

RARE Project Tribal Seafood Consumption Survey Software



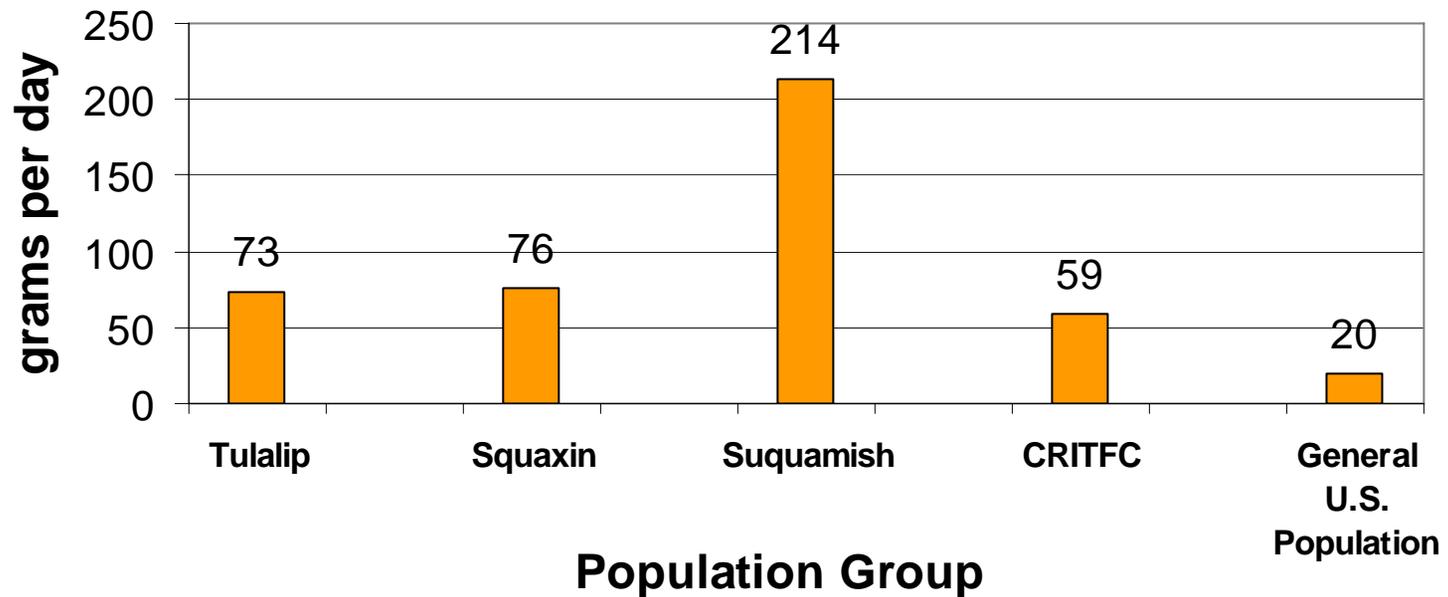
Anna Towksjhea, Quinault Indian Nation
Samuel Iwenofu, Quinault Indian Nation
Lon Kissinger, EPA Region 10
Ann H. Williams, NHEERL/HSD/EBB

Why do we need more fish consumption data?

- Support health and regulatory needs.
- Evaluate differences among Tribal groups.
- Examine differences in cultural and environmental factors influencing consumption among Tribal groups.
- Examine relationships between body weight, gender, income, and age on consumption.
- Comparison of consumption rates among Tribal groups.

Fish consumption data

**Average Tribal and General U.S. Population
Seafood Consumption Rates**



Fish consumption values recommended in EPA documents

Source	Target Population	Default Consumption Rate (grams/day)	Statistic of Dispersion	Based on	Comments
1989 Exposure Factors Handbook	recreational fishers	30	median	Pierce <i>et al.</i> (1981) Puffer <i>et al.</i> (1982)	averaged results from two studies
		140	90 th %		
1989 Risk Assessment Guidance for Superfund Vol. I, Part A (RAGS)	finfish consumers (residential exposure)	38 (averaged over 3 days)	median	Pao <i>et al.</i> (1982) (1977-78 USDA NFCS)	recommended ingestion rates: 0.113 kg/meal (50 th %) 0.284 kg/meal (95 th %) 6.5 g/day (ave'd over one year)
		132	95 th %		
1991 RAGS Supplemental Guidance	recreational fishers	54 (2 meals/week)	mean	Pao <i>et al.</i> (1982) (1977-78 USDA NFCS)	assumed 8 oz. per meal
	subsistence fishers	132 (4 meals/week)	95 th %		
1997 Exposure Factors Handbook	recreational fishers: Marine (Pacific coast)	2.0 6.8	mean 95 th %	NMFS ^{***}	
	Freshwater ²²	5; 5; 12; 17 13; 18; 39	mean 95 th or 96 th %	4 studies ²²	ME; NY; MI; MI ME; NY; MI
U.S. EPA, 2000a (fish advisory guidance, Volume I, 3 rd edition)	recreational use	17.5	90 th %	1994-96 CSFII ^{***}	also in U.S. EPA, 2000c (Methodology for Ambient Water Quality/Human Health)
	subsistence use	142.4	99 th %		

Fish consumption surveys in the Pacific North West

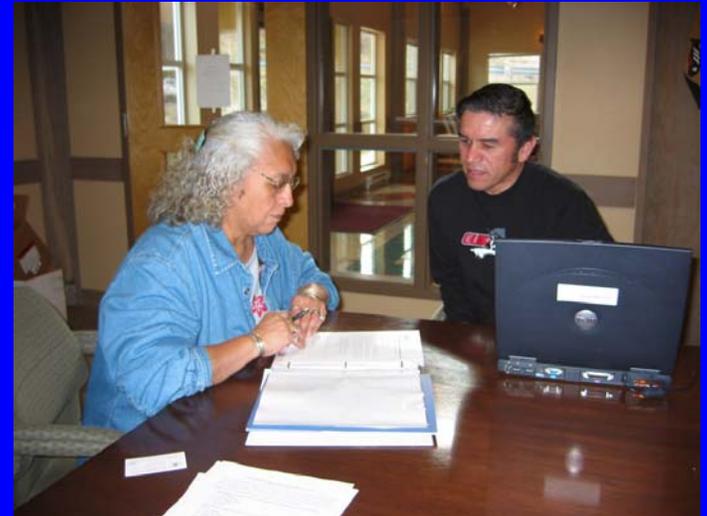
- Columbia River Intertribal Fish Commission, 1994
- Tulalip Tribes and Squaxin Island Tribe, 1996
- Asian and Pacific Islanders in King County, 1999
- Suquamish Tribe, 2000

Considerations

- Leverage experience gained in earlier surveys.
- Tribes want to retain custody of their data.
- Tool should be usable by many Tribes.

Computer assisted personal interview (CAPI) based on MS Access

- Standardize interview process
- Enhance flow of interview
- Error and validity checking during data interview
- Eliminate paper/computer format data transcription
- Facilitate routine statistical analysis
- Data stored in an organized format





Issues with surveys and CAPIs

- Current seafood consumption rates are suppressed and surveys can not capture historic resource use.
- CAPI may not be consistent with the narrative or story telling approach that is common to Tribal cultures.
- CAPI may not capture qualitative impacts of contamination on Tribal cultures and life ways
- Tribal elders may not be comfortable with a CAPI.
- Programming expertise to develop/modify CAPIs is expensive.

