SARA GROUP

Sudbury Area Risk Assessment
Volume II

Appendix K:

Local Food Consumption Survey

SUDBURY AREA RISK ASSESSMENT
LOCAL FOOD CONSUMPTION SURVEY

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K-1.0 INTRODUCTION

This report presents the results of a local food consumption survey for the Greater Sudbury area, conducted as part of the Sudbury Soils Study. The report has six main sections, including:

- Section K1.0 – introduction, survey background, and purpose;
- Section K2.0 –survey approach, methodology, and process;
- Section K3.0 – results of the telephone survey with a randomly sampled group of residents of the Greater Sudbury area, including a brief profile of key socio-demographic variables;
- Section K4.0 – results from interviews with residents of Whitefish Lake First Nation, located within the Greater Sudbury area;
- Section K5.0 – results from interviews with hunters and anglers from the Greater Sudbury area; and
- Section K6.0 – results from interviews with gardeners residing in the Greater Sudbury area.

K-1.1 Background

The Sudbury Basin is an area rich in mineral deposits, particularly the nickel and copper ores that have drawn people to the region for the past 125 years. The soils of the area have naturally high levels of a number of metals, as demonstrated by a number of recent studies. Areas with elevated soil metal levels are generally close to the historic smelting sites of Coniston, Falconbridge, and Copper Cliff. Although these metals do occur naturally in all soils, studies indicate that the higher amounts in surface soil (the top 5 cm) are the result of local mining, smelting, and refining operations.

In 2001, the Ontario Ministry of the Environment (MOE) released a report identifying that the concentrations of nickel, cobalt, copper and arsenic exceeded the generic MOE soil quality guidelines. Under Ontario legislation, this triggers the need for more detailed study. Therefore, the MOE made two recommendations:

- That a more detailed soil study be undertaken to fill data gaps; and
- That detailed human health and ecological risk assessments be undertaken.

Both Vale Inco and Xstrata Nickel voluntarily accepted the recommendations and began working together to establish what is commonly referred to as “The Sudbury Soils Study”.

The mining companies partnered with four other major stakeholders in Sudbury to oversee this rigorous study. The community partners are Vale Inco, Xstrata Nickel, the Ontario Ministry of the Environment, the Sudbury & District Health Unit, the City of Greater Sudbury, and the First Nations and Inuit Health Branch of Health Canada. These partners formed a Technical Committee to oversee the study. A Public Advisory Committee was also established to help address questions and concerns about the potential impact of elevated metal levels on the local environment and human health. As people who live and work in Sudbury, the members of this partnership share these questions and concerns.

In 2001, the MOE and the mining companies undertook a comprehensive soil sampling and analysis program. Approximately 8,000 soil samples were collected from urban and remote areas and analyzed for 20 elements. These data form the basis for the study.

Early in 2003, a consortium of consulting firms working together as the SARA (Sudbury Area Risk Assessment) Group was retained to undertake the risk assessment portion of the study. The main partners of the SARA Group are C. Wren & Associates Inc., Cantox Environmental Inc., RWDI, SGS Lakefield and Goss Gilroy Inc.

The human health implications of metal levels in soils and the environment are being examined under the Human Health Risk Assessment (HHRA) of the Sudbury Soils Study. This is the first comprehensive study examining the potential human and ecological risks associated with metal levels in air, soil, water, vegetation and other environmental matrices. The local food consumption survey described herein is one sub-component of the HHRA.

K-1.2 Purpose of the Survey

One way that people are exposed to metals is by eating local foods such as garden produce, wildlife, or berries. This survey was designed to measure the different types of local food that residents of the Greater Sudbury area consume annually and on a seasonal basis. This information is designed to contribute to the overall HHRA in the estimates of exposure to metals.

K-2.0 APPROACH AND METHODOLOGY

K-2.1 Research questions

The key research questions addressed by the survey are:

- What types of local foods do residents consume?
- What approximate quantities of local foods do residents consume?
- What are the sources of local food consumed by residents?

K-2.2 Survey design

The local food consumption survey was designed so that the results can be used as part of the HHRA component of the Sudbury Soils Study. This HHRA will produce estimates of exposure to metals and characterize potential pathways of exposure for Sudbury residents. The survey was designed to collect relatively detailed, Sudbury-specific information on local food consumption patterns from population sub-groups who are predicted to have higher levels of consumption (e.g., gardeners, hunters, First Nations residents), and broad information from the general community. The detailed information was collected through in-person interviews with representatives from the higher consumption groups. The broader information was collected via a telephone interview with a random sample of representatives from Sudbury households.

The survey region for vegetables and fruit included those grown in the respondent's garden or a neighbour's garden, as well as local fruit and vegetables grown in the Greater Sudbury area (available at local markets and/or grocery stores). Local fish and game included species caught or hunted within a 100 km radius of the Sudbury city core.

K-2.2.1 Telephone interviews

The specific steps that were followed with the telephone interview portion of the survey of the general population are described below:

Step One: Mail-out of Invitation to Participate

An invitation package was mailed to a random selection of households to inform them of the survey. The invitation package was tailored to the phone interview process and consisted of a bilingual cover letter explaining the purpose of the survey, how it related to the SSS, why the recipient was invited to participate, and contact information for the study team. The package also included a Q&A sheet for the survey (Appendix A).

Step Two: Follow-up Phone Call and Interview

Approximately 2 to 3 days after the invitations were sent, the respondents received a telephone call from the survey team during which the bilingual interviewer confirmed that they had received and read the invitation, asked them if they had any questions, and determined whether they were interested in participating. If the respondent agreed to participate the interviewer either began the interview at that time, if convenient. If the time was not convenient, the interviewer established a time to call back. If the respondent declined to participate, the interviewer thanked them for their time. Attempts to contact were made through 5 calls, at which point if no answer had been received, the number was retired.

At the scheduled time of the interview, the interviewer explained the process emphasizing the voluntary nature of the survey, the respondent's choice to answer any or all questions, and the approaches that were to be used to ensure confidentiality of the data collected. Interviewers used a Q&A sheet to go over these points (Appendix A). The interviewer went through the survey questionnaire with the respondents. Interviews lasted an average of 18 minutes and were conducted with the adult or adults of the household who were most knowledgeable about the family's diet. The interview followed a structured protocol with specific questions for each household member focusing on the following categories:

- Residential information (characterize members of household, water source, etc.)
- Activities (fishing, hunting, gardening, etc.)
- Diet/food (household consumption of local fruit, vegetables, fish, wild game, etc.)

The bilingual telephone survey team consisted of a survey manager, a survey supervisor and a staff of six interviewers, all of which are experienced in telephone interviews. All telephone interview data was entered into a Computer Assisted Telephone Interview (CATI) database. Each participating household received a unique identification number for data organization and verification purposes.

As part of the quality control process, the supervisor listened to 10 per cent of all telephone interviews throughout the process. At the conclusion of the survey, general edit verification was conducted for data quality. This process included generating univariate frequencies of the results of each question to identify any outliers or data anomalies that may affect the results.

K-2.2.2 In-person interviews

The approach adopted for conducting in-person interviews with members of Whitefish Lake First Nation, local gardeners, and local hunters and anglers included the following steps:

Step One: Survey Notification

Whitefish Lake First Nation

Residents of Whitefish Lake First Nation were notified of the survey through notices in a local newsletter and announcements at community meetings. This group is likely representative of a population that consumes a higher than average proportion of local game and fish.

Local Gardeners

Gardeners who had participated in a previous component of the Sudbury Soil Study (vegetable garden survey) were contacted to determine if they were willing to participate in the current component. The potential respondents were sent an invitation package that consisted of a bilingual cover letter explaining the purpose of the survey, how it related to the SSS, why they were invited to participate, and contact information for the respondent if they had questions. The package also included a Q&A sheet for the survey (Appendix A). This group is likely representative of a population that consumes a higher than average proportion of local vegetables and fruit.

Local Hunters and Anglers

Through interviews with representatives of the Sudbury Game and Fish Protective Association (an Ontario Federation of Anglers and Hunters member club), the study team determined that, in the winter months, one way to recruit local anglers and hunters was to target the ice-fishing community. The rationale presented by the representatives of the Association was that many people from the hunting and fishing community are involved in ice fishing. The interview team visited ice-fishing locations on local lakes to inform the sub-population of the survey. This group is likely representative of a population that consumes a higher than average proportion of local fish and game.

Step Two: Follow-up

Whitefish Lake First Nation

The survey team, made up of both Whitefish Lake First Nation member interviewers and researchers from the SARA Group, working in teams of two, went door-to-door to 110 households to recruit participants. As part of the recruitment process, respondents were informed that Whitefish Lake First Nation provided names and addresses to the research team and that the Director of Health and Support Services endorsed residents' participation in this survey. Respondents were also informed that participation in completing the survey was completely voluntary. The use of confidential data from Whitefish Lake First Nation members in this survey was endorsed by Chief and Council through a

signed Band Council Resolution. The researchers offered to conduct interviews at the time of recruitment or, if respondents preferred, they arranged a time that was more convenient.

Local Gardeners

Approximately 2 to 3 days after the initial invitations were sent, the respondent received a brief telephone call from a survey team member, during which the interviewer confirmed that the respondent had received and read the invitation. The respondent was then asked if they had any questions, and asked whether they were interested in participating. If yes, the interviewer established a convenient time for an interviewer to meet them at their house, or an agreed upon alternative location to complete the interview. If they declined to participate, the interviewer thanked them for their time.

Local Hunters and Anglers

The researchers offered to conduct interviews at the time of survey notification or, if respondents preferred, they arranged a time that was more convenient.

Step Three: In-person interview

The same in-person interview method was followed for the three survey sub-populations. At the scheduled time of the interview, the interviewer arrived at the household/ice-hut (or agreed upon alternative location) and explained the interview process emphasizing the voluntary nature of the survey, the respondent's choice to answer any or all questions, and the approaches that were to be used to ensure confidentiality of the data collected. Interviewers used a Q&A sheet to go over these points (Appendix A). The interviewer went through the survey questionnaire with the respondents.

