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Traditional food security and food sovereignty in the coastal region of South-Central Alaska

Joseph Nyholm^a, Amanda Walch ^b and Leslie Redmond^c

^aHealth Education & Wellness, Chugachmuit, Seward, Alaska, USA; ^bCollege of Health, University of Alaska Anchorage, Anchorage, AK, USA; ^cAgricultural and Food Sciences, University of Manitoba, Winnipeg, MB, Canada

ABSTRACT

A food assessment questionnaire was completed by Alutiiq and Eyak peoples of the Chugach Region of Alaska in 2016–2017. This questionnaire, conducted by the Chugach Regional Resource Commission, gathered 87 responses from adults residing in seven communities. The questions related to traditional food systems, food security, and food sovereignty and were organised into six sections: Community Food Resources, Diet and Health, Culture, Organisation and Governance, Food Resources, and Natural Resources and Environment. Nine questions directly addressed food sovereignty. Results revealed the importance of traditional food sources in the communities, foods that are not readily available or are difficult to access, resources that are useful to improve traditional food security, health problems that are perceived to be caused or exacerbated by the lack of traditional foods in the area, traditional foods commonly consumed, and barriers from accessing traditional foods. Additionally, recommendations for improving food systems and addressing barriers are provided.

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Food sovereignty; food security; Chugach Region; Alaska; traditional foods



Introduction

The role, access, and management of traditional, culturally appropriate foods in the health and wellbeing of Indigenous peoples has continued to increase in importance globally. Despite this, formal assessments of traditional food security and food sovereignty are lacking, including among the Indigenous peoples of Alaska. The food systems of Indigenous peoples in Alaska vary greatly by region and have been impacted by modern issues of health, access, and environmental changes, yet an assessment of how these factors may impact food security, traditional food security, and food sovereignty of the Indigenous peoples occupying the coastal Chugach Region of South-Central Alaska has not previously been conducted.

The coastal Chugach Region of South-Central Alaska consists of approximately 10 million acres, extending from the southern portion of the Kenai Peninsula to the Malaspina Glacier in the north. Within the region lies the Prince William Sound, the Gulf of Alaska, a multitude of glaciers, 5,000 miles of coastline, and seven coastal communities. These communities include Cordova/Eyak (IiyaaGdaad), Seward (Qutalleq), Valdez, Port Graham (Paluwik), Chenega (Caniqaq), Nanwalek (English Bay) and Tatitlek (Taatiilaq). The combined population of all seven

communities is just under 8,000 in 2023, with approximately 9.5% of the total population identifying as Alaska Native or American Indian – henceforth referred to as Indigenous – peoples [1,2]. The region's varied landscape of coastline, islands, and mountains creates an environment in which there is little to no cultivable land nor sources of domesticated animals. This, combined with the sub-arctic climate of South-Central Alaska, has shaped the traditional food systems of the area's Indigenous peoples for thousands of years to consist primarily of seasonal harvests of terrestrial, marine, and intertidal species. Modern day threats to these traditional food sources, such as climate change, commercial and industrial development, and regulations on traditional food gathering practices such as hunting and fishing, are compromising food security, a trend that can be observed within many Indigenous populations across the Circumpolar North [3–9].

Food security is typically defined within three pillars: availability, access and utilisation. Availability includes sufficient quantities of food that are available on a consistent basis, access includes the ability to attain or purchase food by socially acceptable means, and utilisation includes the ability to meet daily nutrient requirements [10]. For Indigenous peoples, traditional foods are an integral part of each of these pillars [6,11,12]. The inclusion of traditional foods in this

CONTACT Amanda Walch  akwalch@alaska.edu  College of Health, University of Alaska Anchorage, Anchorage, AK, USA

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context is called “traditional food security” and is defined loosely to include any definition that is determined by the communities themselves [13]. Traditional food security combines the cultural, physical, emotional, and spiritual beliefs and practices surrounding traditional foods and practices [14]. There are no known measures of food security that include traditional food or traditional food systems of Indigenous people [6,15,16].

Food insecurity is high in many rural areas of the United States, and in rural Alaska they are even higher. Although exact numbers are unknown, estimates of food insecurity prevalence among adults in rural Alaska are upwards of 20–25%, whereas estimates among adults from rural America, as a whole, are approximately 15% [14,17]. Food security means having, at all times, both physical and economic access to sufficient food to meet dietary needs for a productive and healthy life. The definition of food security as defined from the Inuit Food Security Conceptual Framework differs from the academic definition, and includes the relationships between culture, when, where and how to obtain, process, store and consume food; the importance of dancing and potlucks, the sharing of food; and how the economic drivers of the community are tied to these activities. It also includes the right for communities to govern how food is obtained, processed, stored and consumed [13].

According to the United States Food Sovereignty Alliance, food sovereignty is “the right of peoples to healthy and culturally appropriate food produced through ecologically sound and sustainable methods, and their right to define their own food and agriculture systems” [18]. The definition assumes there is equitable sharing of land, seeds, water, and other resources and information. It dictates that food is a right of all peoples, should be at the centre of policies and programmes, is built on traditional knowledge and skills, and works with nature to sustain the local food system. A widely recognised definition of food sovereignty comes from the international organisation La Via Campesina [19], an organisation that started a movement to put food sovereignty and its practices at the forefront, with its first global forum in Mali in 2007. At this meeting a consensus called the Declaration of Nyéléni determined that “food sovereignty is the right of peoples to healthy and culturally appropriate food produced through ecologically sound and sustainable methods, and their right to define their own food and agriculture systems. It puts the aspirations and needs of those who produce, distribute and consume food at the heart of food systems and policies rather than the demands of markets and corporations”

[20]. The definition assumes that all people have the right to healthy and culturally appropriate foods that are obtained through ecologically sound and sustainable methods.