Project history/status

- Funded by Regional Applied Research Effort (RARE) grant and NHEERL funding, 2003-2006
- EPA Region 10, NHEERL, & Westat partnered to develop a Suquamish survey-based CAPI in MS Access
- Updated version of CAPI, user's guide, and training materials completed, early 2006
- Quinault Tribe reviewed software and participated in pilot testing and software customization, March 2006
- Westat finalized revisions based on pilot test and Quinault acceptance survey, June 21, 2006
- Possibility of additional funding in 2006 for further refinements

Information collected

- Consumption of species groups/species of fish and shellfish
 - 24-hour recall consumption
 - Yearly in- & out-of-season consumption
 - Adult
 - Child
 - Consumption at gatherings
- Methods of preparation & portions consumed
- Parts of organisms consumed

Information collected (continued)

- Sources of seafood (e.g., restaurant, home)
- Harvest locations for self-caught seafood
- Factors affecting seafood consumption over time
- Interviewee information (e.g., gender, age, weight, height, income, breast feeding history)
- Interview quality (e.g., cooperation, reliability)

Software components

- **Set-up module, “Supervisor Module”**
 - Configuration for each Nation
 - Question Library identifies species, migration periods, seasonality, and species group
 - Allows deployment by USB drive onto Interviewer PCs
- **Survey components**
 - 24-Hour Recall Rates
 - In-season vs. Out-of-season Consumption Rates or Throughout the Year

Software components

(continued)

- **Import of data from Interviewer PCs via USB drives**
 - Allows accumulation of data from multiple sites into Supervisor's master version
 - Allows addition of other species (Translation)
- **Reporting module – provides 6 statistical reports**
 - Rates based on 24-hour recall, seasonal/annual rate data
 - At species, group, and overall levels
 - Overall and group statistics by gender for 24-hour recall and rate data
- **Query options**

Supporting materials in notebook format

- Photos/images of species library
- Seafood portion photographs
- Maps of harvest locations
- Guidance manuals
 - Supervisor's configuration
 - Map preparation
 - Photographs of cooking preparations
 - Statistical considerations
 - Interviewer selection & training
 - Human subject's ethical considerations

King or Chinook Salmon



Seafood portion photographs

- Considered plaster casts, 3-D block shapes, or photos
- Life size photos chosen because:
 - More accurately depicts cooked preparations
 - Easily organized for access during interview
 - Readily transportable
 - Easily transmitted via the Web
 - Easily duplicated

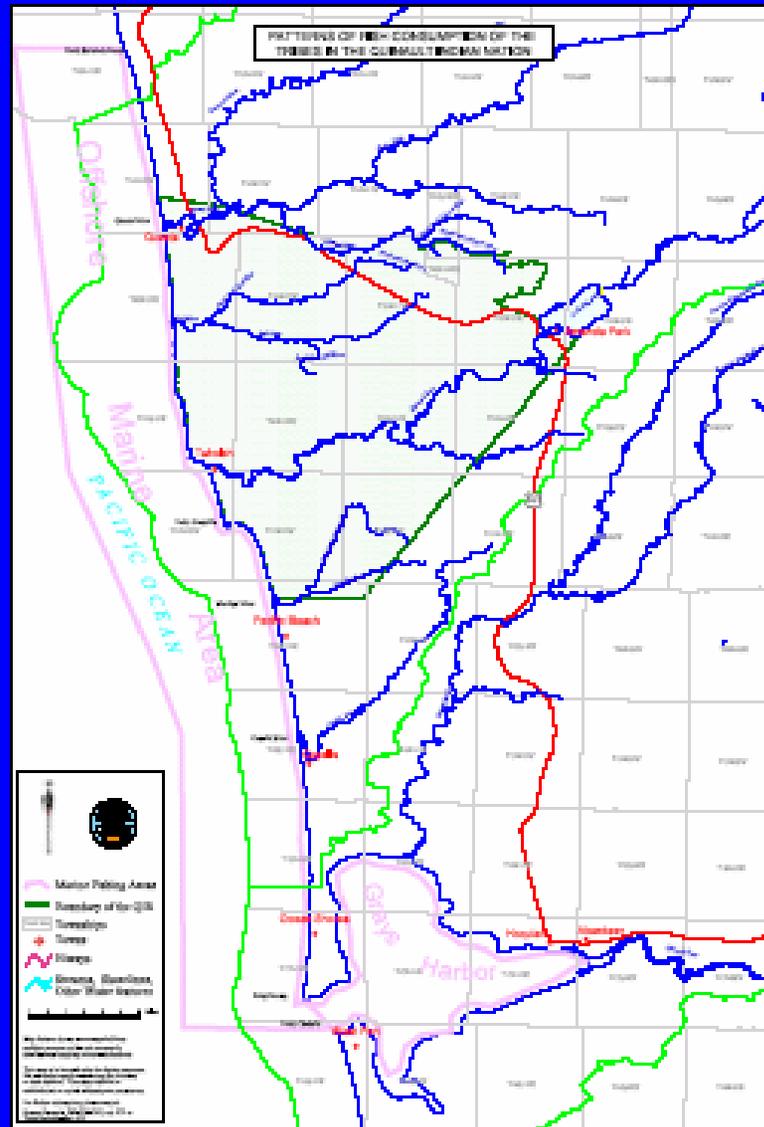
Dungeness crab



1"



Harvest area maps



Configuration set-up screens

The configuration set-up screens sequentially develop the underlying database tables to customize the CAPI to interview members of a particular Tribe.

1. Define species	6. Determine preparations
2. Define groups of species	7. Associate species with preparations
3. Specify interview section	8. Define shellfish parts consumed
4. Specify season	9. Associate species with parts consumed
5. Determine order	10. Define catch/harvest locations

Question library

(A field can be sorted by clicking on its column header)

SpeciesID	Species Description	IncludeText	Migratory	Latin Name
1	King Salmon	Chinook	<input type="checkbox"/>	
2	Sockeye	Red	<input type="checkbox"/>	
3	Coho	Silver	<input type="checkbox"/>	
4	Chum	Dog	<input type="checkbox"/>	
5	Pink		<input type="checkbox"/>	
6	Steelhead		<input type="checkbox"/>	
7	King Salmon	Sockeye, Coho, Chum, King, Pink,	<input type="checkbox"/>	
8	Smelt		<input type="checkbox"/>	
9	Herring		<input type="checkbox"/>	
10	Cod	Rock, Tom	<input type="checkbox"/>	
11	Perch		<input type="checkbox"/>	
12	Pollock	imitation crab and other imitation se	<input type="checkbox"/>	

Search Fields

Select Field to Search on:

Species ID

Species Description

Include Text

Enter a Search:

Search

Reset

Add

Edit

Close

Record:   1   * of 62

Define groups of species

STEP ONE: Define Groups

SEAFOOD CONSUMPTION CONFIGURATION WIZARD

	Group ID	Group Description	Rate Section
▶	A	Migratory Finfish	Finfish
	B	Pelagic Finfish	Finfish
	C	Bttm Feeding Finfish	Finfish
	D	Bttm Pelagic Finfish	Finfish
	E	Freshwater Finfish	Finfish
	F	Freshwater Shellfish	Shellfish
	G	Marine Shellfish	Shellfish
	H	Or Marine Finfish	Finfish
	I	Or Frshwater Finfish	Finfish
	J	Or Marine Shellfish	Shellfish
	X	User Provided	
*			

Record: 1 of 11

Exit Back Next

Add species to different parts of the questionnaire

STEP TWO: Define Species

SEAFOOD CONSUMPTION INSTALLATION WIZARD

Species ID	Group ID	Species Description	Recall	Recall Sort Order	Rate Tables	Rate Tables Sort Order
▶ 20	E	Clams	<input checked="" type="checkbox"/>	1	<input type="checkbox"/>	
21	E	Clams	<input type="checkbox"/>		<input checked="" type="checkbox"/>	1
22	E	Horse Clams	<input type="checkbox"/>		<input checked="" type="checkbox"/>	2
23	E	Butter Clams	<input type="checkbox"/>		<input checked="" type="checkbox"/>	3
24	E	Geoducks	<input checked="" type="checkbox"/>	2	<input checked="" type="checkbox"/>	4
25	E	Cockles	<input checked="" type="checkbox"/>	3	<input checked="" type="checkbox"/>	5
26	E	Oysters	<input checked="" type="checkbox"/>	4	<input checked="" type="checkbox"/>	6
27	E	Mussels	<input checked="" type="checkbox"/>	5	<input checked="" type="checkbox"/>	7
28	E	Moon Snail	<input checked="" type="checkbox"/>	6	<input checked="" type="checkbox"/>	8
63	E	Clams	<input type="checkbox"/>		<input type="checkbox"/>	
* (toNumber)			<input type="checkbox"/>		<input type="checkbox"/>	