Interviews lasted between 20 minutes and 1 hour and were conducted with the adult or adults of the household who were most knowledgeable about the family's diet. The interview followed a structured protocol with specific questions for each household member across the following categories:

- Residential information (home address, years/months spent at the current address, etc.)
- Activities (fishing, hunting, gardening, etc.)
- Diet/food (consumption of local fruit, vegetables, fish, wild game etc.)

As part of the quality control process, all completed questionnaires were checked and edited by the survey supervisor prior to data entry. Each participating household received a unique identification number. Each individual participant also received a unique identification number.

K-2.3 Data analysis

In order to develop an overall picture of the general community and the sub-groups, the research team created profiles of the response groups. The profiles describe current consumption levels of local foods measured in the survey according to basic demographics. The profiles were based on reporting simple measures of central tendency (e.g., mean, median) and variability (e.g., standard deviation) with continuous variables and proportional distributions for categorical variables. The profiles were developed using the data collected from the survey.

K-2.4 Challenges and limitations

The survey used a self-report data collection methodology. While self-report methods are convenient for community-based surveys, some of the limitations include under or over-reporting, difficulties with recall, and social desirability with respect to responses.

Of particular importance in considering the limitations of this survey is the challenge involved in accurately reporting food consumption. Most respondents find it challenging to recall frequency of consumption, accurately estimate portion sizes, and in some instances, have accurate knowledge of where local fruits and vegetables were grown and harvested, if not from their own gardens. As a result, the data collected in this survey should not be considered as necessarily representative of local diets. Rather, it should be considered as suitable for providing estimate ranges required for the purposes of the HHRA. It should be noted that the data reported have not been validated using any other food consumption reporting techniques such as 24-hour diaries, in-home monitoring, or secondary recall.

K-3.0 GENERAL PUBLIC (RESIDENTS OF THE GREATER SUDBURY AREA)

K-3.1 Population Profile

For the telephone survey of the general population, interviewers contacted 1,470 households. Of these, 426 households (29%) agreed to participate. The interviews collected household-level data as well as individual-level data for 1,226 individuals from the community.

The following interviews were conducted according to geographic areas:

- Sudbury, New Sudbury (n=105)
- Hanmer, Val Therese, Capreol, Val Caron (n=107)
- Falconbridge, Garson, Coniston (n=107)
- Copper Cliff, Lively (n=107)

The data collection method was based on household interviews with some additional individual responses; therefore a gender breakdown of all respondents was not available. Table K3.1 shows the age distribution of respondents.

Table K3.1 Profile of Respondents – General Public

Age	People in household	Percent of Respondents
0-5	76	6%
6-12	136	11%
13-17	96	8%
18+	918	75%
Total	1226	100%

Respondents were asked about household members' participation in hunting, fishing and gardening. Figure K-3.1 presents characteristics of fishing and hunting activity by household. Approximately one third of households (38%) reported that they plant a garden.

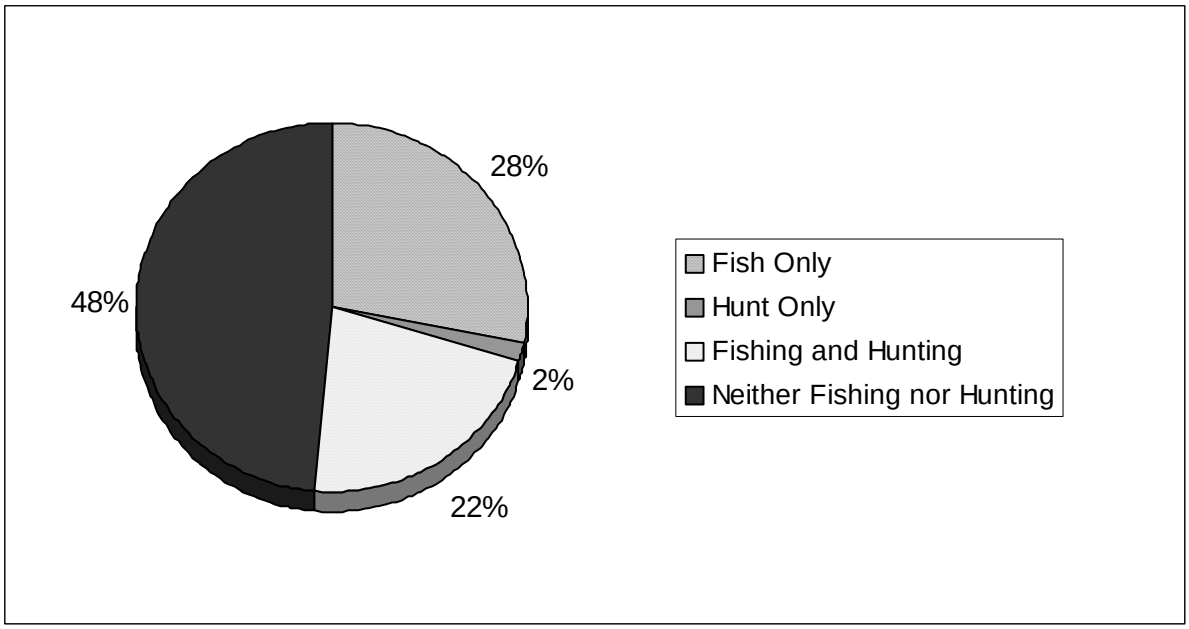

Figure K-3-1 Participation in hunting and fishing by household - general public

When asked about sources of local drinking water the majority of households (65.7%) reported to be on the municipal water supply (Figure K-3.2). The second-most commonly reported water supply was bottled water (23%).

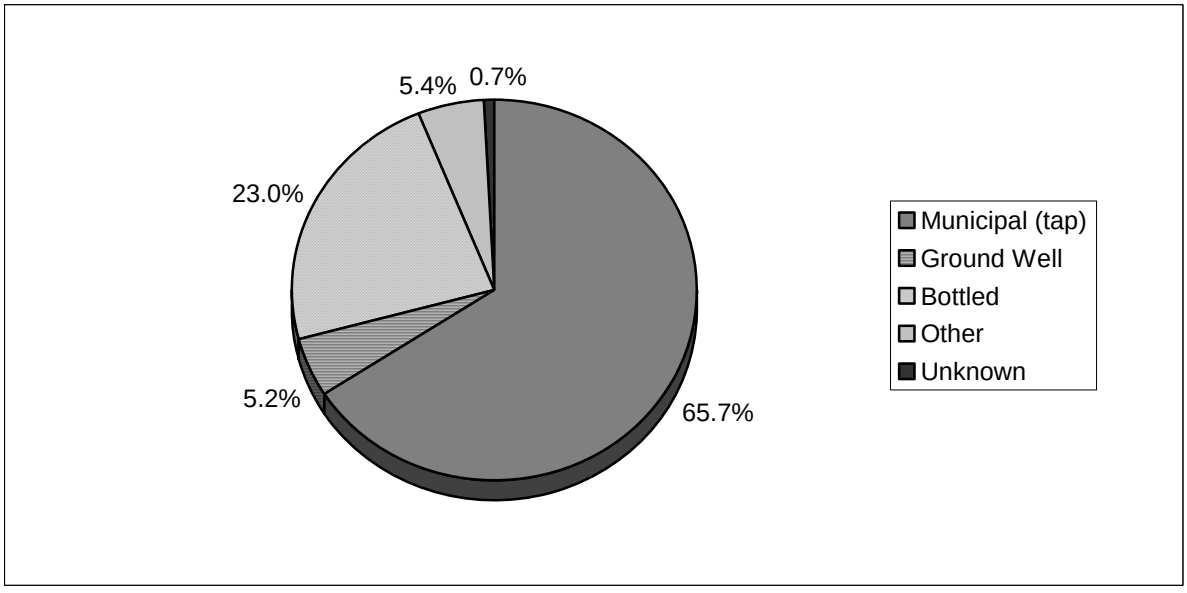

Figure K-3-2 Drinking water source - general public

K-3.2 Local food consumption profile

Section K-3.2 reports consumption patterns of the general public based on the number of times they eat local fruit, vegetables, fish and wild game, as well as the seasonally specific nature of consumption. For fruits and vegetables, the average consumption patterns are reported for all consumers[1].

K-3.2.1 Local vegetable/fruit consumption

The section identifies the species of local fruit and vegetables commonly consumed and reports how often residents consumed them.

What types of local fruit and vegetables are people eating?

From interviews with 426 households in the community, it was reported that 47 species of local fruit and vegetables were consumed. Table K3.2 displays the 18 types of local fruit and vegetables that were consumed by more than 25% of respondents. The three most common types of local fruit and vegetables consumed were wild blueberries, potatoes, and cultivated strawberries.

Table K3.2 Local Vegetable Consumption

Vegetable	Households (n=426)	
	#	%
Wild Blueberries	390	91.5%
Potatoes	359	84.3%
Cultivated Strawberries	333	78.2%
Tomatoes	322	75.6%
Cucumbers	288	67.6%
Rhubarb	283	66.4%
Green and Yellow Beans	277	65.0%
Carrots	246	57.7%
Corn	239	56.1%
Green Onions	229	53.8%
Lettuce and Spinach	205	48.1%
Herbs (e.g. chives, parsley, thyme)	189	44.4%
Zucchini and Squash	164	38.5%
Radishes	156	36.6%
Raspberries	148	34.7%
Wild Strawberries	134	31.5%
Peppers	131	30.8%
Apples	131	30.8%
Onions	126	29.6%

[1] The "average" respondent is the median based on all people who consumed the species.

What are the characteristics of local fruit and vegetables consumption?