There are many Indigenous groups leading efforts to better understand and address food insecurity and food sovereignty in Alaska. One such group is the Inuit Circumpolar Council Alaska (ICC-A), a non-profit organisation working on behalf of Inuit communities in Alaska to promote, protect, and advance culture and society. In 2015, the ICC-A explored definitions of food security and food sovereignty for Indigenous populations and created the Alaskan Inuit Food Security Conceptual Framework [13]. This framework offered a picture of food security and food sovereignty across much of western and northern Alaska and acknowledged varying cultural norms, food sources, and local governance systems. The framework illuminated that Indigenous Alaskans face challenges in managing and decision-making around food security issues due to current regulations and policy. There was also a focus on promoting Indigenous knowledge and languages, and developing educational programmes that have an influence on protecting food security.

The Chugach Regional Resource Commission (CRRC) is another Indigenous-led non-profit organisation dedicated to advancing the economic, social, and cultural development of the people of the Chugach region, specifically as they relate to the management decision-making process of natural resources. In 2017, the CRRC conducted a food assessment questionnaire in the coastal region of South-Central Alaska with funding from the First Nations Development Institute’s Food Sovereignty Assessment Grant to assess the current food system in light of modern issues of health, access, and the environment and to produce a regional recipe book. The questionnaire was modelled after a tool developed by the First Nations Development Institute [21], but included specific changes tailored to the Chugach Region foods and culture, such as questions that focused on different species of salmon. The main goal of the CRRC food assessment questionnaire was to draw conclusions and make recommendations surrounding food security and food sovereignty in the area, while also determining avenues for further research.

The analysis, summary, and recommendations of the food assessment questionnaire were completed in partial fulfilment of the requirements for the Master Degree in Dietetics and Nutrition at the University of Alaska Anchorage by the first author [22]. The first author is an Indigenous educator and researcher with Chugachmiut, a partner of CRRC that provides health

and social services to the seven communities of the Chugach Region. This paper will summarise some of the key findings from the food assessment questionnaire, identify factors that impact food security and food sovereignty of the Alutiiq and Eyak peoples in the Chugach Region of Alaska, and provide recommendations to aid in improving food security and food sovereignty in the region.

Methods

Questionnaire development

The CRRC designed a questionnaire based on the First Nations Development Institute's Food Sovereignty Assessment Tool, and included region specific terms and food items. The CRRC, which is governed by a board of directors that is composed of a Tribally elected representative from each of the seven Chugach Region communities, was involved in the process of designing the questionnaire and carrying out the survey. The CRRC also helped to narrow the focus of the analysis and decided which questions to include in the analysis in order to meet the vision set forth by their Tribally elected board of directors. The questionnaire had six sections: Community Food Resources; Diet and Health; Culture; Organisation and Governance; Food Resources; and Natural Resources and Environment. A total of 70 questions were on the questionnaire, consisting of a variety of topics, such as the importance of community food resources, perceptions of personal health, and thoughts on organisations and governance surrounding food and culture. The six sections of the CRRC food assessment questionnaire aligned with the six sections of the Alaskan Inuit Food Security Conceptual Framework. Visually, the framework can be viewed in the shape of a drum, with food security at the centre, surrounded by the main components of food security: culture, availability, accessibility, health and wellness, stability, decision-making power and management, and food sovereignty [13]. The concentric circles of the framework illustrate the interconnectedness of the various concepts as well as their dependence on each other and serve to provide a multilayered definition of food sovereignty held together by the spirit of everything: Cillam Cua, Eslam Yuga, Iñua and Ellam Yua, which roughly translates to "the spirit of all within the arctic". The final questionnaire also included a brief demographics section. The survey data were then collated and analysed by the first author and key recommendations were provided to CRRC and each of the communities based on the analysed findings.

Sample

A cross-sectional sample of Alutiiq and Eyak adults from the seven different Chugach Region communities were invited to complete the questionnaire through a combination of door-to-door outreach and via mail during the summer months of 2017. Eligibility criteria included adults and full-time residents of one of the communities.

Analysis

Questions that sought to determine factors relating to traditional food security and food sovereignty were identified from the 70-question questionnaire. A total of nine questions were selected: three questions from Section 1: Community Food Resources; one question from Section 2: Diet and Health; and five questions from Section 5: Food Resources.

Questionnaire responses were collated and descriptive statistics were used to determine percentages and averages. Means were calculated for questions with ranked response and percentages were calculated for multiple choice style questions. Free text responses were analysed for key themes, with the top three to four themes identified for each question.

Results

A total of nine questions out of the 70-question questionnaire were analysed. Additional demographic characteristics of the participants, along with the communities in which they resided, were recorded. Of the 87 respondents who completed the questionnaire, 43.7% were male, the average age was 43.6 years, and the average time spent living in their respective communities was 34.2 years. Due to the nature of small community sizes and the potential ability to identify residents, the CRRC requested other demographic characteristics and locations to be confidential.

Section 1: community food resources

Three questions from Section 1 were related to traditional food security. Question 1A asked, "How important are the following sources of food for people in your community?" Results identified the most important source was hunting and gathering with 92% ($n = 87$) of respondents indicating that it was very important (Figure 1). The second, third, and fourth most important sources were sharing, grocery stores, and trade and barter, respectively. Additionally, gardens were noted to be important by some respondents. Of the four garden

