Survey of Local and Traditional Knowledge about Paralytic Shellfish Poisoning in Alaskan and Russian Aleut Communities

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EXECUTIVE SUMMARY

Purpose

The purpose of this study was to address the following questions by interviewing Alaskan and Russian harvesters.

- What traditional knowledge exists in the community regarding the safety of shellfish, toxins, and paralytic shellfish poisoning (PSP), and how is this knowledge transmitted?
- What indicators do people use to determine when to collect and consume shellfish?
- Have people observed and taken notice of PSP in recent history?

Research Methods

The survey instrument was developed by researchers and representatives from four Alaska Aleut communities participating in the project at a workshop in Anchorage in April 2007. Thirteen "high harvesting" residents were surveyed in Sand Point, Alaska, and 30 were surveyed in village of Nikolskoye in Russia. All surveys but one were administered by researchers in an interview format.

Results

Average Respondent Profile. The mean age of the respondents was 52 years old, and most respondents reported gathering shellfish since childhood.

Learning and Teaching about Shellfish. The vast majority of respondents (72%) were taught about shellfish by a family member. Several Russian respondents reported learning about shellfish from other children, but none of the Alaskan respondents reported learning about shellfish in this way. Of the respondents who have children, 79% reported teaching their children about shellfish. They reported teaching children where to find shellfish, how to tell if they are okay to eat, and how to prepare them. Many respondents indicated the earlier children learn, the better, with suggested ages ranging from 2 to 10 years old. In addition, several Alaskan respondents thought that it was important to share information about PSP and red tides with kids, while the Russian respondents indicated that it was important to teach kids which shellfish are safe and which are unsafe, even thought they did not explicitly mention PSP or red

tides. Some respondents (26%) reported hearing traditional or local stories or tales about shellfish but most (74%) did not. Most Alaskan stories concerned cases of PSP, while only a few Russian stories did. Many Russian respondents did not know anything about Red Tides or cases of PSP, according to interviewer notes.

Indicators of Shellfish Safety. Most of the Alaskan respondents indicated that winter was the best season for collecting shellfish, while most of the Russian respondents reported that they thought it was spring. The majority of respondents considered low tides and water temperature when deciding whether to collect shellfish, but not necessarily air temperature. Many respondents said children should avoid gathering shellfish when the weather is stormy or windy, because they can slip and fall or become ill with frostbite or hypothermia. Almost half the respondents (48%) said shellfish are different today than they were 20 years ago. Many of these respondents felt shellfish are now smaller, have become scarcer, and have accumulated more toxins. Respondents reported several indicators of shellfish safety, including time of collection, location of collection, smell, visual appearance (size, color), and whether or not it is alive. In addition, several respondents pointed to Red Tide warnings as a reason not to eat shellfish.

Shellfish Collection and Preparation Habits. Spit Beach was the most common place to collect shellfish among Alaskan respondents, while Gavanka Creek, Ladyginkoy Creek, and Kitovy Bay were most common among Russian respondents. On average, respondents indicated that not being able to gather shellfish any more would have a "somewhat big" impact on the community but the results also showed that on average, Alaskan and Russian respondents indicated eating "not much" shellfish. Alaskan respondents tended to prepare shellfish for their family on a weekly or monthly basis, while Russian respondents tended to do so much less frequently (i.e., yearly or never). Respondents overwhelmingly reported that eating traditional foods – often non-shellfish dishes – made them feel positive, with some reporting that it made them feel closer to their culture and traditions, and others simply saying it made them feel satisfied. When respondents were asked whether they eat more store bought food or traditional food, 80% said store bought, 12% said traditional, and 7% said both. Many respondents said the reason they eat more store bought food was because of its convenience and the unavailability of traditional food. Several respondents thought traditional foods were healthier and would prefer them were they more readily available.

PURPOSE

The purpose of this study was to address the following questions by interviewing Alaskan and Russian fishermen.

- What traditional knowledge exists in the community regarding the safety of shellfish, toxins, and paralytic shellfish poisoning (PSP), and how is this knowledge transmitted?
- What indicators do people use to determine when to collect and consume shellfish?
- Have people observed and taken notice of PSP in recent history?

RESEARCH METHODS

About the Survey

The survey used in this study was developed at a workshop in Anchorage, Alaska in April 2007. A PhD student from the University of Alaska Anchorage was hired as a research assistant and worked on the questionnaire design together with the project director. Four coordinators from the Alaskan villages of Akutan, St. George, King Cove, and Sand Point were invited to participate in the workshop. The coordinators participated in editing the questionnaire to make sure that the questions were relevant to their communities then practiced administering the survey during a training session. Coordinators first interviewed each other and then took turns interviewing an elder from Anchorage. The interviews were recorded and discussed with the coordinators. An interview manual was also developed at the workshop. All recommendations were incorporated in the final questionnaire, which was then translated into Russian. A test interview was conducted with a Russian respondent from Nikolskoye.