Local wild blueberries were reported to be the most commonly consumed local fruit/vegetable (91.5%). When respondents were asked how often they eat local fruit and vegetables the average household reported having wild blueberries 12 times per year (Table K3.4). The highest proportions of wild blueberries were consumed in summer.

Local potatoes were reported to be the second most commonly consumed local fruit/vegetable (84.3%). When respondents were asked how often they eat local fruit and vegetables the average household reported having local potatoes 36 times per year (Table K3.3). High proportions of local potatoes were consumed in summer and fall.

Local cultivated strawberries were reported to be consumed by almost eighty percent (78.2%) of households. When respondents were asked how often they eat local fruit and vegetables the average household reported having local cultivated strawberries 12 times per year (Table K3.3). The highest proportions of local cultivated strawberries were consumed in summer.

Other locally grown foods that were reported to be consumed by at least 50% of households include: tomatoes, cucumbers, rhubarb, green and yellow beans, carrots, corn, and green onions (Tables K3.3 and K3.4).

- Local tomatoes were consumed by more than three quarters of households (75.6%) in the last 12 months. When respondents were asked how often they eat local fruit and vegetables the average household reported having local tomatoes 20 times per year (Table K3.4). The highest proportions of local tomatoes were consumed in summer.

- Local cucumbers were consumed by just fewer than seventy percent of households (67.6%) in the last 12 months. When respondents were asked how often members of their household eat local fruit and vegetables the average household reported having local cucumbers 16 times per year. The highest proportions of local cucumbers were consumed in summer.

- Local rhubarb was consumed by just fewer than seventy percent of households (66.4%) in the last 12 months. When respondents were asked how often members of their household eat local fruit/vegetables, the average household reported having four servings of local rhubarb per year. The highest proportions of local rhubarb were consumed in summer.

- Local green and yellow beans were consumed by sixty-five percent of households (65%) in the last 12 months. When respondents were asked how often members of their household eat local fruit and vegetables, the average household reported having eight servings of local green and yellow beans per year. The highest proportions of local green and yellow beans were consumed in summer.

- Local carrots were consumed by just fewer than sixty percent of respondents (57.7%) in the last 12 months. When respondents were asked how often they eat local fruit/vegetables, the average household reported having eight servings of local carrots per year. The highest proportions of local carrots were consumed in summer.

- Local corn was consumed by more than fifty-five percent of respondents (56.1%) in the last 12 months. When respondents were asked how often members of their household eat local fruit and vegetables, the average household reported having four servings of local corn per year. The highest proportions of local corn were consumed in summer.

- Local green onions were consumed by just fewer than fifty-five percent of respondents (53.8%) in the last 12 months. When respondents were asked how members of their household eat local fruit and vegetables, the average household reported having 12 servings of local green onions per year. The highest proportions of local green onions were consumed in summer.

Table K3.3 Local Vegetables - Number of Times Consumed per Year

Vegetable	# of Households	Mean	Median	Minimum	Maximum	Standard Deviation
Potatoes	Last 12 months (n=359)	43	36	1	135	30.66
	Spring (n=255)	13.3	12	1	88	9.14
	Summer (n=328)	13.1	12	1	30	7.42
	Fall (n=324)	13	12	1	88	8.79
	Winter (n=276)	12.9	12	1	35	7.78
Cucumbers	Last 12 months (n=288)	19.7	16	1	90	15.68
	Spring (n=31)	8.1	6	1	25	6.56
	Summer (n=280)	15.3	12	1	31	9.65
	Fall (n=77)	11.8	10	1	31	8.37
	Winter (n=31)	7.5	6	1	20	5.12
Rhubarb	Last 12 months (n=283)	9.2	4	1	120	15.63
	Spring (n=121)	4.6	3	1	30	5.84
	Summer (n=266)	4.6	3	1	63	6.37
	Fall (n=116)	4	2	1	30	5.33
	Winter (n=99)	3.8	2	1	30	5.67
Green and Yellow Beans	Last 12 months (n=277)	10.1	8	1	120	11.77
	Spring (n=44)	5.6	4	1	30	6.18
	Summer (n=269)	6.9	5	1	30	5.23
	Fall (n=81)	6	4	1	30	4.75
	Winter (n=46)	5	4	1	30	4.51
Carrots	Last 12 months (n=246)	14.1	8	1	112	16.26
	Spring (n=35)	9.5	8	1	28	6.56
	Summer (n=234)	8.5	5	1	30	7.26
	Fall (n=94)	8.8	8	1	30	6.76
	Winter (n=45)	7.4	6	1	28	5.58
Corn	Last 12 months (n=239)	5.9	4	1	47	6.02
	Spring (n=4)	3.3	4	1	4	1.50
	Summer (n=219)	5.1	4	1	30	4.59
	Fall (n=46)	5.1	4	1	21	4.44
	Winter (n=6)	4.5	4	1	8	2.95
Green Onions	Last 12 months (n=229)	21.3	12	1	120	23.56
	Spring (n=55)	14.2	12	1	30	10.20
	Summer (n=221)	13.3	10	1	30	9.94
	Fall (n=59)	13.1	12	1	30	9.59
	Winter (n=31)	11.8	8	1	30	9.94

Table K3.4 Local Fruit - Number of Times Consumed per Year

Vegetable	# of Households	Mean	Median	Minimum	Maximum	Standard Deviation
Wild Blueberries	Last 12 months (n=390)	19.2	12	1	120	19.59
	Spring (n=206)	4.4	2	1	30	5.34
	Summer (n=388)	10.6	8	1	20	9.30
	Fall (n=259)	5.6	3	1	30	6.39
	Winter (n=224)	4.7	2	1	30	5.63
Cultivated Strawberries	Last 12 months (n=333)	18.2	12	1	120	20.78
	Spring (n=144)	6.2	4	1	30	6.94
	Summer (n=328)	9.7	6	1	30	8.36
	Fall (n=170)	6.1	4	1	44	7.12
	Winter (n=157)	5.7	3	1	30	6.69
Tomatoes	Last 12 months (n=322)	25.6	20	1	120	22.03
	Spring (n=48)	8.9	4	1	30	9.27
	Summer (n=308)	17.3	16	1	60	10.57
	Fall (n=136)	15.1	12	1	31	10.40
	Winter (n=51)	8.5	6	1	30	8.14

K-3.2.2 Local fish consumption

What types of local fish are people eating?

From interviews with 426 households, it was reported that 11 species of local fish were consumed. Of the 11 species, four were reported to be consumed by at least 20% of households. The most commonly consumed species were walleye, trout, pike and perch (Table K3.5).

Table K3.5 Local Fish Consumption

Species	Number of Households (N=426)	Percent (%) of Respondents
Walleye (pickerel)	220	51.6%
Trout	156	36.6%
Pike	90	21.1%
Perch	88	20.7%
Smallmouth Bass	72	16.9%
Whitefish	22	5.2%
Salmon	18	4.2%
Catfish	6	1.4%
Smelt	4	0.9%
Burbot (Ling)	4	0.9%
Muskellunge	1	0.2%

What are the characteristics of local fish consumption?

Walleye was reported to be the most commonly consumed local fish (51.6%). According to the survey data, the average walleye consumer eats three servings in one year (Table K3.6). The highest proportion of respondents consumed walleye in the summer.

Table K3.6 Walleye - Number of Times Consumed per Year

Category	Number of Households	Mean	Median	Minimum	Maximum	Standard Deviation
Last 12 months	220	5.4	3	1	40	6.69
Spring	71	2.8	2	1	12	2.64
Summer	205	2.9	2	1	30	3.11
Fall	80	2.5	2	1	10	1.8
Winter	84	2.3	2	1	8	1.79

Trout was reported to be the second-most commonly consumed local fish (36.6%). According to the survey data, the average trout consumer eats two servings in one year (Table K3.7). The highest proportion of respondents consumed trout in the summer.

Table K3.7 Trout - Number of Times Consumed per Year

Category	Number of Households	Mean	Median	Minimum	Maximum	Standard Deviation
Last 12 months	156	4.7	2	1	32	6.01
Spring	56	2.2	1	1	8	1.74
Summer	132	2.5	2	1	30	3.12
Fall	50	2.3	1	1	8	1.82
Winter	66	2.4	1	1	8	1.98

Pike was reported to be the third-most commonly consumed local fish (21.1%). According to the survey data, the average pike consumer eats three servings in one year (Table K3.8). The highest proportion of respondents consumed pike in the winter.

Table K3.8 Pike - Number of Times Consumed per Year

Category	Number of Households	Mean	Median	Minimum	Maximum	Standard Deviation
Last 12 months	90	5.9	3	1	112	15.43
Spring	24	1.9	1	1	8	1.68
Summer	83	2.4	2	1	12	1.95
Fall	27	4.8	1	1	88	16.66
Winter	90	5.9	3	1	112	15.43

Perch was reported to be the fourth-most commonly consumed local fish (20.7%). According to the survey data, the average perch consumer eats two servings in one year (Table K3.9). The highest proportion of respondents consumed perch in the summer.

Table K3.9 Perch - Number of Times Consumed per Year

Category	Number of Households	Mean	Median	Minimum	Maximum	Standard Deviation
Last 12 months	88	4	2	1	40	6.52
Spring	18	3.1	1	1	12	3.69
Summer	75	2.5	2	1	20	2.78
Fall	18	2.6	1.5	1	8	2.33
Winter	26	2.4	1	1	9	2.37

K-3.3 Local game consumption

What types of local game are people eating?

It was reported that seven types of game were consumed (Table K3.10) by interviewees in the last 12 months. Of the seven species consumed, three were reported to be consumed by more than 20% of households. The most commonly consumed species are moose, deer and grouse.

Table K3.10 LocalGame Consumption

Species	Number of Households	Percent (%) of Households
Moose	113	26.5
Deer	110	25.8
Grouse	89	20.9
Duck and Geese	24	5.6
Wild Rabbit	21	4.9
Bear	15	3.5
Beaver	4	1

What are the characteristics of local game consumption?