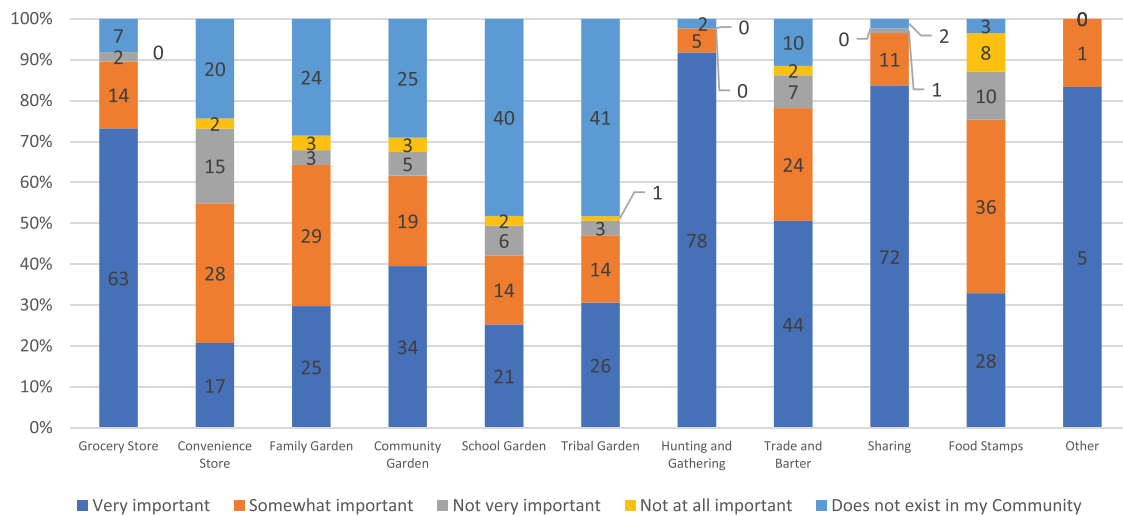


Figure 1. Questionnaire responses to the question “How important are the following sources of food for people in your community?”.

types (family, community, school, and tribal), community gardens were deemed to be the most important with 40% ($n = 87$) of respondents listing them as very important. School and tribal gardens were reported to be non-existent or not more important than the other garden types. Finally, food stamps (Supplemental Nutrition Assistance Program [SNAP]) funds were deemed to be the least important of all the sources, with 11.7% ($n = 10$) of respondents stating they were not very important.

Question 1C asked, “Are there certain foods that you need or would like to eat that are difficult to get, or are not available, in your community?” Of the 84 respondents, 64.3% ($n = 54$) answered yes, that there were certain foods that were hard to get or not available (Figure 2). Following was the free-response sub-question: “If yes, what are those foods – and why are they difficult to get or not available – and what can be done to get them?” Of the 54 respondents who completed the sub-question, 42.6% ($n = 23$) mentioned that fresh fruit and vegetables were difficult to obtain. Two other notable responses were that people needed better access to traditional foods and that there needed to be classes on traditional foods.

Question 1E asked, “Which of the following do you think are useful, or would be useful, in improving your food resources?” Figure 3 shows that three resources deemed to be the most useful and somewhat useful were recipes to make traditional foods, information for preparing traditional foods, and nutritional information for a variety of traditional foods. The resources that were seen as the least useful were information on government programmes followed by budgeting help and information on gardening.

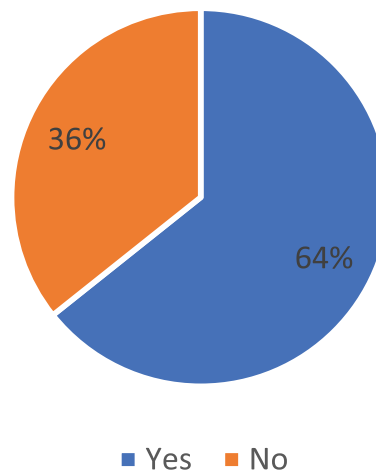


Figure 2. Questionnaire responses to the question “Are there certain foods that you need or would like to eat that are difficult to get, or are not available, in your community?”.

Section 2: diet and health

One question from Section 2 was related to traditional food security. Question 2D asked, “Are health problems in your community caused or exacerbated by lack of healthy, nutritious, traditional foods?” Nearly half of the respondents (42.5%, $n = 37$) answered “Yes” (Figure 4). Further, 48.3% ($n = 42$) of respondents were unsure, and only 9.2% ($n = 8$) of respondents thought that health problems were not related to the lack of healthy, nutritious, traditional foods.

Section 5: food resources

A total of five questions from Section 5 were related to traditional food security. One of the questions, 5A, asked

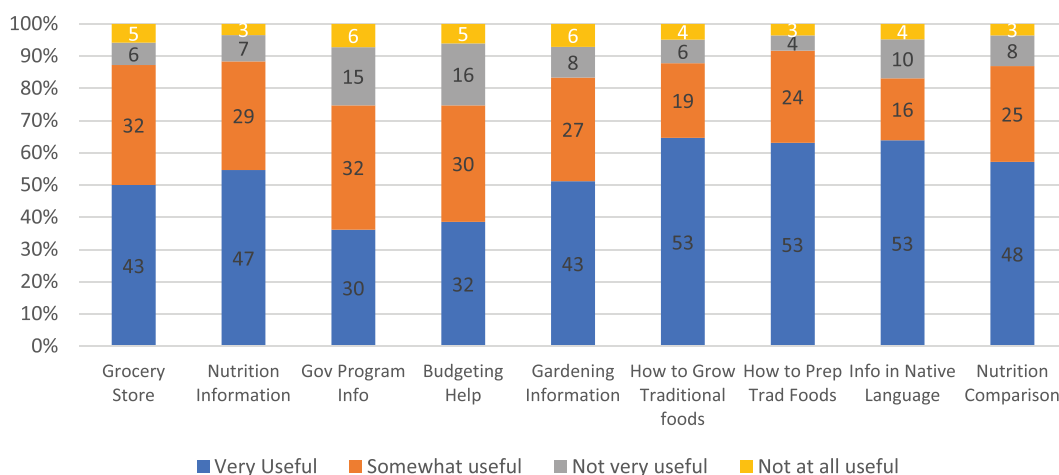


Figure 3. Questionnaire responses to the question “Which of the following do you think are useful, or would be useful, in improving your food resources?”.

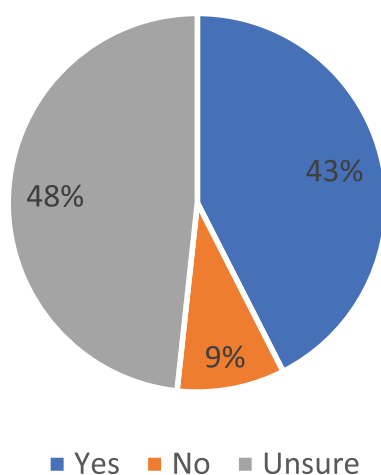


Figure 4. Questionnaire responses to the question “Are health problems in your community caused or exacerbated by lack of healthy, nutritious, traditional foods?”.

respondents to “Use the table below to record how often you or your household consumed each of the following traditional foods within the past 12 months”. The foods with the highest frequency of consumption included salmon, bidarkees, and berries (Figure 5). The foods that were consumed moderately (ten times or less per year) included: moose, shrimp, crab, clams, and herring eggs. The foods consumed the least, and that had the most “never consumed” responses, included: scallops, beach asparagus, porcupine, goat, deer, sea cucumbers, sea otter, sea lion, mushrooms, hare, beaver, birds, and garden vegetables.