The final survey (shown in Appendix A) asked about the following topics:

- Respondent Demographics
- Learning and Teaching about Shellfish
    - *How Respondents Were Taught About Shellfish (Question 6)*

- *How and What Respondents Teach Their Children (Questions 2, 7, 8, 9)*
- *Traditional Stories and Tales Heard About Shellfish (Questions 10, 11)*

- Indicators of Shellfish Safety
  - *Shellfish Season (Questions 13, 20, 21)*
  - *Weather Conditions (Questions 14, 15, 16, 17, 19, 42, 43, 44, 46)*
  - *Perceptions of Shellfish Quality (Questions 26, 27, 28, 29)*
- Shellfish Collection and Preparation Habits
  - *Collecting Habits (Questions 41, 49, 51)*
  - *Favorite Shellfish and Traditional Foods (Questions 22, 23, 30, 31, 32, 39, 40)*
  - *Shellfish to Avoid (Questions 5, 24)*
  - *Shellfish Preparation (Questions 4, 33, 34, 35, 37, 38, 39)*

Participants and Survey Administration

Two communities were selected for the survey: Nikolskoye in Russia and Sand Point in Alaska. While the two communities differ economically, they also have some commonalities.

Sand Point (Qagun Tayagungin in Aleut) is a fishing community with approximately 950 residents, about half of whom are Aleut. Sand Point has one of the largest commercial fishing fleets in the Aleutian region. The first residents were Aleuts from nearby villages and Scandinavian fishermen. Sand Point can be accessed by either plane or boat. Traditional harvest includes fish, marine mammals, terrestrial mammals, invertebrates, birds and eggs, as well as edible plants. Several Aleut communities are located nearby, including King Cove, Nelson Lagon, False Pass, and Akutan.

Nikolskoye has a population of 800 people, 300 of whom are Aleut. Nikolskoye is the only Aleut settlement in Russia. Subsistence and small commercial fishing are important for local residents but many are also employed by the local government to provide services to the village. Nikolskoye can be accessed by boat or plane, but neither is reliable. Traditional harvest includes fish, salmon row (caviar), fir seal, birds and eggs, marine invertebrates, seaweed and mushrooms.

In Sand Point, Alaska, a Tribal Administrator helped recruit participants for the study. She compiled a list of "high harvesting" individuals who were available for an interview. The project director and local project coordinator scheduled appointments with people on the list. In Russia, the local project coordinator recruited participants for the study. The Alaskan respondents were all men but the Russian respondents were made up of men and women. Educational background varied among the respondents, with some having college degrees and others not.

In March 2008, the project director and local coordinator conducted 13 interviews in Sand Point, Alaska. Most of these interviews were conducted in Tribal Offices but a few elders were interviewed at home. In Russia, a local researcher who has lived in the village of Nikolskoye for approximately 15 years conducted the 30 Russian interviews. These interviews took place in the respondents' homes in the village of Nikolskoye, on Bering Island. All of the English and Russian surveys were administered in an interview format, except for one in Sand Point, where a respondent wanted to complete the questionnaire by himself.

All respondents were compensated for their participation. Alaskan respondents received a $20 gift certificate for gas, and Russia respondents received money.

Data Analysis

The survey included several different types of items such as yes/no questions, categorical scales, Likert-type ratings, and questions with open-ended quantitative and qualitative response options. Thus, various types of data analysis were conducted to summarize findings. Yes/no responses are reported as percentages of yes responses, no responses, and other responses (e.g., do not know). These data are often accompanied by pie charts embedded in the text. Categorical scales and Likert-type ratings are often reported in tables as means, with the minimum and maximum values shown for all respondents. In addition to being reported in the text, some of these results are also represented by bar graphs. For the open-ended qualitative questions, we report the prototypical responses or common themes that emerge from the answers

provided. When we observed important differences between the Alaskan and Russian responses, we noted these differences in the report.

RESULTS

Respondent Demographic Profile

Based on the year of birth, the average respondent was 52 years old (born in 1956). The youngest respondent was 25 years old and the oldest was 86 years old. The average length of time spent in the location where the interview took place was 43 years and ranged from 13 years to 81 years. The average length of time spent in the region - Western Alaska for Alaskan respondents and the Commander Islands for Russian respondents - was 50 years and ranged from 15 to 86 years. Many respondents reported having lived in their current location and in the broader region throughout their entire life. The average length of time gathering shellfish was 31 years and ranged from 7 to 61 years with most respondents reporting that they had gathered shellfish since childhood.

Learning and Teaching about Shellfish

The following section describes the transmission of cultural knowledge about shellfish.

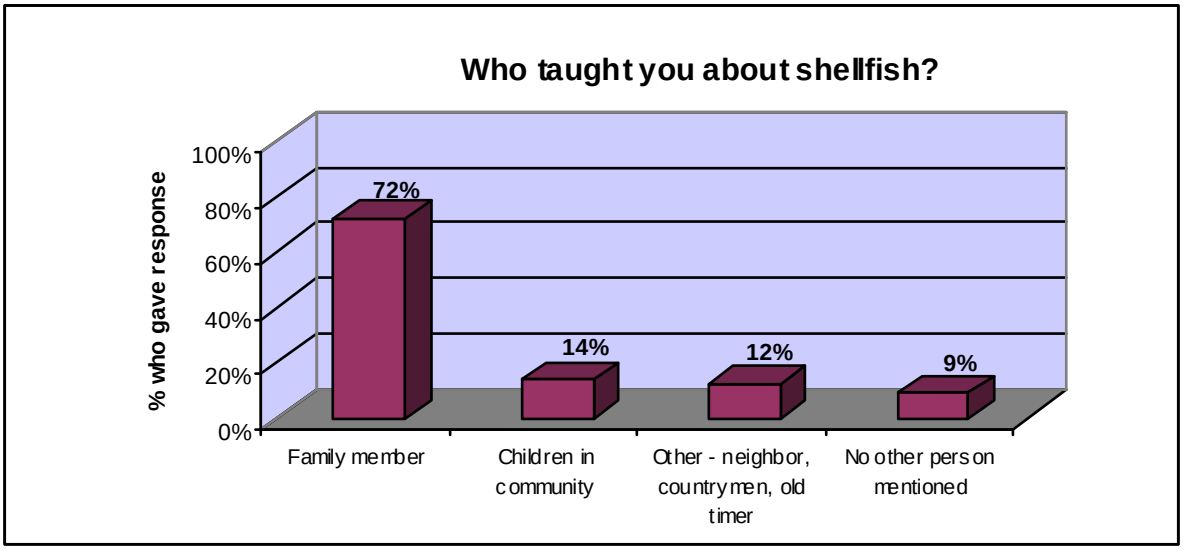
How Respondents Were Taught About Shellfish (Question 6)