Moose was reported to be the most commonly consumed local game (26.5%). When respondents were asked how often members of their household eat local game the average reported for moose was two times per year (Table K3.11). The highest proportion of households consumed moose in the fall.

Table K3.11 Moose - Number of Times Consumed per Year

Category	Number of Households	Mean	Median	Minimum	Maximum	Standard Deviation
Last 12 months	112	4.5	2	1	55	2.24
Spring	30	2.4	1.5	1	10	2.18
Summer	31	2.6	2	1	15	2.79
Fall	99	2.3	2	1	15	2.24
Winter	48	2.6	2	1	15	2.41

Deer was reported to be the second most commonly consumed local game (25.8%). When respondents were asked how often members of their household eat local game, the average reported for deer was two times per year (Table K3.12). The highest proportion of respondents consumed deer in the fall.

Table K3.12 Deer - Number of Times Consumed per Year

Category	Number of Households	Mean	Median	Minimum	Maximum	Standard Deviation
Last 12 months	110	4.3	2	1	16	4.16
Spring	39	1.9	1	1	4	1.18
Summer	39	1.8	1	1	5	1.13
Fall	93	2	2	1	8	1.31
Winter	61	2	2	1	6	1.37

Grouse was reported to be the third most commonly consumed local game (20.9%). When respondents were asked how often members of their household eat local game the average reported for grouse was two times per year (Table K3.13). The highest proportion of respondents consumed grouse in the fall.

Table K3.13 Grouse - Number of Times Consumed per Year

Category	Number of Households	Mean	Median	Minimum	Maximum	Standard Deviation
Last 12 months	89	2.8	2	1	18	2.93
Spring	9	2.2	1	1	7	1.99
Summer	8	1.5	1	1	3	0.76
Fall	86	2.3	1	1	12	2.17
Winter	16	1.6	1	1	5	1.15

K-4.0 WHITEFISH LAKE FIRST NATION

K-4.1 Community Profile

The food consumption survey involved interviews with 71 of the 110 households (65%) from Whitefish Lake First Nation. The interviews collected household- and individual-level data for 218 individuals (Table K4.1).

Table K4.1 Profile of Respondents – Whitefish Lake First Nation

	Population (on-reserve)[2]	Respondents	Percent of community
Individual	333	218	65%
Household	113	71	65%

The study sampled a wide rage of respondents, cross-cutting all age ranges. With respect to gender distribution, the study collected interview data from 105 male and 113 female respondents. Table K4.2 shows the age distribution of respondents and the proportion of individuals' lives spent in the community. The proportion of life spent in the community was relatively high (81-98%) indicating that the respondents were longer-term residents.

Table K4.2 Profile of Respondents by Age and Years in the Community

Age	Male	Female	Total	Percent of Population	Proportion of life spent in Greater Sudbury (%)	Proportion of life spent at Current Address (%)
0-5	15	17	32	15%	97	84
6-12	13	17	30	14%	98	66
13-17	13	8	21	10%	96	66
18-29	20	24	44	20%	81	42
30-39	22	25	47	22%	83	25
40-49	13	10	23	11%	82	33
50-59	7	9	16	7%	87	38
60+	2	3	5	2%	81	47
Total	105	113	218	100%	88	48

Respondents were asked about household members' participation in hunting, fishing and gardening. A large majority (77%) of households reported to either fish or hunt (Figure K-4.1). Almost all (85%) of the households reported that they had not planted a garden in the past 12 months.

[2] Source: Census 2001 data

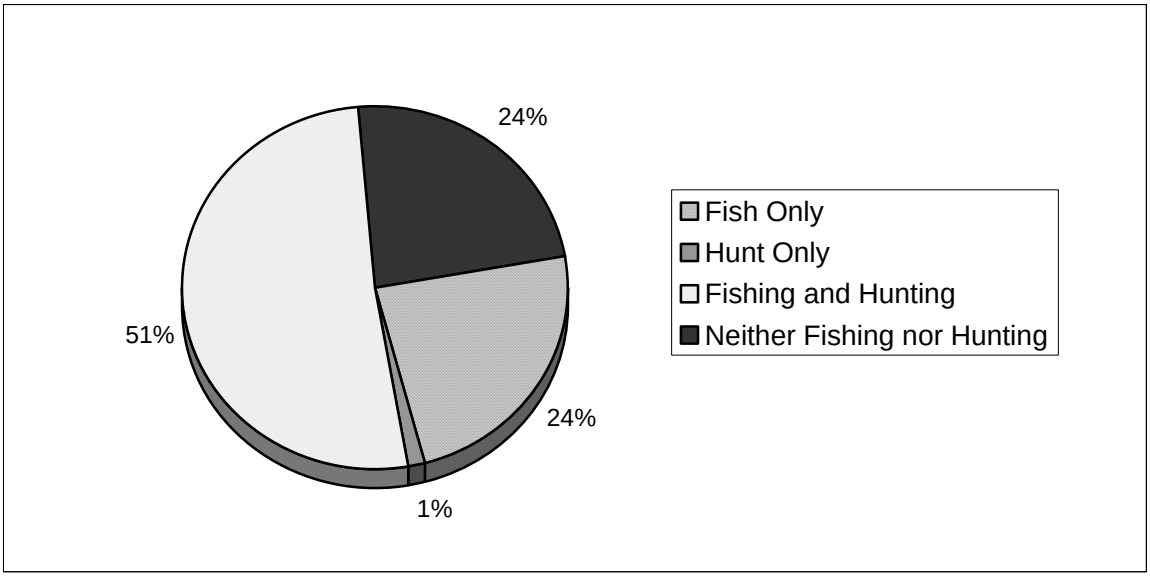

Figure K-4-1 Hunting and fishing activity - Whitefish Lake First Nation (by household)

When asked about sources of local drinking water, most residents (78%) lived in households that rely on the Sudbury municipal water system for drinking water, whereas one percent (1%) use a well system and the remaining twenty-one percent (21%) use bottled water and other systems (Figure K-4.2).

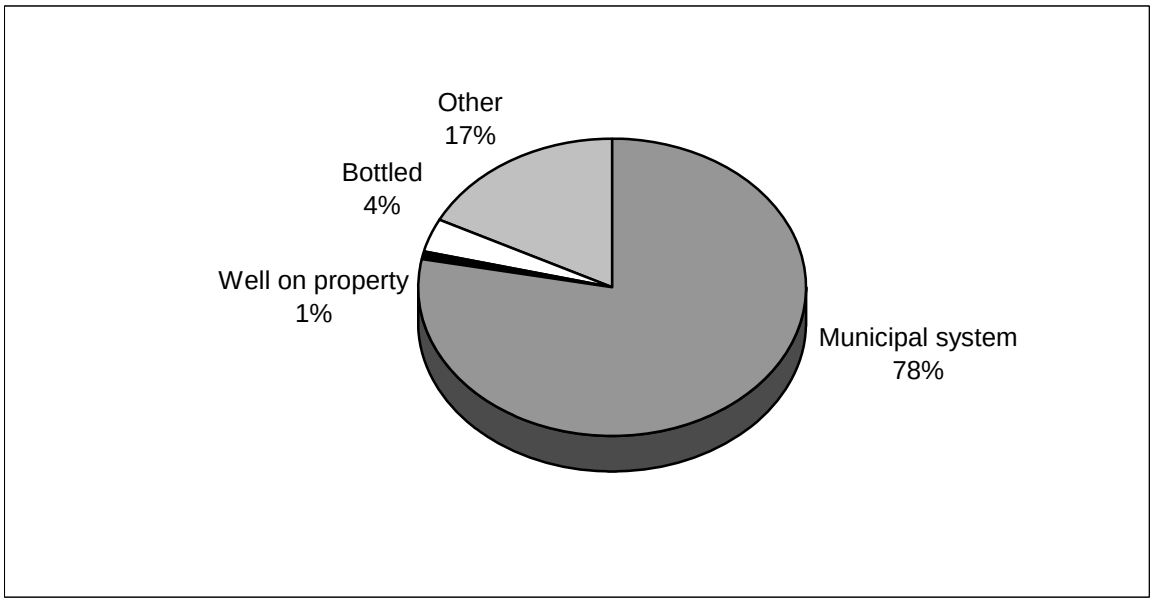

Figure K-4-2 Drinking water source - Whitefish Lake First Nation (by household)

K-4.2 Local vegetable/fruit consumption

Section K-4.2 presents the consumption patterns of local fruit, vegetables, fish, and game reported by residents of Whitefish Lake First Nation. For fruits and vegetables, the average consumption patterns are reported for all consumers[3] and the top 25% of consumers. Total annual consumption is reported as cups per year for fruit and vegetables and pounds per year for fish and game.

What types of local fruit and vegetables are people eating?

From interviews with 218 people in the community, it was reported that 29 species of fruit and vegetables were consumed (Table K4.3). The three most common types of local fruit and vegetables consumed were blueberries, potatoes, and cultivated strawberries. The following vegetables were consumed by more than 50% of the community:

- Blueberries (79%)
- Potatoes (69%)
- Cultivated Strawberries (61%)
- Cucumbers (59%)
- Carrots (54%)
- Corn (52%)
- Tomatoes (52%)

[3] The "average" respondent is the median based on all people who consumed the species.