Another question in this section, 5D, asked, “What are three primary traditional foods harvested in your community?” The most common food listed was fish/salmon with 79.7% ($n = 63$) of respondents responding affirmatively (Figure 6). The second most common food was seal with consumption by

40.5% ($n = 32$) of respondents. Some respondents also noted berries/plants and land mammals as primary foods.

The last three questions in this section related to traditional food security were also about traditional food access and availability. Question 5 L asked, “Of all the traditional food that you eat in a year, approximately how much (in %) do you get from (check the following)”. Seventy-nine respondents selected themselves and family members as a source and, on average, indicated that they received 65% of their traditional foods from that source (Figure 7). The second most selected option was friends, with 64 respondents reporting approximately 25% of their traditional foods from this source. Respondents also identified ceremonies and gatherings as sources of traditional foods. Figure 7 shows the total number of responses from each source.

Another question, 5N, asked, “Is there anything limiting you from accessing traditional foods?” The top three factors that limited respondents from accessing traditional foods were fuel (53.3%, $n = 40$), transportation (44%, $n = 33$), and time (28%, $n = 21$) (Figure 8). Skill, knowledge, desire, and physical ability were each reported in fewer than 20% of responses. Time opportunity in this question means that the time spent could have been used for something else.

Finally, respondents were asked, “Is your family able to eat as much traditional foods as they would like?” In total, 49.4% of the 41 respondents answered that they can get as much traditional foods as they would like (Figure 9). However, 16.8% ($n = 14$) of the respondents answered no, and the rest were unsure.

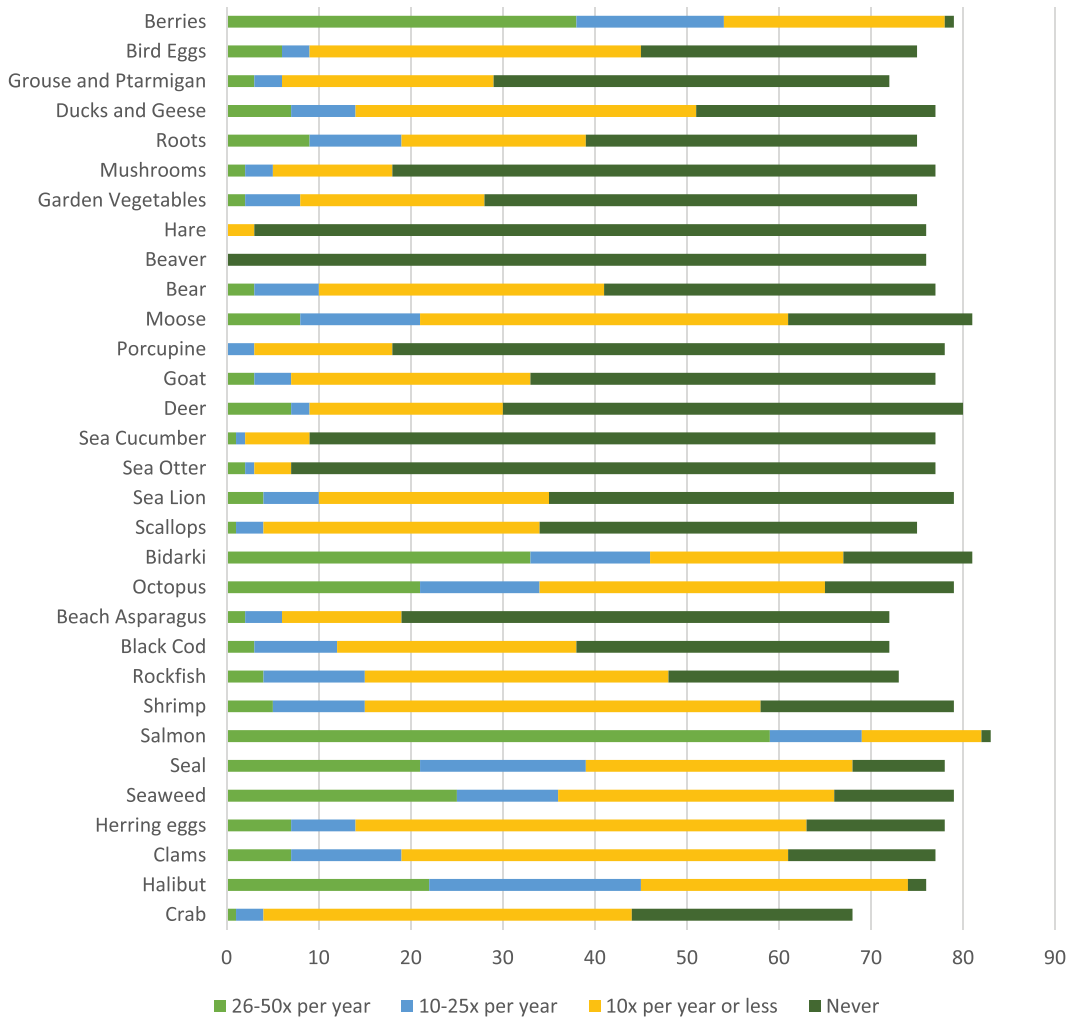


Figure 5. Traditional food frequency for the last 12 months.