Record: 20 of 29

Back **Next**

Define species seasonality

STEP TWO: Define Species

SEAFOOD CONSUMPTION CONFIGURATION WIZARD

SpeciesID	Group ID	Species Description	Number of Days In Season	In Season Text	Recall	Recall
1	A	King or Chinook Salmon	274	April - December	<input type="checkbox"/>	
2	A	Chum or Dog Salmon	152	August - December	<input type="checkbox"/>	
3	A	Pink Salmon	60	August - September	<input type="checkbox"/>	
4	A	Sockeye or Red Salmon	180	February - July	<input type="checkbox"/>	
5	A	Coho Salmon	244	June - January	<input type="checkbox"/>	
6	A	Migratory Finfish	0		<input type="checkbox"/>	
7	A	Salmon	0		<input checked="" type="checkbox"/>	
8	A	Steelhead	0		<input type="checkbox"/>	
9	B	Surf Perch	213	March - September	<input checked="" type="checkbox"/>	
10	B	Anchovies, Smelt, Sardin	0		<input checked="" type="checkbox"/>	
11	B	Pelagic Finfish	0		<input type="checkbox"/>	
12	C	Sole/Flounder	0		<input checked="" type="checkbox"/>	
13	C	Sturgeon	0		<input checked="" type="checkbox"/>	

Record: 1 of 49

Exit Back Next

Determine species interview order

STEP TWO: Define Species

SEAFOOD CONSUMPTION CONFIGURATION WIZARD

SpeciesID	Group ID	Species Description	Rate Tables	Rate Tables Sort Order	Gatherings	Gatherings
1	A	King or Chinook Salmon	<input checked="" type="checkbox"/>	1	<input type="checkbox"/>	
2	A	Chum or Dog Salmon	<input checked="" type="checkbox"/>	2	<input type="checkbox"/>	
3	A	Pink Salmon	<input checked="" type="checkbox"/>	3	<input type="checkbox"/>	
4	A	Sockeye or Red Salmon	<input checked="" type="checkbox"/>	4	<input type="checkbox"/>	
5	A	Coho Salmon	<input checked="" type="checkbox"/>	5	<input type="checkbox"/>	
6	A	Migratory Finfish	<input type="checkbox"/>		<input type="checkbox"/>	
7	A	Salmon	<input type="checkbox"/>		<input checked="" type="checkbox"/>	
8	A	Steelhead	<input checked="" type="checkbox"/>	6	<input type="checkbox"/>	
9	B	Surf Perch	<input checked="" type="checkbox"/>	1	<input type="checkbox"/>	
10	B	Anchovies, Smelt, Sardin	<input checked="" type="checkbox"/>	2	<input type="checkbox"/>	
11	B	Pelagic Finfish	<input type="checkbox"/>		<input type="checkbox"/>	
12	C	Sole/Flounder	<input checked="" type="checkbox"/>	1	<input type="checkbox"/>	
13	C	Sturgeon	<input checked="" type="checkbox"/>	2	<input type="checkbox"/>	

Record: 1 of 49

Exit Back Next

Define preparations

STEP THREE: Define Portion Preparation Forms

SEAFOOD CONSUMPTION CONFIGURATION WIZARD

Photo ID	Preparation Form Type	Portion Description	Raw Gram Wt	Cooked Wt
BTRC	Butter Clam	6 steamed clams		
CLMF	Fried clams	12 strips		
COFI	Canned fish	Half pint jar	326	
CRBC	Cooked meat from one crab	1 crab	382	
CRBM	Cooked crab meat	8 oz cooked meat	226.796	
CUPC	Cup of clam chowder	1 Cup	45.3	
CUPF	Cup of fish stew	1 Cup	136	
FLT	Fillet, fresh or smoked	8 oz baked fillet	226.796	
FRTR	Fritters	3 fritters	52.569	
HASH	Fish Hash	8 oz of fish hash	57	
LOBM	Cooked meat	8 oz cooked meat		
LOBW	Cooked meat from a whole lobster	1 lobster		
MANC	Steamed manila clams	6 steamed clams	98.2	

Record: 1 of 27

Exit Back Next

Assign preparations to species

STEP FOUR: Assign Preparation Forms to Species

SEAFOOD CONSUMPTION CONFIGURATION WIZARD

Species ID	Photo ID	
✎ Sockeye or Red Salmon	Baked fillet	
* [Greyed out]	Baked fillet	FLT 8 oz baked fillet
	Fritters	FRTR 3 Fritters
	Steamed clams	MANC 6 steamed clams
	Steamed Mussels	MUSS 6 steamed mussels
	Raw Oysters	OYST 6 raw oysters
	Fried razor clams	RZCF 6 fried razor clams
	Sauteed scallops	SCLP 6 sauteed scallops
	Container of shrimp	SRPC 8 oz cooked meat

Record: [Navigation icons] 1 of 1

Exit Back Next

Define shellfish parts consumed

STEP FIVE: Define Shellfish Parts

SEAFOOD CONSUMPTION CONFIGURATION WIZARD

	Part Description
<input type="checkbox"/>	Other Part
<input type="checkbox"/>	Whole body
<input type="checkbox"/>	Whole body less gut
<input type="checkbox"/>	Roe
<input type="checkbox"/>	Roe and meat
<input type="checkbox"/>	Neck
<input type="checkbox"/>	Strap
<input type="checkbox"/>	Gut
<input type="checkbox"/>	Meat
<input checked="" type="checkbox"/>	Butter
<input type="checkbox"/>	Ink
<input type="checkbox"/>	Mantle
<input type="checkbox"/>	Tentacles

Record: 10 of 19

Associate shellfish parts and species

STEP SIX: Assign ShellFish Parts to Species

SEAFOOD CONSUMPTION CONFIGURATION WIZARD

	Species ID	Part ID
▶	Dungeness Crab	Meat
	Mussels	Whole body
	Clams	Whole body
	Razor Clams	Whole body less gut
	Razor Clams	Neck
	Razor Clams	Boot
	Pacific Oyster	Whole body
	Cockles	Whole body
	Horse Clam	Whole body less gut

Record: 1 of 23

Exit Back Next

Define catch and harvest locations

STEP SEVEN: Define Catch and Harvest Locations

SEAFOOD CONSUMPTION CONFIGURATION WIZARD

Catch Area Code	Catch Area Name	Display Order
▶ CHER	Chehalis River	101
COPB	Copalis Beach	103
COPR	Copalis River	104
CORW	Columbia River Waters	102
GRYH	Grays Habor	105
HMPR	Humptulips River	106
KALB	Kalaloch Beach	107
MOCR	Moclips River	109
NHLO	Not Harvested Locally	98

Record: 1 of 20

Finish **Back**

Software Screen Shots: Interview Questions

CAPI Introduction

MAIN INTRODUCTION

Hello, my name is Anna, and I represent the Quinault Tribe. We appreciate your willingness to participate in our fish and shellfish consumption survey.

The information given in response to this questionnaire will help the Quinault Tribe to understand the rates of fish and shellfish consumption and the species or types of seafood regularly consumed by members of the Quinault Tribe and their families.