Table K4.3 Local { TC "Table 1. Timing and primary purpose of field visits" \f F }Fruit and Vegetable Consumption

Vegetable/Fruit	Individual (n=218)	
	#	%
Wild Blueberries	172	79
Potatoes	151	69
Cultivated Strawberries	132	61
Cucumbers	129	59
Carrots	117	54
Corn	113	52
Tomatoes	113	52
Lettuce and Spinach	107	49
Green or Yellow Beans	100	46
Apples	98	45
Wild Strawberries	84	39
Green onions	68	31
Peppers	60	28
Onions (Not Green)	63	29
Plums	45	21
Herbs and Garlic	41	19
Rhubarb	39	18
Other Wild Berries	38	17
Zucchini or Squash	27	12
Cultivated Blueberries	25	12
Radishes	22	10
Wild Mushrooms	6	3
Beets	5	2
Watermelon	4	2
Turnip	3	1
Cabbage	3	1
Celery	3	1
Blackberry	2	0
Cranberry	2	0

What are the characteristics of local fruit and vegetable consumption?[4]

Blueberries were reported to be the most commonly consumed local fruit/vegetable (79%). According to the survey data from members of Whitefish Lake First Nation, the average blueberry consumer eats eight cups of blueberries in one year (Table K4.5). As expected, consumption varied by age group. Children under 6 years of age ate an average of two cups per year, children ages 6 to 12 ate an average of six cups per year and children ages 13 to 17 ate eight cups per year, which matched the average of the adult population. The top 25% of blueberry consumers ate an average of 48 cups per year. The highest proportions of blueberries were consumed in summer. When respondents were asked how often

[4] It should be noted that not all respondents provided age information; therefore it was not possible to include the data for these respondents where information was categorized by age. However, data from these respondents has been included in the "all ages" category.

they eat local fruit and vegetables the average person reported having blueberries six times per year (Table K4.7).

Potatoes were reported to be the second most commonly consumed local fruit/vegetable (69%). Although fewer people consumed potatoes compared to blueberries, potatoes were consumed in much higher quantities. According to the survey data, the average potato consumer eats 100 cups of local potatoes in one year (Table K4.4). Consumption varied by age group. Children under 6 years of age ate an average of 144 cups per year, children ages 6 to 12 ate an average of 72 cups per year and children ages 13 to 17 ate 144 cups per year, exceeding the average of the adult population (96 cups per year). The top 25% of potato consumers ate an average of 336 cups per year. The highest proportions of potatoes were consumed in summer and fall. When respondents were asked how often they eat local fruit and vegetables the average person reported having potatoes 96 times per year (Table K4.6).

Cultivated strawberries were reported to be the third most commonly consumed local fruit/vegetable (61%). According to the survey data, the average local strawberry consumer eats 8.5 cups of cultivated strawberries in one year. Consumption varied by age group. All age groups ate an average of eight cups per year except children 13 to 17 years of age, who ate an average of 16 cups per year (Table K4.5). The top 25% of strawberry consumers ate an average of 16 cups per year. When respondents were asked how often they eat local fruit and vegetables the average person reported having strawberries six times per year (Table K4.7). The highest proportions of cultivated strawberries were consumed in the summer.

Other local foods that were consumed by at least 50% of respondents include cucumbers, carrots, corn and tomatoes (Tables K4.4 to Table K4.7).

- Local cucumbers were consumed by just fewer than sixty percent of respondents (59%). According to the survey data from members of Whitefish Lake First Nation, the average cucumber consumer eats 12 cups of cucumbers in one year. Consumption varied by age group. Children under 6 years of age ate an average of seven cups per year, children ages 6 to 12 ate an average of 10.5 cups per year and children ages 13 to 17 ate 16 cups per year, which exceeded the average of the adult population (12 cups per year). The top 25% of cucumber consumers ate an average of 34 cups per year. When respondents were asked how often they eat local fruit and vegetables, the average person reported having cucumbers 12 times per year. The highest proportions of cucumbers were consumed in summer.

- The average carrot consumer eats 16 cups in one year. Consumption varied by age group. Children under 6 years of age ate an average of 40 cups per year, children ages 6 to 12 ate an average of 12 cups per year and children ages 13 to 17 ate 30 cups per year, which exceeded the average of the adult population (16 cups per year). The top 25% of carrot consumers ate an average of 101.5 cups per year. When respondents were asked how often they eat local fruit and vegetables, the average person reported having carrots 20 times per year. The highest proportions of carrots were consumed in summer and fall.

- The average corn consumer eats 24 cobs of corn in one year. Consumption varied by age group. Children under 6 years of age ate an average of 24 cobs per year, children ages 6 to 12 ate an average of 12.5 cobs per year, children ages 13 to 17 ate 16 cobs per year, and the average adult consumed 24 cobs of corn per year. The top 25% of corn consumers ate an average of 72 cobs per year. When respondents were asked how often they eat local fruit and vegetables the average person reported having corn eight times per year. The highest proportions of corn were consumed in the summer.

- Tomatoes were also reported to be consumed in significant proportions. According to the survey data, the average tomato consumer eats 20 cups of tomatoes in one year. Consumption varied by age group. Children under 6 years of age ate an average of 20 cups per year, children ages 6 to 12 ate an average of 16 cups per year and children ages 13 to 17 ate 20 cups per year, which exceeded the average of the adult population (18 cups per year). The top 25% of tomato consumers ate an average of 120 cups per year. When respondents were asked how often they eat local fruits and vegetables, the average person reported having tomatoes 20 times per year. The highest proportions of tomatoes were consumed in the summer.

Table K4.4 Local Vegetable Consumption (Cups per Year)

Vegetable	Age Group	Category	Mean	Median	Minimum	Maximum	Standard Deviation
Potatoes	0-5	Annual (n=11)	160.2	144	18	288	109.66
	6-12	Annual (n16)	116.1	72	16	336	108.28
	13-17	Annual (n=16)	170.3	144	4	560	134.5
	18+	Annual (n=83)	136.5	96	4	560	132.35
	All Ages	Annual (n=151)	156.5	100	4	576	149.05
		Spring (n=107)	54.2	48	2	150	38.92
		Summer (n=147)	45.8	36	3	144	36.68
		Fall (n=116)	48.8	36	3	150	38.10
		Winter (n=104)	52.3	48	3	150	38.67
		Top 25% of Consumers (n=23)	390	336	288	576	122.17
Cucumbers	0-5	Annual (n=13)	15	7	1	60	21
	6-12	Annual (n=14)	11.8	10.5	1	32	8.7
	13-17	Annual (n=15)	18.7	16	1	48	15.4
	18+	Annual (n=77)	15.8	12	1	60	15.2
	All Ages	Annual (n=129)	15.3	12	1	60	15.5
		Spring (n=22)	5.2	4	0.75	12	3.64
		Summer (n=129)	12.2	8	0.75	60	14.26
		Fall (n=40)	5.5	5	0.75	12	3.45
		Winter (n=14)	5.1	3	0.75	12	4.15
		Top 25% of Consumers (n=32)	38.5	34	24	60	12.09
Carrots	0-5	Annual (n=8)	84.9	40	4	240	99.24
	6-12	Annual (n=13)	21.4	12	2	78	23.13
	13-17	Annual (n=10)	54.3	30	4	150	54.18
	18+	Annual (n=69)	37.6	16	1	240	52.41
	All Ages	Annual (n=113)	38.7	16	1	240	53.36
		Spring (n= 35)	21.1	12	3	60	17.71
		Summer (n=102)	19.3	12	1	87	21.16
		Fall (n=61)	14.4	8	1	60	15.79
		Winter (n=35)	22.7	12	3	60	17.92
		Top 25% of Consumers (n=22)	128.5	101.5	60	240	60.58
Corn (reported in cobs)	0-5	Annual (n=13)	47.8	24	4	200	69.07
	6-12	Annual (n=16)	12.9	12.5	4	30	8.19
	13-17	Annual (n=9)	21.3	16	4	64	17.78
	18 +	Annual (n=63)	39.1	24	4	336	65
	All Ages	Annual (n=113)	37.2	24	4	336	57.73
		Spring (n=5)	52.8	32	32	84	28.48
		Summer (n=113)	29.3	16	2	200	40.23
		Fall (n=42)	10.7	4	2	84	17.59
		Winter (n=2)	84	84	84	84	0
		Top 25% of Consumers (n=25)	112.5	72	40	336	87.15
Lettuce and Spinach	0-5	Annual (n=9)	55.9	30	1	120	49.8
	6-12	Annual (n=15)	24.7	12	1	144	36.3
	13-17	Annual (n=11)	60.9	30	12	162	62.6
	18 +	Annual (n=60)	39.8	18	1	162	44.5
	All Ages	Annual (n=107)	39.6	18	1	162	44.61
		Spring (n=22)	16.5	9	1	40.5	15.68
		Summer (n=103)	24.7	12	2	96	25.73

		Fall (n=56)	16.8	10	1	48	15.27
		Winter (n=17)	22.6	12	3	108	27.11
		Top 25% of Consumers (n=20)	123.2	120	52	162	31.89

Table K4.5 Local Fruit Consumption (Cups per Year)

Fruit	Age Group	Category	Mean	Median	Minimum	Maximum	Standard Deviation
Wild Blueberries	0-5	Annual (n=19)	16.9	2	1	120	36.62
	6-12	Annual (n=25)	17.7	6	1	120	27.49
	13-17	Annual (n=13)	22.3	8	1	67.5	23.18
	18+	Annual (n=89)	22.2	8	0.5	288	44.18
	All Ages	Annual (n=172)	21.2	8	0.5	288	37.97
		Spring (n=15)	17.7	6	3	72	21.6
		Summer (n=162)	13.9	8	0.5	80	17.59
		Fall (n=36)	22.8	24	3	72	16.94
		Winter (n=18)	16.9	7.5	1	72	20.65
		Top 25% of Consumers (n=43)	66.2	48	18	288	55.08
Cultivated Strawberries	0-5	Annual (n=16)	6.3	8	2	12	3.94
	6-12	Annual (n=17)	6.8	8	2	12	4.3
	13-17	Annual (n=12)	13.8	16	2	18	5.66
	18+	Annual (n=65)	11.1	8	1	90	13.02
	All Ages	Annual (n=132)	10.1	8.5	1	90	10.12
		Spring (n=24)	4.4	4	3	22.5	3.9
		Summer (n=132)	7.7	6	1	48	6.83
		Fall (n=27)	5.4	4.5	2	22.5	4.02
		Winter (n=14)	4.9	3	3	22.5	5.11
		Top 25% of Consumers (n=27)	22.4	16	16	90	16.08
Tomatoes	0-5	Annual (n=11)	26.5	20	2	48	17.84
	6-12	Annual (n=13)	43.2	16	2	240	64.74
	13-17	Annual (n=11)	32.9	20	2	96	32.59
	18+	Annual (n=64)	36.5	18	2	240	53.54
	All Ages	Annual (n=111)	45.2	20	2	240	63.67
		Spring (n=31)	20.8	12	3	60	19.6
		Summer (n=111)	26.4	15	2	240	43.79
		Fall (n=47)	17.6	12	3	60	16.42
		Winter (n=25)	24.6	24	3	60	20.01
		Top 25% of Consumers (n=19)	164.8	120	60	240	74.17