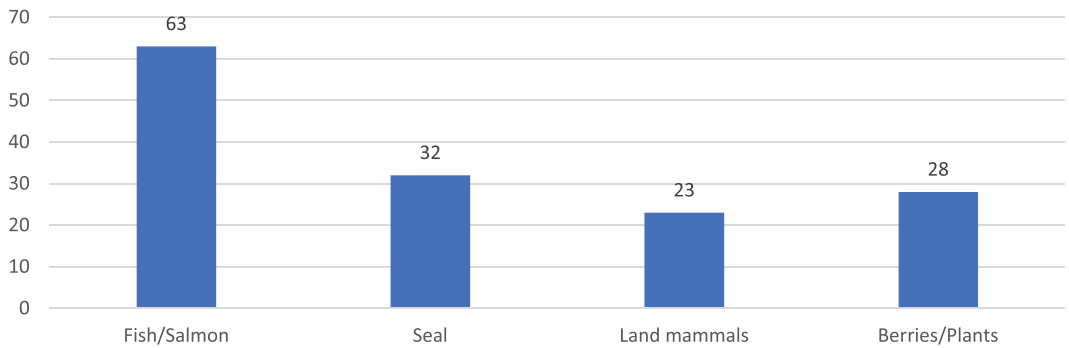


Figure 6. Questionnaire responses to the question “What are three primary traditional foods harvested in your community?”.

Discussion

This is the first known study looking at traditional food security and food sovereignty in the Coastal region of South-Central Alaska. Results found that residents in the area think traditional foods are important and should be passed on to the next generation, they are healthy, and are limited in availability and

difficult to access at times. Specific foods such as salmon, bidarkees, and berries were identified as important in their culture and the resources respondents thought to be the most useful were recipes to make traditional foods, information for preparing traditional foods, and nutritional information for a variety of traditional foods.

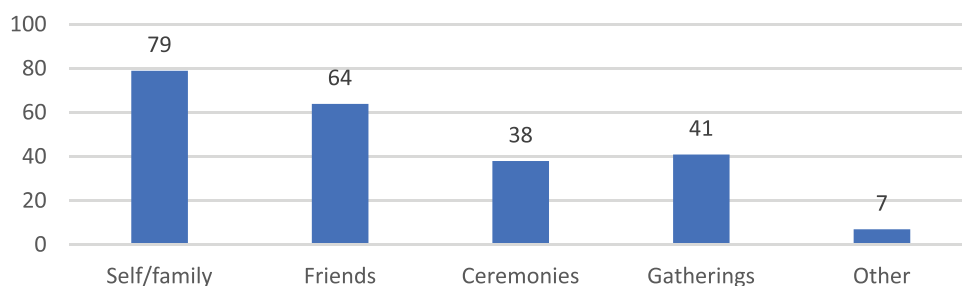


Figure 7. Questionnaire responses to the question “Of all the traditional food that you eat in a year, approximately how much (in %) do you get from the following?”.

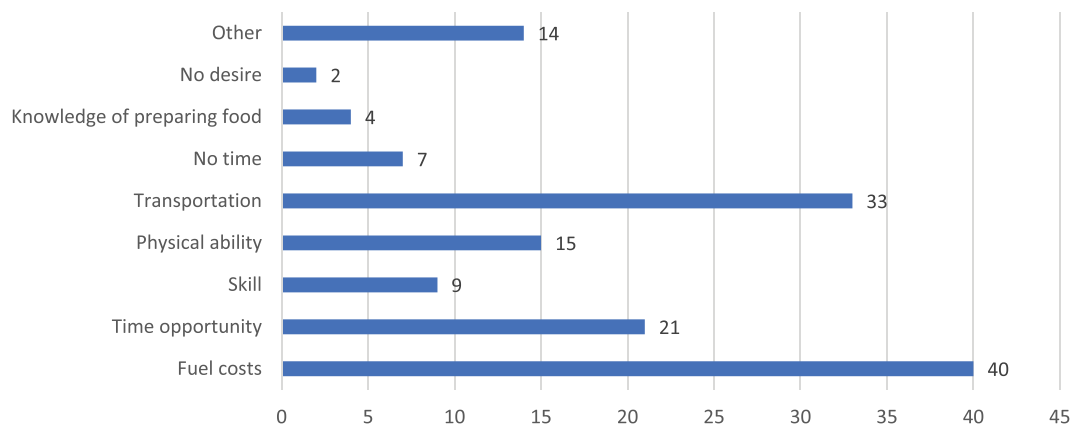


Figure 8. Questionnaire responses to the question “Is there anything limiting you from accessing traditional foods?”.

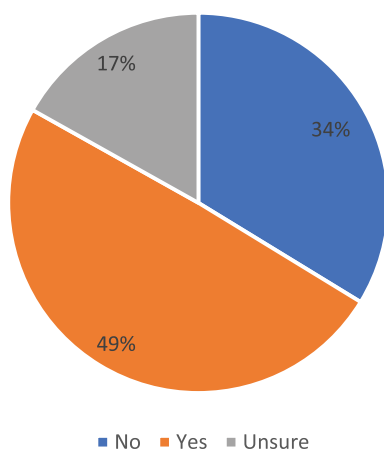


Figure 9. Questionnaire responses to the question “Is your family able to eat as much traditional food as they would like?”.

Community food resources

For question 1A (“How important are the following sources of food for people in your community?”), food stamps (i.e. SNAP) were deemed to be the least important food source. This could be due to cultural norms of having a negative association attached to food stamps. A negative association with food assistance has been reported in interviews in other rural communities in

Alaska due to the belief that food assistance programmes may negatively impact younger people’s motivation or the need for traditional methods of getting food [23]. Additionally, it was found that there were no school or tribal gardens in the communities, although other types of community gardens were considered to be important. Tribal and school organisations could explore garden-related grant opportunities. Therefore, outreach and education would be beneficial to both increase the availability of and access to healthy foods and help to decrease any possible stigma against SNAP funds, which can potentially be used for gardening items. Prince William Sound College and Cordova Extension Center, part of the statewide University of Alaska system, are both located within the Chugach region and could be potential partners in providing education, resources, and support in these communities.

Although Question 1C (“Are there certain foods that you need or would like to eat that are difficult to get, or are not available, in your community?”) did not directly ask about food insecurity, results indicated that a majority (64%) of respondents agreed that access to specific foods was limited in their communities, particularly fresh fruits and vegetables. Considering that an

estimated 20–25% of rural Alaskans are food insecure, this topic warrants further study in the Chugach region, especially in the wake of the COVID-19 pandemic when food insecurity rates in rural communities increased [14,24].