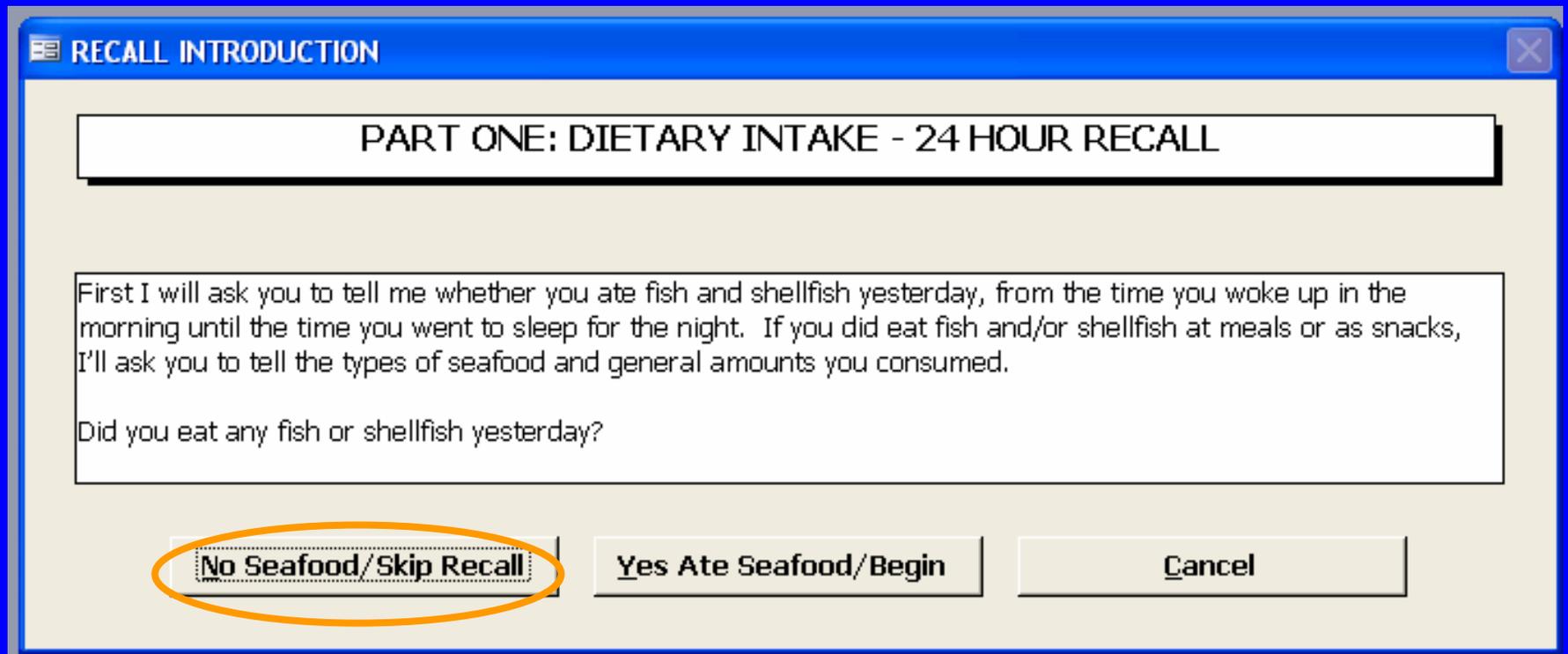
All of the information which you provide to us during this interview is confidential. Your responses to the questions will be combined with those of others so that your answers cannot be identified. Once the survey is complete, there will be an article in a tribal publication summarizing the results. In the meantime, if you have any questions, you are welcome to call me or the Fisheries Department. Here is my card and that of the Project Coordinator, in the Fisheries Department.

This interview will take about one hour. It is in three parts. In Part One, I will ask you to tell me how much seafood you ate yesterday. The second and third parts focus on particular types of seafood you eat, and where the seafood was prepared. I will also ask you about the consumption patterns for children aged five and under who live within your household. Finally, I'll ask you for some general information.

Are you ready to begin?

Next **Cancel**

24-Hour recall



RECALL INTRODUCTION

PART ONE: DIETARY INTAKE - 24 HOUR RECALL

First I will ask you to tell me whether you ate fish and shellfish yesterday, from the time you woke up in the morning until the time you went to sleep for the night. If you did eat fish and/or shellfish at meals or as snacks, I'll ask you to tell the types of seafood and general amounts you consumed.

Did you eat any fish or shellfish yesterday?

No Seafood/Skip Recall **Yes Ate Seafood/Begin** **Cancel**

24-Hour Recall: Is a species/species group consumed?

PART ONE: DIETARY INTAKE - 24 HOUR RECALL

Subject ID 0010000001

Interviewer Prompt
Did you eat any Salmon such as Sockeye, Coho, Chum, King, Pink, Steelhead yesterday from the time you woke up until the time you went to sleep for the night? Please include at meals and as snacks.

Interviewer Instructions
Display the image of Salmon.

R1 Eat Salmon?

Next **Previous** **Previous Species**

Question asked by the interviewer

Gives instructions to the interviewer

Question ID no.

24-Hour Recall: Where was the fish prepared?

PART ONE: DIETARY INTAKE - 24 HOUR RECALL

Subject ID 0010000001

Interviewer Prompt
Thinking about all the Salmon you ate yesterday was it prepared at home at a restaurant or another place?

Interviewer Instructions
If respondent ate Salmon multiple times prepared at different locations choose Both.

R2 **Preparation location of Salmon?**

Home
Restaurant or Other
Both
Prefer not to say
Don't know

Next **Previous** **Pre**

24-Hour Recall: How much was consumed?

PART ONE: DIETARY INTAKE - 24 HOUR RECALL

Subject ID 0010000001

Interviewer Prompt

Thinking about all the Salmon you ate yesterday, how much total Salmon did you eat? You can either give me that amount in pounds or ounces.

Interviewer Instructions

Respondent should provide total amount in pounds or ounces. If Respondent prefers not to provide the amount, enter -7 in the first field. If Respondent does not know the amount, enter -8 in the first field.

R3 Amount of Salmon eaten? 2 Pounds **R4** Unit

Next Species **Previous** **Previous Species**

Out of range error checking

PART ONE: DIETARY INTAKE - 24 HOUR RECALL

Subject ID 0010000001

Interviewer Prompt
Thinking about all the Salmon you ate yesterday, how much total Salmon did you eat? You can either give me that amount in pounds or ounces.

Interviewer Instructions
Respondent should provide total amount in [] refers not to say then enter -7 or -8.

R3 Amount of Salmon eaten? [] **R4** Unit []

Seafood Consumption Survey
Amount eaten seems high.
Do you still want to Continue?

Yes No

Next Species **Previous** **Previous Species**

Was 10 pounds reasonable?

Data entry verification

PART ONE: DIETARY INTAKE - 24 HOUR RECALL

Subject ID: 0010000001

Interviewer Prompt: Did you eat any Surf Perch yesterday from the time you woke up until the time you went to sleep for the night? Please include at meals and as snacks.

Interviewer Instructions: Display the image of Surf Perch.

R1: Eat Surf Perch?

Next Previous Previous Species

Seafood Consumption Survey
Please enter a value for R1
OK

Assures all data are entered.

Ability to annotate responses

Participant Comments

When entering Comments, please indicate question number, followed by a ;, species name, followed by a ;, and then a comment, followed by a return

Enter Notes/Comments:

Q5B; Group B; respondent was somewhat unsure if inside area was code 876 or 877 so I recorded 877 because he felt more strongly about 877
T1B; Perch; respondent providing a best guess for seasonality responses

Identifies question associated with comment.

Cancel OK

Seasonal vs. rest of year consumption rates

PART TWO: FINFISH CONSUMPTION - SEASON, FREQUENCY, PORTIONS

For this next part of the survey I will ask you questions about what species of finfish and shellfish you eat, the amount you eat, and how frequently you eat each species over a year.