Table K4.6 Local { TC "Table 1. Timing and primary purpose of field visits" \f F }Vegetables - Number of Times Consumed per Year

Vegetable	# of Respondents	Mean	Median	Minimum	Maximum	Standard Deviation
Potatoes	Last 12 months (n=151)	107.4	96	4	336	89.67
	Spring (n=107)	37.9	36	1	96	24.55
	Summer (n=147)	31.3	30	3	84	21.2
	Fall (n=116)	33.3	30	3	84	21.94
	Winter (n=104)	35.4	36	3	84	22.14
Cucumbers	Last 12 months (n=129)	16.6	12	1	64	16
	Spring (n=22)	5.1	3	2	12	4
	Summer (n=129)	13	9	1	60	14
	Fall (n=40)	6.8	5	3	16	4
	Winter (n=18)	5.6	3	3	12	4
Carrots	Last 12 months (n=117)	36.8	20	2	300	58.27
	Spring (n=39)	20.3	12	3	75	21
	Summer (n=106)	16.5	12	2	75	15.62
	Fall (n=65)	14.2	8	2	75	18
	Winter (n=39)	21.7	12	3	75	21
Corn (reported in cobs)	Last 12 months (n=113)	12.4	8	1	84	14
	Spring (n=5)	13.2	8	8	21	7
	Summer (n=113)	10.2	6	1	50	11
	Fall (n=42)	3.4	3	1	21	4
	Winter (n=2)	21	21	21	21	0
Lettuce and Spinach	Last 12 months (n=107)	35.8	24	1	216	46.18
	Spring (n=22)	18.8	10.5	1	54	20
	Summer (n=103)	21	15	2	90	20.77
	Fall (n=56)	16.2	12	1	54	14
	Winter (n=17)	20.5	9	3	54	21

Table K4.7 Local Fruit - Number of Times Consumed per Year

Fruit	# of Respondents	Mean	Median	Minimum	Maximum	Standard Deviation
Wild Blueberries	Last 12 months (n=172)	10.7	6	1	144	17
	Spring (n15)	9.3	4	2	36	11
	Summer (n=162)	7.5	6	1	36	7
	Fall (n=36)	9.3	8	1	36	7
	Winter (n=18)	8.9	6	1	36	10
Cultivated Strawberries	Last 12 months (n=132)	8.5	6	1	36	8
	Spring (n=24)	4.9	4	3	9	3
	Summer (n=132)	5.9	4	1	24	4
	Fall (n=27)	5	4	2	9	2
	Winter (n=14)	5.8	4.5	3	9	3
Tomatoes	Last 12 months (n=113)	40.9	20	2	240	57
	Spring (n=32)	22.8	12	2	60	22
	Summer (n=113)	20.1	18	2	60	16
	Fall (n=48)	18.9	11	2	60	19
	Winter (n=25)	28.4	24	3	60	22

K-4.3 Local fish consumption

What types of local fish are people eating?

Eight species of fish were reported to be consumed by respondents from Whitefish Lake First Nation. Of the eight species, three were reported to be consumed by at least 40% of respondents. The most commonly consumed species were pike, walleye (pickerel), and bass respectively (Table K4.8).

Table K4.8 Local Fish Consumption

Species	Number of Individual Respondents	Percent (%) of Respondents
Pike	93	42.7
Walleye (pickerel)	91	41.7
Bass	91	41.7
Smelt	43	19.7
Whitefish	26	11.9
Perch	24	11
Trout	23	10.6
Ling	1	0.5

What are the characteristics of local fish consumption?

Pike was reported to be the most commonly consumed local fish (42.7%). According to the survey data, the average pike consumer eats six pounds of pike in one year (Table K4.9). Consumption varied by age group. Children under six years of age ate an average of 10 pounds per year, children ages 6 to 12 ate an average of nine pounds per year, children ages 13 to 17 ate three pounds per year, and the adult population ate an average of six pounds per year. The top 25% of pike consumers ate an average of 12 pounds per year. The highest proportion of respondents consumed pike in the summer. When respondents were asked how often they eat local fish the average person reported having pike six times per year (Table K4.10).

Table K4.9 Pike Consumption (Pounds per Year)

Age group	Category	Number of Respondents	Mean	Median	Minimum	Maximum	Standard Deviation
0-5	Annual	6	8.8	10	3	10	2.9
6-12	Annual	10	10.9	9	1	48	13.7
13-17	Annual	9	2.8	3	1.25	4	1.3
18+	Annual	60	8.2	6	0.5	48	10.2
All ages	Annual	91	8.3	6	0.5	48	9.6
	Spring	42	2.9	2	0.25	12	3.3
	Summer	77	4.5	4	0.5	12	3
	Fall	47	3.1	2	0.25	12	3
	Winter	32	4.5	3	0.75	12	4
	Top 25% of Consumers	19	20.8	12	10.5	48	14.82

Table K4.10 Pike - Number of Times Consumed per Year

Category	Number of Respondents	Mean	Median	Minimum	Maximum	Standard Deviation
Last 12 months	91	10.2	6	1	48	10
Spring	42	3.8	3	1	12	3
Summer	77	5.5	6	1	15	3
Fall	47	3.9	3	1	12	3
Winter	32	5	3	2	12	4

Walleye (pickerel) was reported to be the second-most commonly consumed local fish (41.7%). According to the survey data, the average walleye consumer eats six pounds of walleye in one year (Table K4.11). Consumption varied by age group. Children under 6 years of age ate an average of five pounds per year, children ages 6 to 12 ate an average of two pounds per year, children ages 13 to 17 ate

2.5 pounds per year, the adult population ate an average of six pounds per year. The top 25% of walleye consumers ate an average of 27 pounds per year. The highest proportion of respondents consumed walleye in the summer; however significant consumption also occurs in spring and fall. When respondents were asked how often they eat local fish the average person reported having walleye eight times per year (Table K4.12).

Table K4.11 Walleye Consumption (Pounds per year)

Age group	Category	Number of Respondents	Mean	Median	Minimum	Maximum	Standard Deviation
0-5	Annual	7	5.9	5	.5	10	4.2
6-12	Annual	12	4	2	.5	12	3.9
13-17	Annual	8	6.3	2.5	1	24	8.1
18+	Annual	54	9.6	6	.5	48	11.4
All ages	Annual	91	13.2	6	.5	96	22.3
	Spring	61	4.4	2	.5	24	6.4
	Summer	74	5.6	3	.5	24	7.08
	Fall	51	5.7	2	.5	24	7.35
	Winter	38	5.8	2	1	24	7.8
	Top 25% of Consumers	18	46.2	27	16	96	33.5

Table K4.12 Walleye - Number of Times Consumed per Year

Category	Number of Respondents	Mean	Median	Minimum	Maximum	Standard Deviation
Last 12 months	91	14.2	8	1	96	22
Spring	61	4.9	3	1	24	6
Summer	74	6.1	3	1	24	7
Fall	51	6	3	1	24	7
Winter	38	6.3	3	1	24	8

Bass was reported to be the third-most commonly consumed local fish (41.7%). Although the same number of people consumed bass and walleye, bass is consumed in smaller quantities. According to the survey data, the average bass consumer eats four pounds of bass in one year (Table K4.13). Consumption varied by age group. Children under 6 years of age ate an average of 10 pounds per year, children ages 6 to 12 ate an average of nine pounds per year, and children ages 13 to 17 ate three pounds per year, while the adult population ate an average of six pounds per year. The top 25% of bass consumers ate approximately 13.5 pounds per year. The highest proportion of respondents consumed bass in the summer. When respondents were asked how often they eat local fish the average person reported having bass six times per year (Table K4.14).

Table K4.13 Bass Consumption (Pounds per Year)

Age group	Category	Number of Respondents	Mean	Median	Minimum	Maximum	Standard Deviation
0-5	Annual	6	8.8	10	3	10	2.9
6-12	Annual	10	10.9	9	1	48	13.7
13-17	Annual	9	2.7	3	1.3	4	1.3
18+	Annual	60	8.2	6	.5	48	10.2
All ages	Annual	84	7.9	4	.5	48	10
	Spring	29	3.3	2	.25	12	6.7
	Summer	84	4.1	3	.5	12	3
	Fall	43	3.2	2	.25	12	3
	Winter	21	4.2	3	.25	12	4
	Top 25% of Consumers	18	21	13.5	12	48	14.9

Table K4.14 Bass - Number of Times Consumed per Year

Category	Number of Respondents	Mean	Median	Minimum	Maximum	Standard Deviation
Last 12 months	87	9.2	6	1	48	10
Spring	29	3.8	3	1	12	4
Summer	87	4.8	4	1	15	3
Fall	46	3.7	3	1	12	3
Winter	21	4.6	3	2	12	4

K-4.4 Local game consumption

What types of local game are people eating?

Nine types of game and other local food[5] were reported to be consumed by members of Whitefish Lake First Nation. Of the nine species consumed, three were consumed by more than 40% of respondents - moose, deer and grouse (Table K4.15).

