feel free to provide additional information on a separate sheet of paper.*

Q32 **Which <u>past or current</u> fisheries policy or management action affected [COMMUNITY NAME] the most?** *Please describe the policy or management action, positive or negative, and how [COMMUNITY NAME] residents were affected. Please feel free to provide additional information on a separate sheet of paper.*

Q33 **What, if any, <u>potential future</u> fisheries policy or management action concerns [COMMUNITY NAME] the most?** *Please describe the policy or management action, positive or negative, and why [COMMUNITY NAME] residents are concerned. Please feel free to provide additional information on a separate sheet of paper.*

Q34 **Who contributed to filling out this survey?** *Check all that apply. The answers to this question will not be reported.*

- ☐ Local government staff
- ☐ Local elected officials

- ☐ Harbormaster
- ☐ Tribal Council member or staff
- ☐ Non-governmental organization (for example, GOACCC, SWAMC, etc.)
- ☐ Fishing industry participants (for example, commercial/recreational/subsistence fishermen, processing plant workers, etc.)
- ☐ Local fishing support sector businesses
- ☐ Other: _____

Please use the space below to provide us with any additional information you would like us to know about [COMMUNITY NAME] that shows how [COMMUNITY NAME] is engaged in or affected by fisheries. *Please feel free to provide additional information on a separate sheet of paper.*

THANK YOU FOR YOUR PARTICIPATION!

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