Recipes and information on preparing and growing traditional foods were identified as the most useful strategies for improving food resources in Question 1E (“Which of the following do you think are useful, or would be useful, in improving your food resources?”). The Alaska Native Tribal Health Consortium (ANTHC), a non-profit Tribal health organisation serving Alaska Native and American Indian people living in Alaska, has gathered traditional food recipes that included nutrition information; however, these included some traditional foods from across Alaska that may not be useful for food preparation in the Chugach area [25]. In 2018, the CRRC completed a project that ran parallel to this research in the form of a regional recipe book. They collected recipes from the Chugach region and included nutritional information on a traditional food in each recipe.

One recommendation that came out of the Section 1 questionnaire results would be to further assess the community members on their knowledge of and access to food assistance programmes. Education could be provided on how to use SNAP benefits to purchase hunting, fishing, and gardening supplies. In a recent study, fewer than 10% of rural Alaskans used their SNAP benefits in that manner [26].

The food assessment questionnaire did not mention the Food Distribution Program on Indian Reservations (FDPIR) programme, which in some cases can result in better access to adequate amounts of food than the typical SNAP benefits offer. FDPIR offers a set amount of assistance per month regardless of local prices, which can make it more beneficial in rural areas. Currently, Eyak is the only Chugach area community that participates in the programme and hosts a distribution centre. Port Graham, a coastal community located Southwest of the Chugach region, had begun the initial stages of application for the programme but never completed it. Getting information from these two communities on barriers and facilitators to participating in the FDPIR programme would be essential to assessing feasibility for this programme in the region.

The key difference between the FDPIR programme and SNAP is that the FDPIR programme distributes a set amount of food regardless of local price due to it coming from national distribution centres. Conversely, the SNAP programme allows each participant a certain amount of funds each month to purchase approved items at approved retailers. The advantages to the

FDPIR programme are that participants may receive more food depending on how high the cost of food is in the community food stores and that the income eligibility limits are less restrictive than the SNAP programme. However, the SNAP programme has the benefit of being used in many retail stores and community food stores across the region, with the exception of the Chenega and Tatitlek communities where there are no participating stores. Another key difference is the approach each programme has to providing culturally significant food: SNAP currently allows funds to be used to purchase subsistence supplies/items, while FDPIR is currently looking to including more culturally appropriate foods dependent on region.

One of the disadvantages of the FDPIR programme is that participating communities are required to have trained staff and a location to store food and track orders for participants. Another possible limitation to using this programme would be the limited shipping and delivery options to the communities. The FDPIR programme could be implemented on a per community basis or perhaps it would be possible to use Chugachmiut or another organisation’s structure to implement a region-wide programme to decrease staff requirements and workloads for each community. In some instances, divisions or behavioural health programmes have been involved in running the FDPIR programme in other communities [27]. It is also notable that the FDPIR programme in Alaska is in part organised and managed regionally by ANTHC and reaching out to them for more details would be a good first step.

Food resources

Question 5A (focused on food frequency) indicated resource-specific focus areas for educational purposes or future classes. For example, if one of the lesser used food sources, such as ducks, have a high population count in the area, then a class on hunting and processing/preparing them may be popular. The results of this question also align with other findings in the questionnaire such as that garden vegetables were not very popular and gardens were not seen as a very important food resource, though still desired by participants.

Fish and seal were the most harvested foods in answers to Question 5D (“What are three primary traditional foods harvested in your community?”) and thus may be the foods that most people already have knowledge about harvesting and preparing. This is the case in other areas of Alaska, as well. In Western Alaska, researchers found that up to 40% of energy in older adults’ diets came from fish, and that this number is decreasing among youth, possibly due to less interest

or desire to learn the skills needed to harvest and prepare traditional foods [28–30].

Most respondents to Question 5 L (“Of all the traditional food that you eat in a year, approximately how much do you get from each source”) and their families provided their own traditional foods. This has also been found across the state, including research showing that 66% of Alaska Native women enrolled in the Women, Infant and Children (WIC) assistance programme received traditional foods from family or friends [31]. Another study noted a similar rate of traditional food harvesting/hunting between genders, but noted that men were more likely to hunt and fish while women were more likely to gather greens and pick berries [32]. This indicates a tendency to share foods and share responsibilities for gathering traditional foods between family members.

The main barrier and limiting factor reported in question 5N (“Is there anything limiting you from accessing traditional foods?”) was fuel cost, followed by transportation and time. This follows the traditional statistics of food security being tied to income and access to transportation, even if for different reasons than are typical in an urban setting [33]. Fuel costs have been shown to be linked to the numbers of trips and distance of trips that rural Alaskans take for subsistence activities in a negative manner [34]. Conversely, knowledge and skill were seen as less significant barriers.

Question 5O (“Is your family able to eat as much traditional foods as they would like?”) relates directly to food sovereignty and revealed that less than half of respondents were able to get as much traditional foods as they would like. Better access to traditional foods is needed based on desire and to assist in improving the health of communities. Access was found as a limiting factor to food sovereignty in the recent Arctic Report Card 2021 publication [35].

There are several recommendations made for the communities based on this section. The food resources table offers a look at what is consumed and harvested most in each community. It is recommended that these data be compared with data sources that provide population counts on animals and sea life in the area, which will help identify if any potential food resources are not being used effectively or sustainably. This could help increase food sovereignty and perhaps alleviate some of the economic pressure caused by the high cost of purchasing food.

Furthermore, information on food usage and frequency could be used to determine topics for food preparation/traditional knowledge classes in the future. For example, it may be more beneficial to have a class on preparing or preserving fish than to have a class on preparing beaver

meat. This would also be paired well with any data on population counts of harvestable animals in the region.