[5] "Other local food" refers to local eggs beef, chicken and pork. The survey asked about consumption of other food to ensure that all local food was considered in the study. Less than 10% of respondents reported consuming other local food.

Table K4.15 Local Game Consumption

Species	Number of Individual Respondents	Percent (%) of Respondents
Moose	149	68.3
Deer	96	44
Grouse	89	40.8
Wild Rabbit	20	9.2
Ducks or Geese	19	8.7
Beef	17	7.8
Pork	14	6.4
Chicken	14	6.4
Eggs	8	3.7

What are the characteristics of local game consumption?

Moose was reported to be the most commonly consumed local game (68.3%). According to the survey data, the average moose consumer eats six pounds of moose in one year (Table K4.16). Consumption varied by age group. Children under 6 years of age ate an average of 11 pounds per year, children ages 6 to 12 ate an average of eight pounds per year, children ages 13 to 17 ate six pounds per year, and the adult population ate an average of six pounds per year. The top 25% of moose consumers ate an average of 48 pounds per year. The highest proportion of respondents consumed moose in the fall. When respondents were asked how often they eat local game the average person reported having moose 12 times per year (Table K4.17).

Table K4.16 Moose Consumption (Pounds per Year)

Age group	Category	Number of Respondents	Mean	Median	Minimum	Maximum	Standard Deviation
0-5	Annual	12	14.4	11	1	60	16.8
6-12	Annual	22	18.2	8	1	96	26.3
13-17	Annual	17	8.6	6	1.5	48	10.9
18+	Annual	80	14	6	.25	144	23.6
All ages	Annual	148	16.7	6	.25	144	26.61
	Spring	42	9.5	6	.75	36	12.36
	Summer	60	6.5	7.8	.75	36	7.8
	Fall	139	6.6	4	.25	36	8.1
	Winter	97	7.9	4	.25	36	10
	Top 25% of Consumers	31	55.4	48	24	144	37.5

Table K4.17 Moose - Number of Times Consumed per Year

Category	Number of Respondents	Mean	Median	Minimum	Maximum	Standard Deviation
Last 12 months	149	18.5	12	1	144	23
Spring	42	9.1	6	2	36	9
Summer	61	6.8	4	1	36	8
Fall	140	7.7	7	1	36	6
Winter	97	9.2	6	1	36	8

Deer was reported to be the second-most commonly consumed local game (44%). According to the survey data, the average deer consumer eats just under five (median=4.8) pounds of deer in one year (Table K4.18). Consumption varied by age group. Children under 6 years of age ate an average of 16 pounds per year, children ages 6 to 12 ate an average of 4.8 pounds per year, and children ages 13 to 17 ate three pounds per year, while the adult population ate an average of four pounds per year. The top 25% of deer consumers ate an average of 48 pounds per year. The highest proportions of deer were consumed in fall and winter. When respondents were asked how often they eat local game the average person reported having deer 12 times per year (Table K4.19).

Table K4.18 Deer Consumption (Pounds per year)

Age group	Category	Number of Respondents	Mean	Median	Minimum	Maximum	Standard Deviation
0-5	Annual	9	16.8	16	.31	48	18.9
6-12	Annual	12	16.1	4.8	.31	72	26.4
13-17	Annual	10	8	3	1.5	48	14.2
18+	Annual	57	12.1	4	.25	72	18.7
All ages	Annual	96	12.7	4.8	.25	72	18.59
	Spring	27	8.2	6	.38	27	8.86
	Summer	31	4.6	3	.75	12	3.72
	Fall	83	44.7	2.5	.25	16	4.47
	Winter	70	6.7	3	.25	45	9
	Top 25% of Consumers	17	48.2	48	20	72	17.5

Table K4.19 Deer - Number of Times Consumed per Year

Category	Number of Respondents	Mean	Median	Minimum	Maximum	Standard Deviation
Last 12 months	96	16.5	12	1	144	23
Spring	27	8	6	1	36	9
Summer	31	5.9	3	1	36	9
Fall	83	7.5	5	1	36	8
Winter	70	8	6	1	36	8

Grouse was reported to be the third-most commonly consumed local game (40.8%). According to the survey data, the average grouse consumer eats two pounds of grouse in one year (Table K4.20). Consumption varied by age group. On average, children under 6 years of age ate just under one (median=0.75) pound per year, children ages 6 to 12 ate an average of two pounds per year, children ages 13 to 17 ate four pounds per year, and the adult population ate an average of two pounds per year. The top 25% of grouse consumers ate an average of eight pounds per year. The highest proportions of grouse were consumed in fall. When respondents were asked how often they eat local game, the average person reported having grouse four times per year (Table K4.21).

Table K4.20 Grouse Consumption (Pounds per Year)

Age group	Category	Number of Respondents	Mean	Median	Minimum	Maximum	Standard Deviation
0-5	Annual	8	.8	.75	.25	2	.54
6-12	Annual	13	2.7	2	.25	8	2.8
13-17	Annual	6	2.9	4	.25	4	1.8
18+	Annual	57	3	2	.25	24	3.6
All ages	Annual	88	2.8	2	.25	24	3.2
	Spring	2	3.8	3.75	1.5	6	3.18
	Summer	5	3.5	4	1.5	6	1.8
	Fall	80	2.4	2	.25	8	2.11
	Winter	19	1.5	1	.38	6	1.27
	Top 25% of Consumers	13	8.5	8	6	24	4.5

Table K4.21 Grouse - Number of Times Consumed per Year

Category	Number of Respondents	Mean	Median	Minimum	Maximum	Standard Deviation
Last 12 months	89	4.1	4	1	24	4
Spring	2	6	6	6	6	0
Summer	5	4.4	4	2	6	2
Fall	81	3.7	4	1	12	2
Winter	19	1.8	1	1	6	2

K-5.0 HUNTERS AND ANGLERS

K-5.1 Population Profile

Interviews were conducted with 29 households, representing 70 respondents (40 males and 30 females). The interviews collected household data as well as individual-level data. Table K5.1 shows the age distribution of respondents.

Table K5.1 Profile of Respondents – Hunters and Anglers

Age	Male	Female	Total	Percent of Population
0-5	2	2	4	6%
6-12	3	0	3	4%
13-17	4	2	6	9%
18-29	7	2	9	13%
30-39	2	5	7	10%
40-49	7	7	14	20%
50-59	7	8	15	21%
60+	8	4	12	17%
Total	40	30	70	100%

Respondents were asked about household members' participation in hunting, fishing and gardening. A large majority of households (79%) reported that they both fish and hunt, while less than one quarter (21%) reported that they only fish (Figure K-5-1). In response to questions about gardening activity more than half (55%) of the households reported to have planted a garden in the last 12 months (Figure K-5-2).

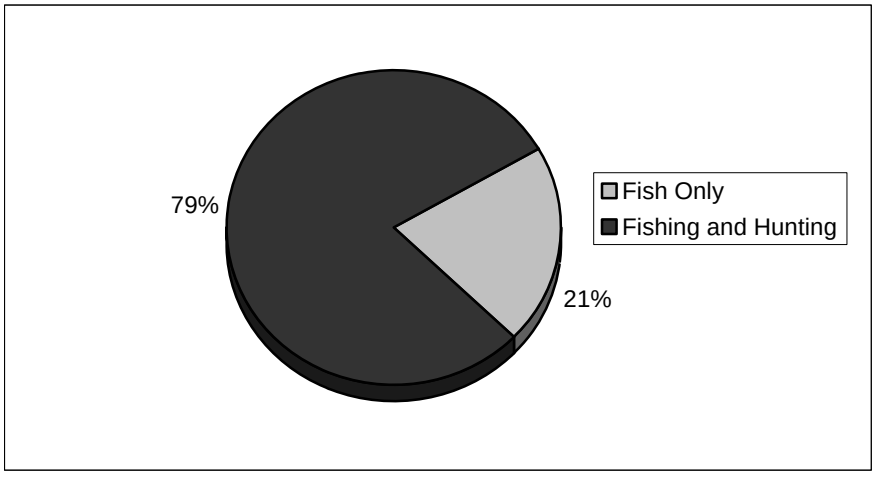

Figure K-5-1 Hunting and fishing activity - hunters and anglers (by household)

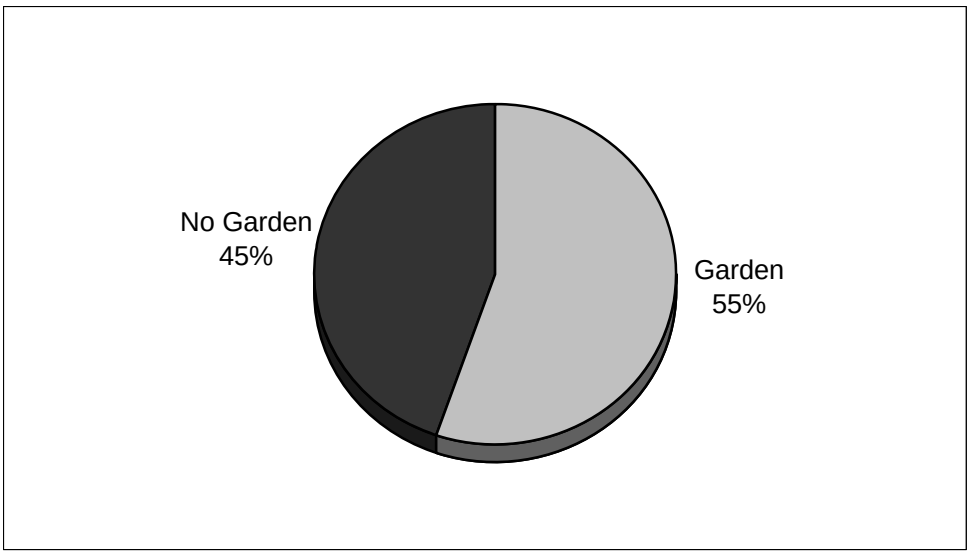

Figure K-5-2 Gardening activity - hunters and anglers (by household)

When asked about source of local drinking water a large majority of households (72.4%) reported to be on the municipal water supply (Figure K-5-3). Well and bottled water were equally reported as the second-most common water sources (10.3%) for the hunter and angler sub-group.