The amount of fish you eat and how often you eat it may depend on the time of year. If there are seasonal differences in how often you eat fish, you may answer two different ways: when it is fresh and readily available, and when it is not in season. Or, if you believe there is no difference in how often you eat the fish I ask you about, you can tell me how often you eat fish in general without regard to when it is in season. Please remember to include breakfast, lunch, dinner, and snacks. Do not include fish you eat at ceremonies or community gatherings and events, since I will be asking you about that in a later section.

[Interviewer Prompt](#)

Display fish photos

Begin Finfish Rates **Cancel**

Seasonal/yearly consumption questions:

- Species level questions:
 - Did you eat the species?
 - Does your consumption change in-season vs. out-of-season?
 - Frequency
 - Preparation
 - Multiples of portions consumed
- Group level questions:
 - Parts of species consumed
 - Source of seafood
 - Harvest locality

Seasonal Consumption: Is a species consumed?

PART TWO: FINFISH CONSUMPTION - SEASON, FREQUENCY, PORTIONS

Subject ID: 0010000001

Interviewer Prompt
In the past 12 months, did you ever eat King or Chinook Salmon?

Interviewer Instructions
Display the species image of King or Chinook Salmon.

T1A **Eat King or Chinook Salmon?**

Yes
No
Prefer not to say
Don't know

Seasonal: Does consumption change if the fish is in- or out-of-season?

PART TWO: FINFISH CONSUMPTION - SEASON, FREQUENCY, PORTIONS

Subject ID: 0010000001

Interviewer Prompt

Are you able to tell me if the amount of King or Chinook Salmon you eat is different when the fish is in season and is fresh and available than when the fish is not in season?

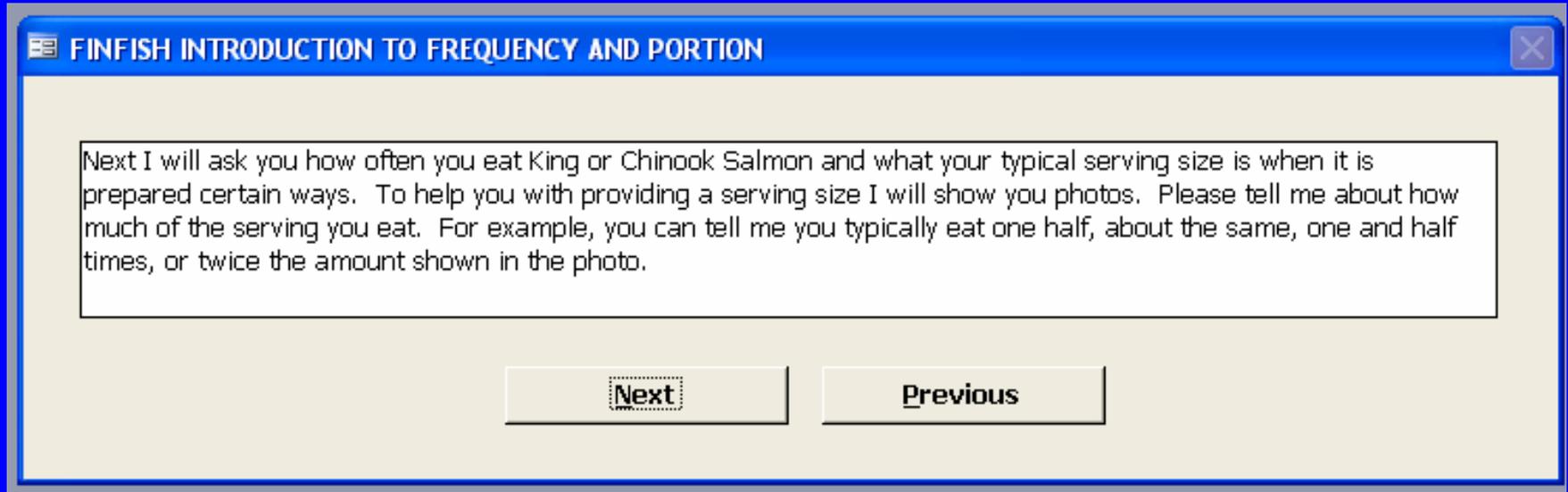
Interviewer Instructions

None.

T1B **Able to provide in-season portion sizes**

Yes
No
Prefer not to say
Don't know

Frequency and portion prompt



FINFISH INTRODUCTION TO FREQUENCY AND PORTION

Next I will ask you how often you eat King or Chinook Salmon and what your typical serving size is when it is prepared certain ways. To help you with providing a serving size I will show you photos. Please tell me about how much of the serving you eat. For example, you can tell me you typically eat one half, about the same, one and half times, or twice the amount shown in the photo.

Next Previous

Seasonal: Number of portions by preparation per time unit – In Season

PART TWO: FINFISH CONSUMPTION - SEASON, FREQUENCY, PORTIONS

Subject ID: 0010000001

Interviewer Instructions: Display prepared Form photo. Portions can be decimal or whole number multiples. Enter -7 or -8 for don't know or prefer not to sav

In Season
Days in season: 274

Prompt	Frequency T1E	Per Unit T1F	Prompt	Portion T1D
How often do you eat King or Chinook Salmon (as/in) Container of fish when in season?	3		Looking at the photo, about how much do you usually eat in season?	1.5
How often do you eat King or Chinook Salmon (as/in) Fillet when in season?		Day Week Month Year Season	Looking at the photo, about how much do you usually eat in season?	

Record: 1 of 3

Next Previous Previous Species

Parts of finfish consumed

PARTS CONSUMED AND PREPARATION

Subject ID: 0010000001

Interviewer Prompt
What percent of the time do you eat the fillet with and without skin? Your two answers should equal 100%. Provide me with the fillet with skin percentage first.

Interviewer Instructions
Enter in -7 for refusal or -8 for don't know. If on without skin field, press the tab key to update percent total.

Q2A1	Fillet with skin percentage	<input type="text"/>	%
Q2A2	Fillet without skin percentage	<input type="text"/>	%
	Total	<input type="text" value="0"/>	%

Next **Previous**

Parts of finfish consumed (continued)

PARTS CONSUMED AND PREPARATION

Subject ID: 0010000001

Interviewer Prompt
What percent of the time do you eat fish eggs when available?

Interviewer Instructions
Enter -7 if Respondent prefers not to provide a percentage. Enter -8 if Respondent does not know the percentage.

Q2B1 **Percentage of times eggs eaten**

Next **Previous**

Parts of finfish consumed (continued)

PARTS CONSUMED AND PREPARATION

Subject ID: 0010000001

Interviewer Prompt
What percent of the time do you eat the head, bones or organs of the fish you consume?

Interviewer Instructions
Enter -7 if Respondent prefers not to provide a percentage. Enter -8 if Respondent does not know the percentage.

Q2B2 **Other parts percentage**

Next **Previous**

Sources of seafood

FINFISH SOURCES INTRO



Please tell me approximately what percentage of fish you eat is obtained from the following sources. First, I will read the categories so that you can think about each of them. Then I'll repeat each category so that you can give your answer. Your answers should total 100 percent. The sources are 1) grocery stores; 2) fish from the Washington caught by you, your family members, the Ann Tribe, and/or friends; 3) fish from outside Washington caught by you, your family members, the Ann Tribe, and/or friends; 4) restaurants; and, 5) other.

Let me remind you which fish I would like you to consider when answering:

List of Species:

King or Chinook Salmon
Coho Salmon

Next

Sources of seafood

FINFISH SOURCES

Subject ID: 0010000001

Interview Prompt

Please tell me what percentage of time your fish is from the grocery store, from the Washington area, from outside the Washington area, from a restaurant, and from Other sources.

Interview Instructions

The percents from the 5 sources should add to 100. If respondent does not know enter a -8 or prefers not to say enter -7.