As Figure 1 illustrates, when asked, "Who taught you about shellfish?" the majority (72%) of the 43 people who answered this question said they were taught about shellfish by a family member. Of the survey respondents who mentioned they were taught by family, slightly more than half (53%) were taught by a parent while others were taught by a grandparent (14%), an aunt or uncle (14%), and/or a sibling (6%).

Some (14%) of the 43 respondents learned from other children and a smaller proportion (12%) reported that they learned by some other means such as from older community members.

Although the Russian respondents reported learning about shellfish from other children none of the Alaskan respondents reported that they learned about shellfish in this way.

Figure 1. Who taught you about shellfish?



Some of the 31 respondents that reported learning about shellfish from a family member reported learning from multiple sources, for example, a parent and a grandparent. Most of the respondents learned about shellfish from firsthand experience by going to the coast and collecting them, often with family members. One respondent reported learning solely about the shellfish preparation process, but not about how to collect them. Several of the Alaskan respondents learned about shellfish at Sand Point and in King Cove, while most of the Russian respondents learned at Nikolskoye or Preobrazhenskiy, an Aleut village on the Medny (Copper) Islands that existed until middle of the 20th century when its population was consolidated in Nikolskoye.

How and What Respondents Teach Their Children (Questions 2, 7, 8, 9)

Ninety percent of respondents reported having children. Of those who reported having children, 79% reported teaching their children about shellfish. The vast majority (89%) reported that their children enjoyed clam digging but one respondent said his/her children did not enjoy this activity and two reported that their children have never dug for clams. Of the respondents that said their children enjoy clam digging, nearly half (48%) made a comment about the

shellfish being small, not alive, or hard to find. However, it should be noted that only the Russian respondents made these types of statements.

Qualitative comments indicate that most respondents think children should be taught about shellfish at an early age and the earlier children learn about shellfish, the better. When asked specifically at what age they should be taught, responses ranged from 2 to 10 years old. Some of the things that respondents reported teaching their kids were where to find shellfish, how to tell if they are okay to eat, and how to prepare them. Many respondents teach their kids by taking them along when they go to collect shellfish.

In addition, several Alaskan respondents thought that it was important to share information about PSP and red tides with kids. One respondent pointed out that although he/she wanted his/her child to understand that a tingling sensation when chewing on the shellfish indicates it is not good to eat, this person warned that people should not let kids do this type of testing, which is quite dangerous even though it is still practiced.

Even thought they did not explicitly mention PSP or red tides, several Russian respondents indicated that it was important to teach kids which shellfish are safe and which are unsafe with a few succinctly reporting that it was important to tell children when to gather, what to gather, and where to gather.

Traditional Stories and Tales Heard About Shellfish (Questions 10, 11)

When asked, "Have you heard any traditional stories/tales about shellfish?" approximately one quarter (26%) reported that they had but most (74%) said they had not. Qualitative findings show that most respondents had heard stories from family members while some learned from others in the community. Most of the Alaskan stories concerned cases of PSP, while only a few of the Russian stories did. Most Russian respondents did not know anything about Red Tides or cases of PSP, according to the interviewer notes. However, a couple of the Russian respondents mentioned PSP-related deaths occurring several decades ago. Two other Russian respondents also mentioned a news story about Red Tides from three or four years ago, suggesting a limited amount of local knowledge about the subject.

Almost all respondents (93%) indicated that they thought the Aleut people had always eaten shellfish, while only one did not (2%), and two people (5%) reported that they didn't know. When respondents said they thought Aleut people had always eaten shellfish, they were then asked, "What makes you think so?" Many respondents thought so because shellfish are a good, nutritious, source of food for communities living by the sea, while three of the 13 Alaskan respondents pointed to archaeological evidence.

Indicators of Shellfish Safety

The following section describes what kind of information respondents use to determine the safety of collecting and eating shellfish.

Shellfish Season (Questions 13, 20, 21)

The survey items on shellfish season ask open-ended qualitative questions about the best season and months to collect shellfish, when the season begins and ends, and what environmental differences (if any) are observed during the months when shellfish are gathered compared to the months when shellfish are not gathered.

Most of the Alaskan respondents indicated that winter was the best season for collecting shellfish, whereas most of the Russian respondents said that spring, was in fact, the best month. There was some variability in the length of the indicated shellfish season. A few Alaskan respondents included fall in the season, but those that mentioned actual months mentioned winter months, such as, "December and January" with a few reporting, "months with r." Several Russian respondents said that the season starts in the winter but ends in summer, and all respondents except for one felt that the season included spring. When asked about specific months, many of the Russian respondents mentioned the spring and summer months of, "March through May," and "May through June." Clearly, the Alaskan and Russian respondents think of the shellfish season differently.