The ANTHC Alaska Plants as Food and Medicine symposiums may be another option to help bring more discussion to sustainable and ethical harvesting in the region. These regional symposiums promote traditional plant knowledge, ethical harvesting, and traditional methods of gathering and growing food. Continuing to host these symposiums in the region or advertising the symposiums that happen in other regions for people to attend by travelling or virtually could help communities continue to benefit from this resource. Additionally, the ANTHC facilitates the Store Outside Your Door wellness and prevention initiative to promote knowledge and use of traditional foods and traditional ways. Each YouTube webisode highlights traditional foods from around the state, walking viewers through harvest to preparation. This could be a valuable resource in the Chugach region and may especially appeal to youth due to the web-based method of delivery.

Another key takeaway from this section is that fuel and transportation were the most cited barriers to obtaining traditional foods. Communities could consider ways to help with those costs directly, such as through grants or other community resources. One avenue to explore is the Alaska Department of Commerce, Community, and Economic Development revolving loan fund that helps communities of 2,000 or fewer people buy bulk fuel. Another example that could be emulated is a tribal sponsored boat and programme, similar to one in Cordova that provides subsistence foods to elder tribal members.

Conclusion

The 2017 CRRC food assessment questionnaire in the Chugach region revealed important factors related to traditional food security and food sovereignty. These factors include the difficulty of acquiring nutritious foods in rural Alaska communities and that traditional foods should be consumed as a sustainable food source. Many respondents in the region were not aware of all the assistance programmes available, although they thought the most important assistance would be with fuel and transportation. Due to the many barriers noted, less than half of the respondents felt they could harvest as much traditional food as they wanted. Overall, most were worried about accessible and renewable traditional food sources.

Strengths and limitations

One limitation of the study was the number of questions asked. The length of the questionnaire may

have contributed to survey fatigue, causing some questions towards the end to receive relatively brief answers and fewer responses, thus impacting the integrity of the results. Another limitation is that the questionnaire was administered pre-COVID and it is possible that the pandemic may have created new challenges and concerns that are not included in the current data. More focused surveys could determine consistency or a change in circumstances and/or viewpoints. Finally, it is important to acknowledge that the results reported in this analysis are limited in their generalisability to other Indigenous peoples. While there can be many similarities between traditional foodways, cultures, and knowledge of Indigenous peoples, there are also substantial differences. Even within the state of Alaska, the variation among Indigenous groups is considerable. As such, it is recommended that Indigenous organisations or research groups investigating traditional food security and food sovereignty in other regions not generalise these findings but rather use them as a reference and a starting point for their own work in much the same way that the current analysis adopted and made cultural modifications to the First Nations Development Institute's Food Sovereignty Assessment Tool.

The primary strength of the project was that it was initiated, designed, and implemented with the guidance of key tribal members on the board of directors of the CRRC. Similarly, it was strengthened by the fact that the data and results were analysed by an individual with intimate knowledge on the subject both from their personal identification as a tribal member and experiences working within the tribal health system. Another strength was that the questionnaire was modified by the CRRC to be more culturally relevant to the region. Cultural relevance is important as it allows respondents to answer the questions accurately and communicates to the respondents that the surveyors understand and respect cultural differences that may influence the subject matter. A final strength was that the questionnaire was organised into sections that fit previously established models of food sovereignty in Alaska, which allowed for comparison of the results to those of other regions.

Disclosure statement

No potential conflict of interest was reported by the author(s).

ORCID

Amanda Walch  <http://orcid.org/0000-0001-9065-278X>

References

- [1] Chugach Natives, Inc. The chugach story; n.d. Available from: https://chugachheritageak.org/resource-files/The_Chugach_Story.pdf
- [2] U.S. Census Bureau. Quick facts Alaska; 2024. Available from: <https://www.census.gov/quickfacts/fact/table/AK/PST045223>
- [3] Goldhar C, Ford JD, Berrang-Ford L. Prevalence of food insecurity in a Greenlandic community and the importance of social, economic and environmental stressors. *Int J Circumpolar Health*. 2010;69(3):285–303. doi: 10.3402/ijch.v69i3.17616
- [4] Hossain K, Raheem D, Cormier S. Food security and the Arctic-barents communities. In: Food security governance in the Arctic-Barents region. Spring, Cham; 2018. doi: 10.1007/978-3-319-75756-8_5
- [5] Inuit Circumpolar Council Food. Food security across the Arctic: background paper of the steering committee of the circumpolar inuit health strategy. Inuit Circumpolar Council Canada. 2012:1–12. https://www.inuitcircumpolar.com/wp-content/uploads/2019/01/icc_food_security_across_the_arctic_may_2012.pdf
- [6] Loring PA, Gerlach SC. Food, culture, and human health in Alaska: an integrative health approach to food security. *Environ Sci Policy*. 2009;12(4):466–478. doi: 10.1016/j.envsci.2008.10.006
- [7] Muller-Wille L, Granberg L, Helander M, et al. Community viability and well-being in northernmost Europe: social change and cultural encounters, sustainable development and food security in Finland's North. *Int J Bus Glob*. 2008;2(4):331–353. doi: 10.1504/IJBG.2008.018300
- [8] Skinner K, Hanning RM, Desjardins E, et al. Giving voice to food insecurity in a remote indigenous community in subarctic Ontario, Canada: traditional ways, ways to cope, ways forward. *BMC Public Health*. 2013;13(1). doi: 10.1186/1471-2458-13-427
- [9] Tsuji LJS, Wilton M, Spiegelhaar NF, et al. Enhancing food security in subarctic Canada in the context of climate change: the harmonization of indigenous harvesting pursuits and agroforestry activities to form a sustainable import-substitution strategy. In: Sarkar A, Sensarma S van Loon G, editors. Sustainable solutions for food security. Spring, Cham; 2019. doi: 10.1007/978-3-319-77878-5_20
- [10] Food and Agriculture Organization of the United Nations. Voluntary guidelines to support the progressive realization of the right to adequate food in the context of national food security. Rome: author; 2005.
- [11] Gurney RM, Caniglia BS, Mix TL, et al. Native American food security and traditional foods: a review of the literature. *Sociol Compass*. 2015;9(8):681–693. doi: 10.1111/soc4.12284
- [12] Hayes-Conroy A, editor. Doing nutrition differently: critical approaches to diet and dietary intervention. Oxfordshire (UK): Routledge; 2016.
- [13] Inuit Circumpolar Council-Alaska. Alaskan inuit food security conceptual framework: How to assess the Arctic from an inuit perspective. 2015. Available from: <https://iccalaska.org/wp-icc/wp-content/uploads/2016/03/Food-Security-Summary-and-Recommendations-Report.pdf>