Q4_1	Grocery Store percent	10	%
Q4_2	Inside area percent	50	%
Q4_3	Outside area percent	20	%
Q4_4	Restaurant percent	20	%
Q4_5	Other source percent		%
	Other source specified		
	Total	100	%

Next **Previous**

Harvest locations

FINFISH CATCH INSIDE AREA - PART 1

Subject ID: 0010000001

Interview Prompt

We are interested in knowing where in Washington you, your family members, the Ann Tribe, and/or friends catch the fish you eat. If you know where the fish is caught and want to show me by referring to these display maps, we would appreciate having the information. If you prefer not to tell me, we can go on to the next question.

Interview Instructions

None.

Q5 **Able to provide in Washington information?**

Next Previous

Yes
No
Prefer not to say
Don't know

Harvest locations

FINFISH CATCH INSIDE AREA - PART 2

Subject ID: 0010000001

Interview Prompt
Please show me on the map where the fish was caught.

Interview Instructions
Display maps for marine fish catch areas. Select the appropriate code from the display maps. Press the Next button to enter other codes. Choose Other if location is not in the list and specify the name in the adjacent field.

Q5A **Enter Catch Area**

Q5B **Other Catch area name**

KALB	Kalaloch Beach
QUER	Queets River
RESB	Reservation Beaches
RFTR	Raft River
QUIR	Quinault River
PGRB	Point Grenville Beach
MOCR	Moclips River
RMOB	Roosevelt Moclips Beach

Harvest locations

FINFISH CATCH OUTSIDE AREA - PART 1

Subject ID: 0010000001

Interview Prompt

We are interested in knowing where outside Washington you, your family members, the Ann Tribe, and/or friends catch the fish you eat. If you know where the fish is caught and want to show me by referring to these display maps, we would appreciate having the information. If you prefer not to tell me, we can go on to the next question.

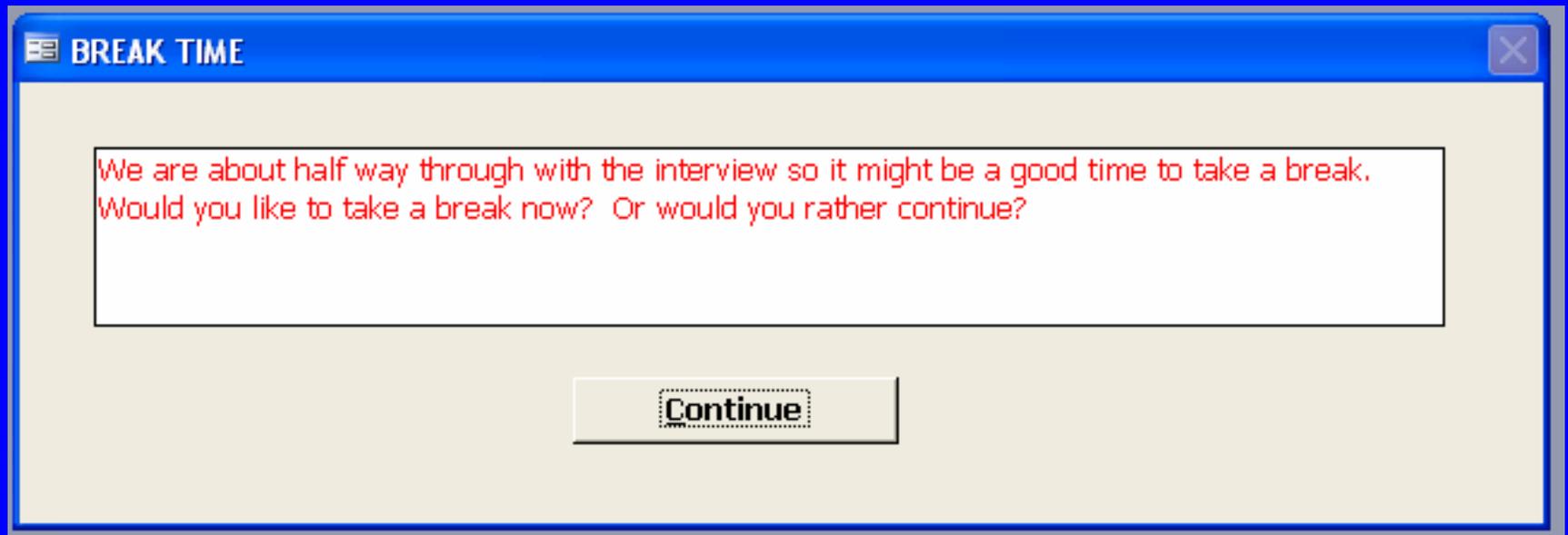
Interview Instructions

None.

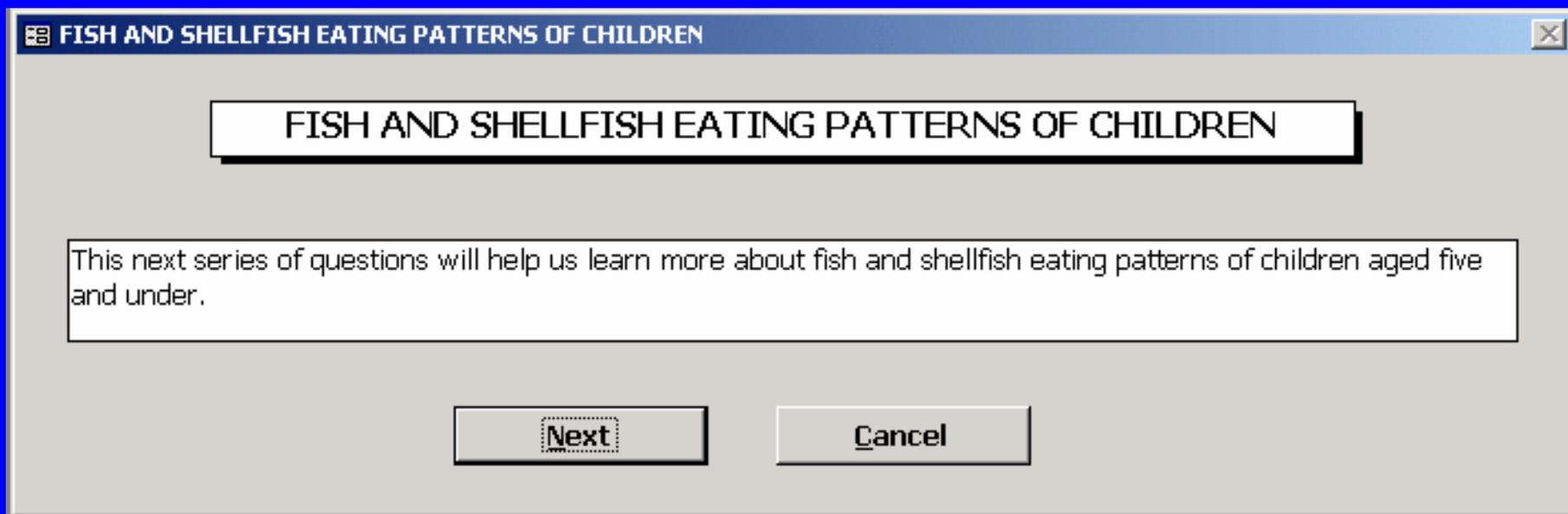
Q6 **Able to provide outside of Washington information?**