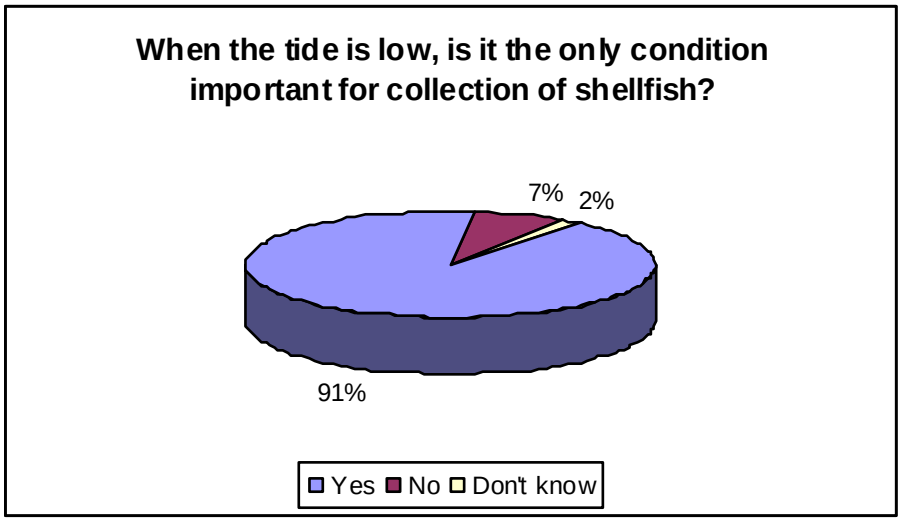
Respondents were also asked whether they would ask kids to collect shellfish in the current month. Alaskan respondents, for whom the month in question was March, mostly said

that they would (80%). Almost all of the Russian respondents, who were administered the survey in the winter months, from late November to early February, said that they would not (97%).

Weather Conditions (Questions 14, 15, 16, 17, 19, 42, 43, 44, 46)

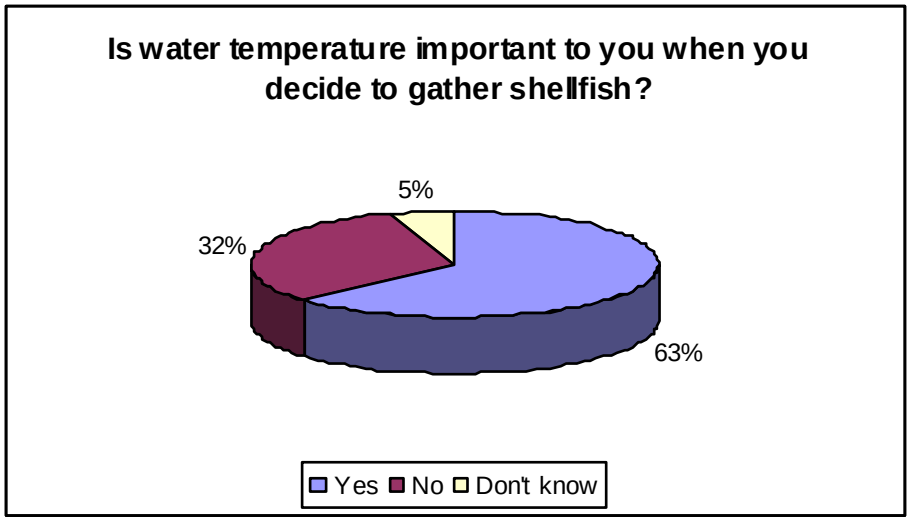
As shown in Figure 2, when respondents were asked if a low tide is the only important condition for collection of shellfish, 91% said yes, 7% said no, and 2% did not know.

Figure 2. When the tide is low, is it the only condition important for collection of shellfish?



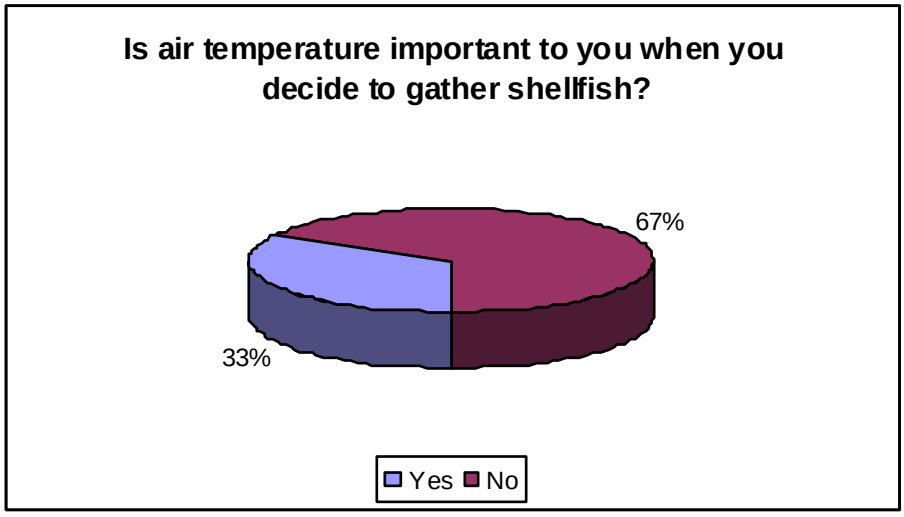
However, when respondents were asked if water temperature is an important consideration for collection of shellfish, 63% said yes, 32% said no, and 5% did not know. (See Figure 3.)