- [14] Walch A, Bersamin A, Loring P, et al. A scoping review of traditional food security in Alaska. *Int J Circumpolar Health*. 2018;77(1):1419678. doi: [10.1080/22423982.2017.1419678](https://doi.org/10.1080/22423982.2017.1419678)
- [15] Power EM. Conceptualizing food security for aboriginal people in Canada. *Can J Public Health*. 2008;99(2):95–97. doi: [10.1007/BF03405452](https://doi.org/10.1007/BF03405452)
- [16] Sampson D, Cely-Santos M, Gemmill-Herren B, et al. Food sovereignty and rights-based approaches strengthen food security and nutrition across the globe: a systematic review. *Front Sustain Food Syst*. 2021;5:686492. doi: [10.3389/fsufs.2021.686492](https://doi.org/10.3389/fsufs.2021.686492)
- [17] Food Research & Action Center. Rural hunger in America: get the facts; 2018. Available from: <https://frac.org/wp-content/uploads/rural-hunger-in-america-get-the-facts.pdf>
- [18] U.S. Food Sovereignty Alliance. Food sovereignty; 2024. Available from: <https://usfoodsovereigntyalliance.org/what-is-food-sovereignty/>
- [19] Desmarais AA. La vía campesina. *The Wiley-Blackwell Encyclopedia of Globalization*; 2012.
- [20] Steffen A, Greenlaw SA, Biermann M, et al. Alaska's climate change policy development. Fairbanks: Center for Arctic Policy Studies; 2021. Available from: <https://www.uaf.edu/caps/our-work/CAPS-alaskas-climate-policy-development-report-29April2021.pdf>
- [21] First Nations Development Institute. Food sovereignty assessment tool. 2015. Available from: <https://www.firstnations.org/publications/food-sovereignty-assessment-tool-2nd-edition/>
- [22] Nyholm JJ. Analysis of a food assessment survey for food security and food sovereignty of the chugach region. 2022. Available from: <http://hdl.handle.net/11122/12962>
- [23] Walch AK, Ohle KA, Koller KR, et al. Impact of assistance programs on indigenous ways of life in 12 rural remote Western Alaska native communities: elder perspectives shared in formative work for the “got neqpiaq?” project. *Int J Circumpolar Health*. 2022;81(1):2024679. doi: [10.1080/22423982.2021.2024679](https://doi.org/10.1080/22423982.2021.2024679)
- [24] Feeding America. Map the meal gap; 2020. Available from: <https://map.feedingamerica.org/county/2020/overall/alaska>
- [25] Alaska Native Tribal Health Consortium. Second edition of traditional food guide supports modern health; 2015. Available from: <https://anthc.org/news/second-edition-of-traditional-food-guide-supports-modern-health/>
- [26] Johnson J, Kostick M. Securing food in a mixed economy: a preliminary assessment of supplemental nutrition assistance program and subsistence in rural Alaska. Alaska Public Media; 2017. Available from: <https://nativeamericagriculturefund.org/wp-content/uploads/2018/04/Reimagining-Hunger-Responses-in-Times-of-Crisis.pdf>
- [27] Pindus N, Levy D, Biess J, et al. Study of the food distribution program on Indian reservations (FDPIR). U.S. Dept of Agriculture, Food Nutrition Service; 2016. Available from: <https://fns-prod.azureedge.us/sites/default/files/ops/StudyofFDPIR.pdf>
- [28] Bersamin A, Izumi B, Nu J, et al. Strengthening adolescents' connection to their traditional food system improves diet quality in remote Alaska native communities: results from the neqa elicarvigmun pilot study. *Transl Behav Med*. 2019;9(5):952–961. doi: [10.1093/tbm/ibz087](https://doi.org/10.1093/tbm/ibz087)
- [29] Bersamin A, Zidenberg-Cherr S, Stern J, et al. Nutrient intakes are associated with adherence to a traditional diet among Yup'ik Eskimos living in remote Alaska native communities: the CANHR study. *Int J Circumpolar Health*. 2007;66(1):62–70. doi: [10.3402/ijch.v66i1.18228](https://doi.org/10.3402/ijch.v66i1.18228)
- [30] Gagnon T. A guide to serving local fish in school cafeterias. Alaska Department of Natural Resources; 2022. Available from: <http://dnr.alaska.gov/ag/FarmToSchool/FISH2SCHOOL.pdf>
- [31] Walch A, Loring P, Johnson R, et al. Traditional food practices, attitudes, and beliefs in urban Alaska native women receiving WIC assistance. *J Nutr Educ Behav*. 2019;51(3):318–325. doi: [10.1016/j.jneb.2018.09.003](https://doi.org/10.1016/j.jneb.2018.09.003)
- [32] Redwood D, Day G, Beans J, et al. Alaska native traditional food and harvesting activity patterns over 10 years of follow-up. *Curr Dev Nutr*. 2019;3(11):1–8. doi: [10.1093/cdn/nzz114](https://doi.org/10.1093/cdn/nzz114)
- [33] Transportation and Food Access. Centers for disease control and prevention; 2014. Available from: <https://www.cdc.gov/healthyplaces/healthtopics/healthyfood>
- [34] Brinkman T, Maracle K, Kelly J, et al. Impact of fuel costs on high-latitude subsistence activities. *Ecol Soc*. 2014;19(4):18–26. doi: [10.5751/ES-06861-190418](https://doi.org/10.5751/ES-06861-190418)
- [35] Johnson N, Erickson K, Ferguson D, et al. The impact of COVID-19 on food access for Alaska natives in 2020. NOAA Arctic Program. 2020. doi: [10.1259/23/5cb7-6h06](https://doi.org/10.1259/23/5cb7-6h06)