Yes
No
Prefer not to say
Don't know

Break time



Children's consumption



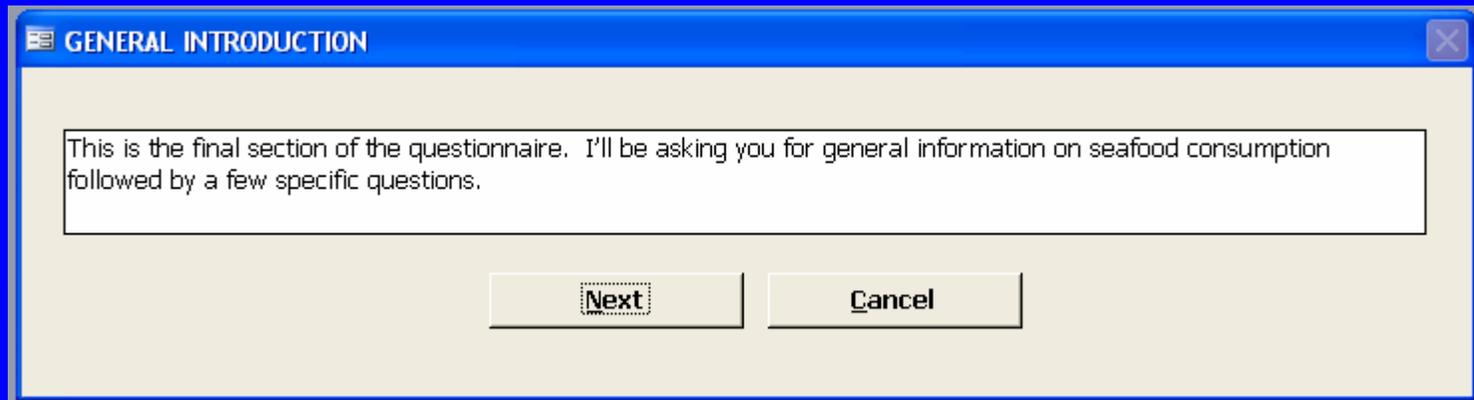
Children's questions

- Are there any children under six living in your household?
- How many children under 5 live in your household?
- Please tell me the youngest child's name.
- Please tell me the gender of this child.
- What is this child's birthdate or age?
- How much does this child weigh; what is his/her height?
- Was this child breastfed? If so, for how long?
- Does this child eat seafood? At what age did he/she begin eating seafood?
- Has this child lived with you since birth or for at least one year?

Children's questions (continued)

- What proportion of the time are you present for meals with the children?
- Do you prepare the majority of the foods these children eat?
- Do you know if this child ate fish/shellfish (by group) in the past year?
- How much of each item, by preparation, and in what frequency was the species consumed?
- What parts of the fish/shellfish were consumed?

Final section



Consumption changes

GENERAL QUESTIONS

Subject ID 0010000001

Interviewer Prompt

Sometimes for various reasons, people's consumption of fish and shellfish changes. Has the amount of fish and/or shellfish consumed by you or your family changed over the last twenty years?

Interviewer Instructions

None.

Q43 **Changed over last 20 years?**

Next

- Yes
- No
- Prefer not to say
- Don't know

Types of changes

GENERAL QUESTIONS

Subject ID 0010000001

Interviewer Prompt
How has the amount of fish and/or shellfish you have eaten over the past 20 years changed?

Interviewer Instructions
None.

Q44 **What has changed?**

Next

- Eat more now
- Eat less now
- Eat different types now
- Prefer not to say
- Don't know

Reasons for changes in consumption

GENERAL QUESTIONS

Subject ID 0010000001

Interviewer Prompt
Please tell me what you think has caused the change in the amount or type of fish and shellfish you now eat.

Interviewer Instructions
Place a check in the box next to each reason that applies. Be sure to use the scroll bar to view all reasons if needed.

Q45 **Reason for change**

<input type="checkbox"/>	Chemical pollution
<input type="checkbox"/>	Algal blooms/red tides
<input type="checkbox"/>	Restrictions and regulations on harvesting
<input type="checkbox"/>	Fewer fish and shellfish available
<input type="checkbox"/>	Work/schedule doesn't permit as much harvesting.

Next **Previous**

Consumption at gatherings

GENERAL QUESTIONS

Subject ID 0010000001

Interviewer Prompt

Over a year, what is a typical number of ceremonies or family gatherings you attend where seafood is consumed? Examples of ceremonies include Elders' Week, Canoe Journeys, and potlatches. Family gatherings might be weddings, birthdays, and funerals.

Interviewer Instructions

If Respondent prefers not to tell you the number of events, enter -7. If does not know, enter -8.

Q46 **Number of Events per Year**

[Next](#) [Previous](#)

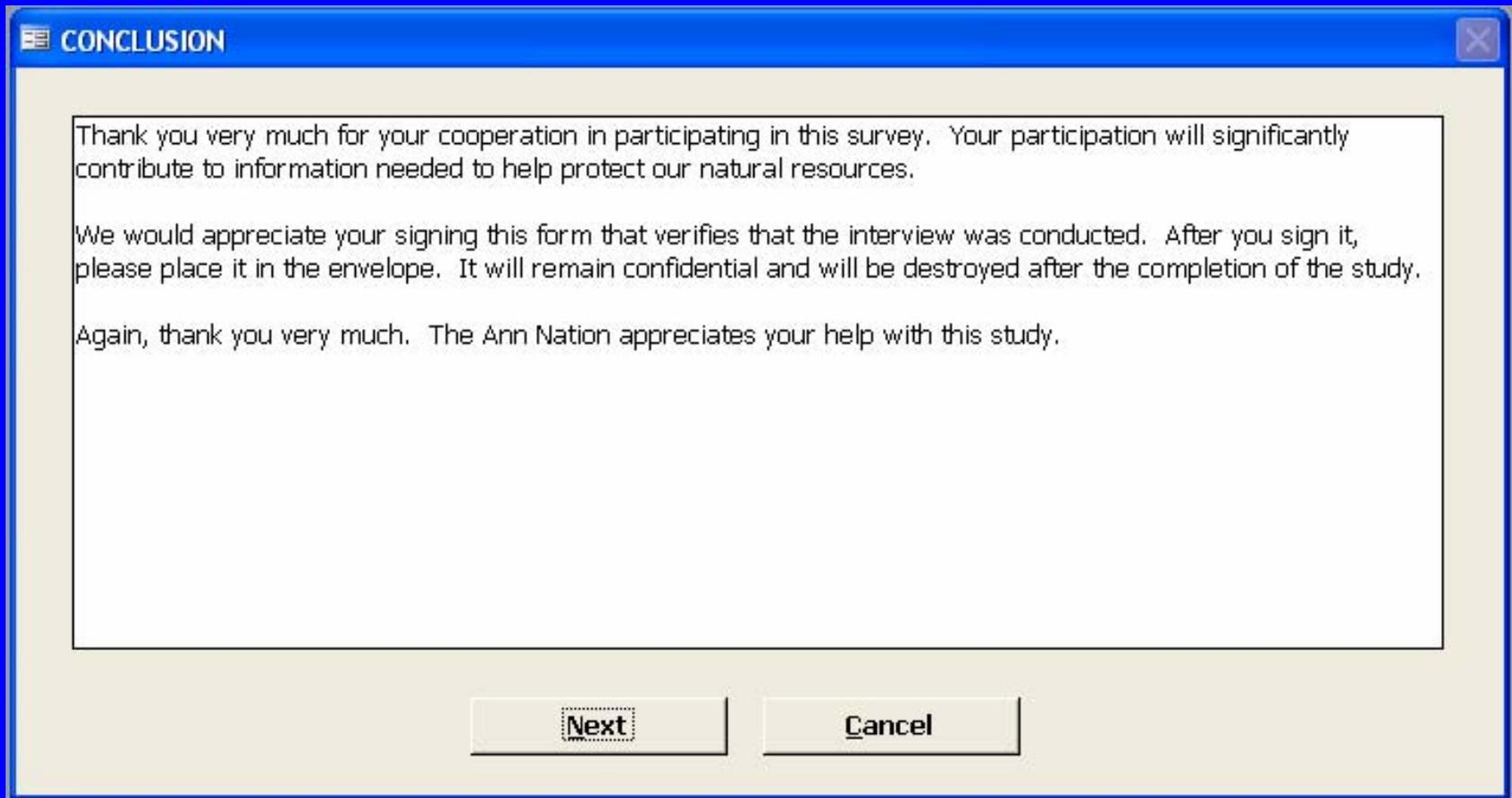
Consumption at gatherings

- What species do you eat?
- How are species prepared?
- How much of a portion do you eat?
- At what percentage of these events do you eat this species?