Figure 3. Is water temperature important to you when you decide to gather shellfish?



Respondents were also asked if air temperature is an important consideration for collection of shellfish. As Figure 4 shows, 33% said yes and 67% said no. Thus, there is a high degree of inconsistency in the responses to these questions, as many of the respondents who reported that low tides were the only important condition went on to say that water temperature and air temperature were also important things to consider.

Figure 4. Is air temperature important to you when you decide to gather shellfish?



Respondents were also asked to indicate ideal, "cool", and "warm" temperature ranges for water and air. Most of the Alaskan respondents answered these questions but almost none of the Russian respondents gave an answer. In other words, the data show that nearly all of the Russian respondents gave "no response" to items asking their opinion on what they consider a "cool," "warm," or ideal temperatures for air and water when gathering shellfish.

Among the few respondents that provided an ideal water temperature range, the overall range was 30˚ F to 45˚ F. "Cool" water temperatures ranged from 32˚ F to 40˚ F, and most respondents considered water temperatures above 40˚ F as "warm". Several respondents indicated that the air temperature should be cold but not freezing. "Cool" air temperatures varied greatly from 30˚ F or below to above 50˚ F. "Warm" air temperatures also varied greatly from 30˚ F to 65˚ F.

Respondents were asked what the weather should be like when gathering clams and mussels and were provided with the following response options: clear and calm, clear with wind, cloudy and calm, cloudy with wind, raining, snowing, and other. Many respondents chose multiple options, and many indicated that there should *not* be strong winds. Table 1 lists the frequency of each response category:

Table 1. Ideal weather conditions for gathering clams and mussels

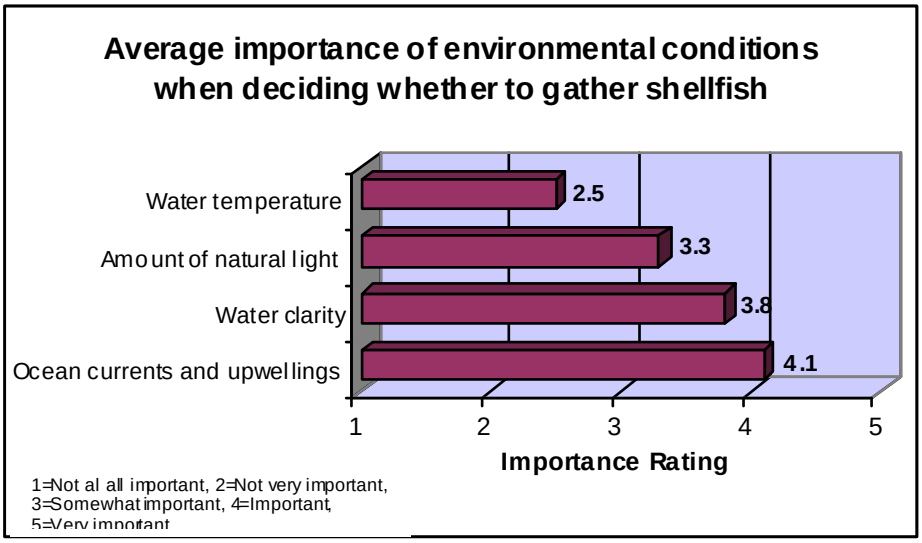
Weather conditions	Percent of respondents providing this response
Clear and calm	85%
Cloudy and calm	79%
Clear with wind	62%
Cloudy with wind	31%
Raining	21%
Snowing	18%

Respondents were also asked an open-ended qualitative question about when children should avoid gathering shellfish. Common responses were that children should not gather

shellfish when the weather is stormy or windy, because children can slip and fall or become ill from, for example, frostbite or hypothermia.

Respondents were asked to rate the importance of water temperature (question 42), water clarity (question 43), ocean currents and upwellings (question 44), and the amount of natural light (question 46) to their decision to gather shellfish. Respondents used a 5-point scale with the following response options: 1=Not at all important, 2=Not very important, 3=Somewhat important, 4=Important, and 5=Very Important. The mean response for each condition is displayed in Figure 5. This figure shows that water temperature is the least important with an average rating among respondents of 2.5 (between "not very important" and "somewhat important") and ocean currents and upwellings is the most important with an average rating of 4.1, indicating that overall, or on average, respondents rated this environmental condition as "important" when deciding whether to gather shellfish.

Figure 5. Average importance of environmental conditions



Perceptions of Shellfish Quality (Questions 26, 27, 28, 29)

Question 26 asks respondents if shellfish are different today than they were 20 years ago. Responses to this question were quite mixed with 48% saying yes, 38% saying no, and 15% indicating they did not know. Among Alaskan respondents, 73% said yes, 18% said no, and 9% said they did not know (see Figure 6A). Among Russian respondents, 56% said yes, 17% said

no, and 27% said they did not know (see Figure 6B). Thus, Alaskan respondents were more likely to indicate a change in shellfish quality over the past 20 years. Among all respondents, those that said, "yes" were then asked how shellfish were different. Many felt shellfish are now smaller, some felt they are now also scarcer, and a few felt that they have accumulated more toxins. Respondents were also asked to indicate, in question 27, how clams are different today from when they were a child. Many indicated that clams are now smaller. However, some respondents said they are bigger and still others responded that they were the same.

Figure 6A. Are shellfish different today than 20 years ago? (Alaskan Respondents)

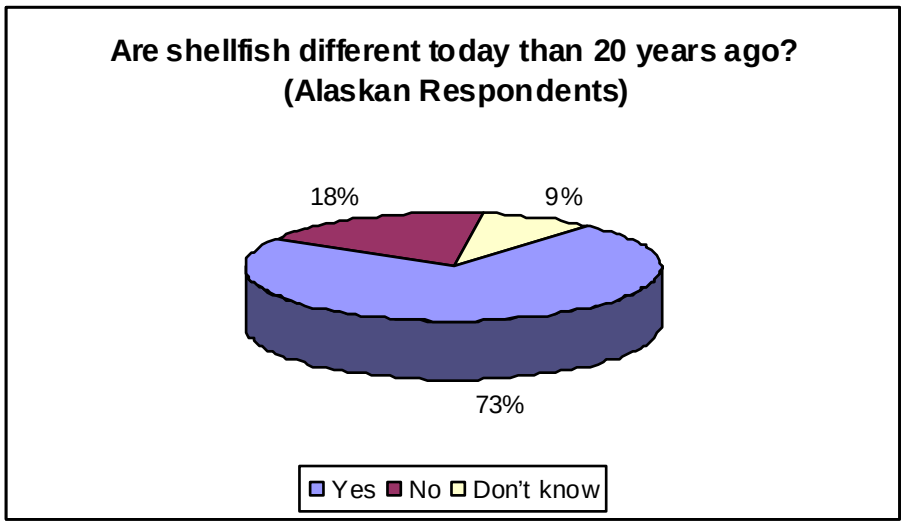
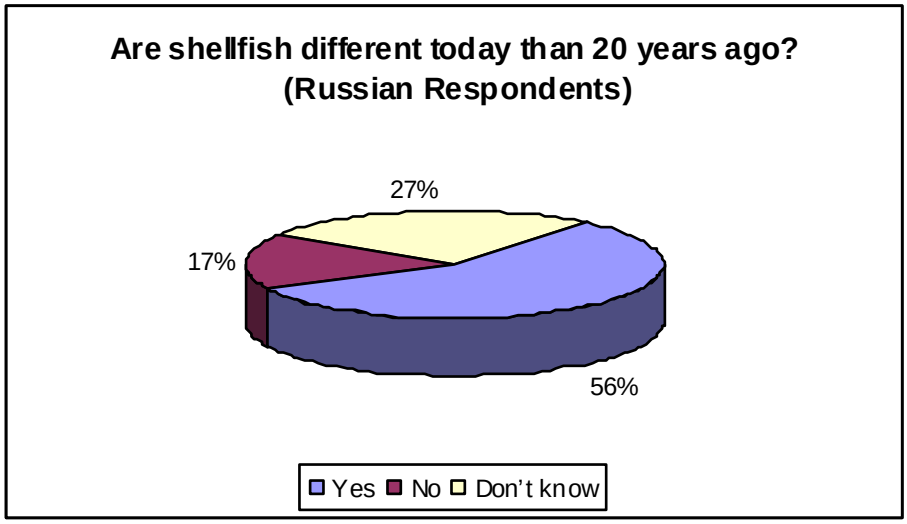


Figure 6B. Are shellfish different today than 20 years ago? (Russian Respondents)



Respondents were also asked to list the three most important things to remember when deciding if a clam *is not* good to eat (question 28) and the three main qualities that indicate that a clam *is* good to eat. Respondents reported several indicators of shellfish safety, including time of collection, location of collection, its smell and visual appearance (size, color), and whether or not it is alive. In addition, several respondents pointed to Red Tide warnings as a reason not to eat shellfish.

Shellfish Collection and Preparation Habits

The following section describes where respondents go to collect shellfish, their favorite dishes, which shellfish respondents avoid, and common methods of preparing shellfish.

Collecting Habits (Questions 41, 49, 51)

Question 49 asks respondents which beach they go to for collecting shellfish. Among Alaskan respondents, Spit Beach was the most common response while Gavanka Creek, Ladyginkoy Creek, and Kitovy Bay were the most common responses from the Russian respondents. When asked which shellfish they thought they would find if they went out today and where to look for them, several respondents thought they would find butter clams, and a few mentioned cockle shells, and mussels. Alaskan respondents who disclosed a location mainly pointed to Spit Beach, while Russian respondents mainly said they would look near their settlement or at Kitovy Bay.

Respondents were also asked, "If your community were not able to gather shellfish any more for some reason, how big an impact do you think that would have on the community?" Respondents rated the potential impact using the following 5-point scale: 1=None, 2=Not much, 3=Somewhat big, 4=Pretty big, and 5=Very big. The mean (average) response was 2.95 (Somewhat big), and responses ranged from None (i.e., no impact) to Very Big (i.e., a very large impact). When broken out by type of respondent, the average impact was slightly greater among Alaskan residents (3.23) than among Russian residents (2.83). However both of the averages generally represent a response of "Somewhat big" for the two groups.

Favorite Shellfish and Traditional Foods (Questions 22, 23, 30, 31, 32, 39, 40)

Respondents were asked to rate how much shellfish they eat compared to other food that they eat on a 5-point scale with the following response options: 1=None, 2=Not much, 3=Some, 4=Quite a bit, and 5=A lot. The mean response for all respondents was 2.0, or "Not much." The mean response was slightly greater among Alaskan respondents (2.23) than among Russian respondents (1.9), but the average amount of shellfish each group eats compared to other foods is still considered to be "Not much."