Demographics

- To what age group do you belong?
- What is your weight?
- What is your height?
- Optional: What is your income group?

Thank You



Query Options

GROUP SELECTION

Finfish Shellfish

Migratory Finfish
Pelagic Finfish
Bttm Feeding Finfish
Bttm Pelagic Finfish
Freshwater Finfish
Or Marine Finfish
Or Frshwater Finfish

↓
↓
↑
↑

Cancel Back Next Finish

SOURCES SELECTION

AVAILABLE

Grocery
Inside Area
Outside Area
Restaurant
Other Sources

↓
↓
↑
↑

SELECTED

Don't filter on Sources

Cancel Back Next Finish

SPECIES QUESTIONS SELECTION

AVAILABLE

King or Chinook Salmon
Chum or Dog Salmon
Pink Salmon
Sockeye or Red Salmon
Coho Salmon
Steelhead
Surf Perch
Anchovies, Smelt, Sardines, Herring
Sole/Flounder
Sturgeon
Halibut
Cod (Rock, Tom)
Greenlings (Lingcod)
Rockfish. nearshore

↓
↓
↑
↑

SELECTED

Cancel Back Next Finish

CONSUMER TYPE SELECTION

ALL Species Consumed
 At Least One Species Consumed

Cancel Back Next Finish

Reports

- Simple statistics: mean annual grams per person (raw weight) consumed per kg body weight per day, standard deviation, variance
- Consumption rates for 24-hour recall and seasonal/annual consumption by:
 - Species
 - Finfish/Shellfish Group
 - Group by gender
 - Overall & overall by gender

Quinault 24-Hour Recall Rates by Species

Recall By Species

Group ID	Species	Include Text	N (Ever)	N (Never)	MEAN	STD	VAR
A	Salmon	Sockeye, Coho, Chum, King, Pink, Steelhead	2	7			
B	Surf Perch		0	9			
	Anchovies, Smelt, Sardines, Herring		1	8			
C	Sole/Flounder		0	9			
	Sturgeon		0	9			
	Halibut		0	8			
D	Cod	Rock, Tom	0	8			
	Greenlings	Lingcod	0	8			
	Rock fish, nearshore		0	8			
	Pollack		0	8			
E	Trout	Cutthroat, Rainbow, Bull	0	8			
G	Dungeness Crab		0	8			
	Mussels	California, Blue	0	8			
	Clams	Manila, Littleneck	1	7			
	Razor Clams		2	6	1.01		
	Pacific Oyster		0	8			
H	Bull Cod or Cabezon		0	8			
	Mackerel		0	8			
	Tuna, canned		0	8			
	Tuna, fresh		0	8			
I	Common Carp		0	8			
	Largescale Sucker		0	8			
	Black Crappie		0	8			
	Smallmouth Bass		0	8			
	Pacific Lamprey		0	8			
J	Cockles		0	8			

Quinault rates by species

Consumption Rates By Species

Group ID	Species	Include Text	N (Ever)	N (Never)	MEAN	STD	VAR
A	King or Chinook Salmon		7	1	1.80	1.09	1.20
	Chum or Dog Salmon		3	5	.10	.09	.01
	Pink Salmon		2	6	.11	.07	.00
	Sockeye or Red Salmon		7	1	.84	.90	.80
	Coho Salmon		7	0	.45	.46	.21
	Steelhead		8	0	.82	1.18	1.39
B	Surf Perch		1	7	.06		
	Anchovies, Smelt, Sardines, Herring		5	3	.05	.06	.00
C	Sole/Flounder		2	5	.81	.81	.66
	Sturgeon		2	6	.86		
	Halibut		8	0	.24	.26	.07
D	Cod	Rock, Tom	2	5	.21	.17	.03
	Greenlings	Lingcod	1	6	.32		
	Rockfish, nearshore		1	7	.48		
	Pollack		2	6	.06		
E	Trout	Cutthroat, Rainbow, Bull	3	5	.04	.00	.00
G	Dungeness Crab		7	1	.48	.83	.70
	Mussels	California, Blue	4	4	.08	.09	.01
	Clams	Manila, Littleneck	4	2	.02	.01	.00
	Razor Clams		8	0	.13	.08	.01
	Pacific Oyster		2	5			
H	Bull Cod or Cabezon		0	8			
	Mackerel		1	7	.02		
	Tuna, canned		7	1	.02	.01	.00
	Tuna, fresh		1	7	.04		
I	Common Carp		0	8			

Quinault overall consumption rate percentiles

Consumption Rates Percentiles

PERCENTILE	RATE
1	.59
5	.59
10	.59
15	.59
20	.76
25	1.03
30	1.30
35	1.64
40	2.13
45	2.62
50	3.11
55	4.74
60	6.37
65	8.00
70	9.19
75	10.16
80	11.13
85	11.77
90	11.77
95	11.77
99	11.77

Why did the Quinault participate?

- The Quinault Nation recognized that determining seafood consumption rates was an important factor in the development of a Reservation water quality standards.
- The seafood consumption survey is intended to provide the Tribe and the EPA with a scientifically defensible data for use in our water quality standards.
- Since Tribal members consumes more seafood than the general public, stringent water quality criteria is needed to protect community health and wellbeing.

Why pilot test the CAPI?

- Train interviewers in interviewing techniques so that information is collected in a consistent way.
- Determine how well the survey works with different groups within a Tribe.
- Modify the survey based on pilot study feedback.

Preparation for Quinault pilot testing

- Determination of species and species groups
 - Tribal members
 - Tribal fisheries and shellfish biologists
- Consulted with Tribal members about how seafood dishes are prepared
- Preparation of harvest area maps
- Identify types of people to interview.
- Arrange logistics for interviews

Results

- Program flow and supporting materials were modified based on pilot interviews.
- Generally found the survey easy to use.
- Tribal elders were comfortable with the CAPI as long as they were interviewed by tribal members.
- Interviewees felt that the survey accurately captured Quinault seafood consumption.
- Felt that software could be used for a full scale Quinault Nation survey.

Anna!

Next Steps

- Full scale Quinault Nation survey using CAPI
- Potential additional funding for final upgrades and revisions
- Testing by another Tribal Nation for validation of flexibility
- Making the instrument available for use by other Tribes

Quinault Nation CAPI pilot testing



Acknowledgements

- **Quinault Nation**
 - Samuel Iwenofu, *Water Resources Specialist*
 - Pauline Capoeman, *Quinault Liaison*
 - Anna Towksjhea, *Survey Supervisor*
 - Karl Braden, *Interviewer*
 - J.R. Capoeman, *Interviewer*
 - Ervin Obi, *Interviewer*
 - Joe Schumacker, *Shellfish biologist*
 - Larry Gilbertson, *Fisheries Biologist*
 - Tony Hartrich, *Maps*
 - Rich Smith, *Maps*
 - Florine Shale-Bergstrom, *consulting*
 - Dora Underwood, *Tribal Elder, consulting*
 - Leta Shale, *Tribal Elder, consulting*
- **Westat**
 - Beth Mittl, *WAL*
 - Merwyn Lasrado, *Programmer*
 - Vanessa Olivo, *AWAL*
 - Cynthia Helba, *Trainer*
 - Paul Hurwitz, *PL*
- **EPA**
 - Lon Kissinger, *Region 10*
 - Ann Williams, *NHEERL*
 - Roseanne Lorenzana, *Region 10*
 - Pauline Mendola, *NHEERL*
 - Rebecca Calderon, *NHEERL*
 - Gina Andrews, *NHEERL*