In response to a fill-in-the-blank question (question 22) that read, "My favorite shellfish are…..," respondents reported a variety of favorite shellfish, of which clams, mussels, and chimigi were especially popular. Respondents were also asked (question 23) to specify which species of shellfish they would always let their family eat and why. Again, clams, mussels, and chimigi were repeated, but there were many other responses as well. In terms of why they would always let their family eat a particular shellfish species, individuals often reasoned that they have always eaten these species and/or know them to be safe.

Question 32 asked respondents to report the best traditional foods that come to mind. While many respondents associated fish, seal, and other non-shellfish dishes with traditional foods, a few respondents mentioned shellfish in their answer. Question 30 asked respondents to complete the sentence, "When I eat our traditional food it makes me feel…." Responses to this question were overwhelmingly positive, with some people reporting that it made them feel closer to their culture and traditions, and others simply saying it made them feel satisfied. Many respondents also indicated that people say a person who eats a lot of shellfish will be happy and healthy.

Shellfish to Avoid (Questions 5, 24)

One of the qualitative questions (question 24) asked respondents which species of shellfish they would *not* let their family eat and why. Some of the Alaskan respondents said they would not let their family eat mussels due to safety concerns, but the data show none of the Russian respondents listed any species of shellfish to avoid, suggesting that they would let their

family eat any type of shellfish. When asked if they know anyone who still eats mussels, 81% of all respondents said yes, and 19% said no.

Shellfish Preparation (Questions 4, 33, 34, 35, 37, 38, 39)

One of the early survey questions (question 4) asked respondents how they prepare their clams. A variety of methods were mentioned, including frying, steaming, baking, chowder, stewing and eating them raw. Many Russian respondents reported cooking clams and baking them in an oven or on an open fire, while Alaskan respondents were more likely to fry them or make chowder. Differences between Russian and Alaskan responses also conveyed the complexity of the dishes (or cuisine) for the Russian residents. In discussing their preparation methods, for example, they used local words that described specific ingredients, such as "glazki" (meaning "little eyes"). Finally, in their responses to question 4, none of the respondents mentioned that the way they prepared their clams was intended to eliminate toxins.

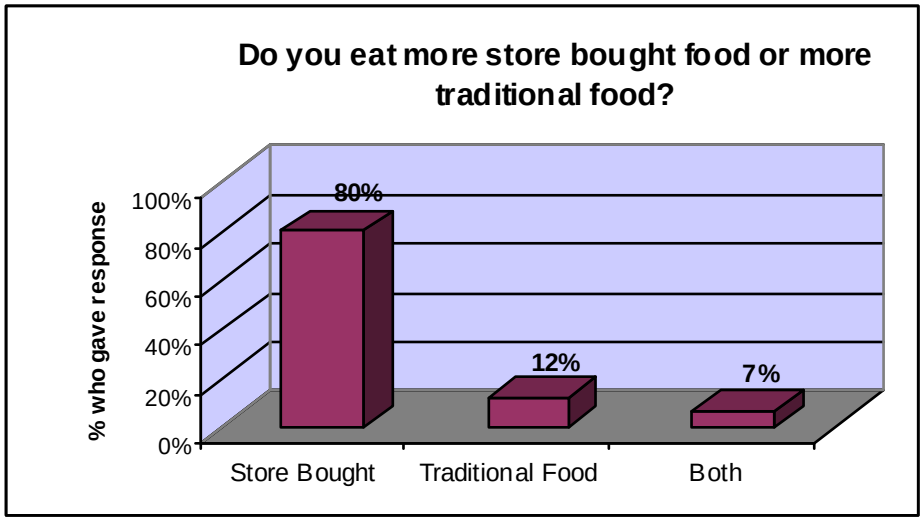
A series of questions that asked about storing and eating shellfish revealed only 12% of respondents reported having shellfish in their freezer at the time of the interview, while the other 88% said they did not. None of the Russian respondents reported having shellfish in their freezer. Thus, the overwhelming majority (88%) of respondents reported using only fresh shellfish. Respondents were also asked how often they prepare shellfish for their family (question 35). Alaskan respondents tend to prepare shellfish for their family on a weekly or monthly basis, while Russian respondents do so less often, reporting yearly or never.

The majority of Alaskan respondents (92%) reported getting shellfish from other areas. King Cove was the most common area from which they reported getting shellfish. Almost half (46%) of the Alaskan respondents reported sending shellfish to other areas, and most of those who did, said they sent it to Anchorage. None of the Russian respondents reported sending shellfish to other areas, which makes sense since Nikolskoye is an isolated community with poor transportation.

As Figure 7 shows, when respondents were asked whether they eat more store bought food or traditional food, 80% said store bought, 12% said traditional, and 7% said both. Alaskan

respondents were less likely to eat store bought food than Russian respondents (64% vs. 87%) and more likely to eat traditional food (36% vs. 3%). Qualitative responses to question 39 showed common reasons for eating more store bought food included convenience and the fact that there is not a sufficient amount of traditional food available. Several respondents thought traditional foods were healthier and would prefer them were they more readily available. The most common reason given for eating more traditional food was its affordability.

Figure 7. Do you eat more store bought food or more traditional food?



APPENDIX A

PSP SURVEY

INTERVIEW #_____

1. What is your favorite dish that you prepare from seafood?

2. Do your kids enjoy clam digging? –
Yes No

3. Last time you were out digging clams, how many buckets did you get?

4. How do you prepare your clams? –

5. Do you know of anyone who still eats mussels?

Yes No

6. Who taught you about shellfish?

- How were you taught?

- Where did you first learn about this?

7. Do you have kids?

Yes No

If your answer is “Yes”:

8. Have you taught kids about shellfish?

Yes No

If your answer is “Yes”:

- How do you teach kids about shellfish?

- What do you teach kids about shellfish?

- At what age do you think it would be good to begin teaching about shellfish?

9. What information do you think would be important to share with kids learning about shellfish?

10. Have you heard any traditional stories/tales about shellfish?

Yes No

If your answer is "Yes":

- Who did you hear it from?

- What is it called?

- Could you please tell me the story?

11. Do you think Aleut people have always eaten shellfish?

Yes No Don't know/Not sure

- What makes you think so?

12. Would today be a good day to dig clams/collect shellfish?

Yes No Don't know/Not sure

- Why is that?

13. Complete the sentence:

The best season to collect shellfish is ……

……...

- When does this season begin and end?

14. When the tide is low, is it the only condition important for collection of shellfish?

Yes No Don't know/Not sure

15. Is water temperature important to you when you decide to gather shellfish?

Yes No Don't know/Not sure

If your answer is "Yes":

- What should the water temperature be?

- What water temperature range do you consider to be a "cool" temperature?

- What water temperature range do you consider to be "warm"?

16. Is air temperature important to you when you decide to gather shellfish?

Yes No Don't know

If your answer is "Yes":

- What should the air temperature be?

- What air temperature range do you consider to be a “cool” temperature?

- What air temperature range is “warm”?

17. What should the weather be like when you gather clams, mussels?

Clear and calm *Clear with wind*

Cloudy and calm *Cloudy with wind*

Raining *Snowing*

Other

18. Do you think that many people are gathering shellfish today?

Yes No Don’t know/Not sure

- Why do you think so?

19. Fill the blanks:

I don't think that kids should be gathering shellfish when

the weather is……..……..

because they can……

20. Circle your answer:

In a month like this I would ask /would **not** ask kids to collect shellfish.

21. What are the months that you collect shellfish? (Name months.)

- Do you notice anything different in the environment in the months when you gather shellfish than in the months that you do not?

Yes No Don't know/Not sure

If "Yes"

- What is different?

- Do you notice anything different in the quality/condition of the shellfish in the months when you gather shellfish than in the months that you do not?

Yes No Don't know/Not sure

If "Yes"

- What is different?

22. Finish the sentence:

My favorite shellfish are …….

…….

……..

23. Fill the blanks:

I would always let my family eat (name species) …….

……..

because …….

……..

24. Fill the blanks:

I would not let my family eat (name species) ……..

……..

because ……..

……...

25. Finish the sentence:

When shellfish are …….

I would not eat them because……..

……..

26. Are shellfish different today than 20 years ago?

Yes No Don't know/Not sure

- If yes, how is it different?

27. Fill the blanks:

Nowadays, the clams are ……

……

than they were when I was a child.

28. The three most important things to remember when deciding if a clam is **not** good are:

1.)…….

2.) ……

3.) ……

29. What are the three main qualities that would tell you that the clam **is** good to eat?

1.

2.

3.

30. Complete the sentence:

When I eat our traditional food it makes me feel ……...

……...

31. Complete the sentence:

People say that a person who eats a lot of shellfish will or

is……

……...

32. What is the best traditional food that comes to mind first?

- And what is the next best traditional food?

33. Do you have shellfish in your freezer?

Yes No Don't know/Not sure

34. Do you use only fresh shellfish?

Yes No Don't know/Not sure

35. How often do you prepare shellfish for your family?

Yearly Monthly Weekly Daily Not at all

36. When did you serve shellfish to your family last time?

- And prior to that?

37. Do you get shellfish from other communities/areas?

Yes No Don't know/Not sure

If your answer is “Yes”:

- Which communities/areas?

38. Do you send shellfish from here to other places?

Yes No Don’t know/Not sure

If your answer is “Yes”:

- Where?

39. Do you eat more store bought food or more traditional food?

More traditional food *More store food*

- Why?

40. Compared to other food that you eat, how much shellfish do you eat?

A lot Quite a bit Some Not much None

41. If your community were not able to gather shellfish any more for some reason, how big an impact do you think that would have on the community?

Very big Pretty big Somewhat big Not much None

42. How important is water temperature to your decision to gather shellfish?

Very Important Important Somewhat important Not very important Not at all important

43. How important is water clarity to your decision to gather shellfish?

Very Important Important Somewhat important Not very important Not at all important

44. How important are ocean currents and upwellings to your decision to gather shellfish?

Very Important Important Somewhat important Not very important Not at all important

45. Are there some kinds of shellfish that you would not eat?

Yes No Don't know/Not sure

- Why would you avoid these shellfish?

46. How important is the amount of natural light to your decision to gather shellfish?

Very Important Important Somewhat important Not very important Not at all important

Please answer the questions bellow using these pictures of shellfish.

47. Which of these do you usually eat?

48. For each shellfish that you showed me, when are conditions right for collecting it?

49. What beach do you go to collect it?

50. Do you know any names either in Native language or any other well-known names in the community of these shellfish?

Yes No Don't know/Not sure

- What are these names? (Please coordinate with number on photographs.)

51. If you were to go out today which shellfish do you think you could find and where would you look for them?

Would you like to be acknowledged by name in the final project reports for your contribution to this survey?

Would you please tell me about yourself?

What year were you born?_____

How long have you lived here?_____

How long have you lived in western Alaska?_____

How many years have you been gathering shellfish?_____