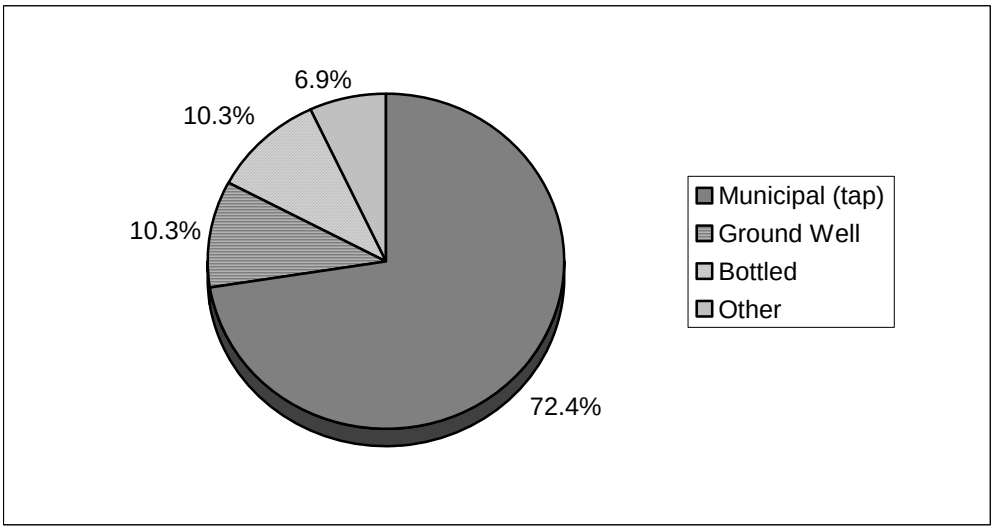

Figure K-5-3 Drinking water source - hunters and anglers (by household)

K-5.2 Local food consumption profile

The section identifies the species of local fish and game commonly consumed and reports how often residents consume them, as well as the seasonality of consumption. The average consumption patterns are reported for all consumers[6] and the top 25% of consumers.

K-5.2.1 Local Fish Consumption

What types of local fish are people eating?

Local hunters and anglers reported consuming nine species of fish. Of the nine species, three were consumed by close to half (48%) of respondents - walleye (pickerel), pike, and perch (Table K5.2).

Table K5.2 Local Fish Consumption

Species	Number of Individual Respondents (N=71)	Percent (%) of Respondents
Walleye (pickerel)	55	77.5
Pike	35	49.3
Perch	34	47.9
Trout	24	33.8
Bass	14	19.7
Speckle	8	11.3
Rainbow	4	5.6
Catfish	3	4.2
Whitefish	4	5.6

Walleye (pickerel) was reported to be the most commonly consumed local fish (77.5%) among local anglers and hunters. According to the survey data, the average walleye consumer eats nine pounds of walleye in one year (Table K5.3). The average child[7] ate five pounds of walleye in one year whereas the average adult ate just under eleven (median=10.8) pounds per year. The top 25% of walleye consumers ate an average of 97 pounds per year. When respondents were asked how often they eat local fish the average person reported having walleye between eight and nine (median=8.5) times per year (Table K5.4). The highest proportions of walleye were consumed in the spring and summer.

[6] The "average" respondent is the median based on all people who consumed the species.
[7] Due to the relatively small group or respondents under 18 years of age (n=12), age categories for children and youth were collapsed to one group (0-17 years of age).

Table K5.3 Walleye Consumption (Pounds per Year)

Age group	Category	Number of Respondents	Mean	Median	Minimum	Maximum	Standard Deviation
0-17	Annual	10	28.9	5	1.5	157.5	53.7
18+	Annual	44	24.6	10.8	1.25	157.5	39.1
All ages	Annual	54	25.4	9	1.25	157.5	41.6
	Spring	33	7.5	4	.5	24	7.9
	Summer	39	13.3	6	1	67.5	19.4
	Fall	21	13.5	4	1	52.5	17.9
	Winter	29	11.2	6	.75	49	12.7
	Top 25% of Consumers	10	100.5	97	24	157.5	48.9

Table K5.4 Walleye - Number of Times Consumed per Year

Category	Number of Respondents	Mean	Median	Minimum	Maximum	Standard Deviation
Last 12 months	754	18.2	8.5	2	105	24
Spring	33	5.9	4	1	15	4
Summer	39	9.6	6	1	45	11
Fall	21	9.7	4	2	35	11
Winter	29	7.2	6	1	14	4

Pike was reported to be the second most commonly consumed local fish (49.3%). The average pike consumer among local anglers and hunters eats five pounds of local pike in one year (Table K5.5). The average child ate just over thirteen (median=13.3) pounds of pike in one year, whereas the average adult ate five pounds per year.[8] The top 25% of pike consumers ate an average of 25 pounds per year. Pike consumption did not vary significantly by season. When respondents were asked how often they eat local fish the average person reported having pike six times per year (Table K5.6).

[8] It should be noted that the child consumption rates are relatively high for fish and game because the families with children surveyed were generally from households with very high levels of local fish and game consumption.

Table K5.5 Pike Consumption (Pounds per Year)

Age group	Category	Number of Respondents	Mean	Median	Minimum	Maximum	Standard Deviation
0-17	Annual	6	35.3	13.3	1.5	157.5	61
18+	Annual	29	18.3	5	1	157.5	39.4
All ages	Annual	35	21.2	5	1	157.5	43.2
	Spring	23	5.5	2	.5	22.5	7.1
	Summer	21	12.9	4	.5	67.5	23
	Fall	24	8.9	2	.5	52.5	16.9
	Winter	19	7	3	.5	15	6.5
	Top 25% of Consumers	7	81.8	25	25	157.5	70.8

Table K5.6 Pike - Number of Times Consumed per Year

Category	Number of Respondents	Mean	Median	Minimum	Maximum	Standard Deviation
Last 12 months	35	17.6	6	2	105	29
Spring	23	4.7	2	1	15	5
Summer	21	12	4	1	45	15
Fall	24	6.8	2	1	35	11
Winter	19	4.8	6	1	10	3

Perch was consumed by fewer than fifty percent of respondents (47.9%). According to the survey data, the average perch consumer among local anglers and hunters eats 16 pounds of perch in one year (Table K5.7). The average child ate nine pounds of perch in one year whereas the average adult ate 16 pounds per year. The top 25% of perch consumers ate an average of 48 pounds per year. The highest proportions of perch were consumed in the winter and spring. When respondents were asked how often they eat local fish the average person reported having perch 12 times per year (Table K5.8).

Table K5.7 Perch Consumption (Pounds per Year)

Age group	Category	Number of Respondents	Mean	Median	Minimum	Maximum	Standard Deviation
0-17	Annual	4	9.8	9	3	18	6.2
18+	Annual	29	28.7	16	1	150	43.7
All ages	Annual	33	26.4	16	1	150	41.4
	Spring	23	14.6	6	.25	75	24.4
	Summer	11	8.7	4	2	18	7.4
	Fall	12	3.8	2	1	12	4
	Winter	23	17.1	6	.75	75	24.9
	Top 25% of Consumers	8	82.8	48	36	150	55.8

Table K5.8 Perch - Number of Times Consumed per Year

Category	Number of Respondents	Mean	Median	Minimum	Maximum	Standard Deviation
Last 12 months	33	21.5	12	1	100	27
Spring	23	11.1	6	1	50	16
Summer	11	8.1	12	1	12	5
Fall	12	4.7	4	1	12	4
Winter	23	13.5	6	1	50	17

K-5.2.2 Local Game Consumption

What types of local game are people eating?

Local hunters and anglers reported consuming five species of game. Three of the five species were consumed by close to half of respondents. The most commonly consumed species among local anglers and hunters were grouse, moose, and deer (Table K5.9).

Table K5.9 Local Game Consumption

Species	Number of Individual Respondents	Percent (%) of Respondents
Grouse	46	64.8
Moose	44	62
Deer	34	47.9
Wild Rabbit	14	19.7
Ducks or Geese	7	9.9

Grouse was reported to be the most commonly consumed local game (64.8%). According to the survey data, the average grouse consumer among local anglers and hunters eats three pounds of grouse in one year (Table K5.10). The average child[9] ate two pounds of grouse in one year whereas the average adult ate three pounds per year. The top 25% of grouse consumers ate an average of 12 pounds per year. When respondents were asked how often they eat local game the average person reported having grouse six times per year (Table K5.11). The highest proportions of grouse were consumed in the fall.

[9] Child refers to respondents under 18 years of age, whereas adult refers to respondents 18 years of age and older.

Table K5.10 Grouse Consumption (Pounds per Year)

Age group	Category	Number of Respondents	Mean	Median	Minimum	Maximum	Standard Deviation
0-17	Annual	9	8.6	2	.25	60	19.36
18 and over	Annual	36	8.2	3	.25	60	13.55
All ages	Annual	45	8.3	3	.25	60	14.63
	Spring	1	4.5	4.5	4.5	4.5	0
	Summer	1	4.5	4.5	4.5	4.5	0
	Fall	45	7.2	2	.25	60	44.7
	Winter	16	2.4	2	.5	6	1.8
	Top 25% of Consumers	11	25.4	12	10.5	60	22.33

Table K5.11 Grouse - Number of Times Consumed per Year

Category	Number of Respondents	Mean	Median	Minimum	Maximum	Standard Deviation
Last 12 months	45	12.5	6	1	60	15
Spring	1	9	9	9	9	0
Summer	1	9	9	9	9	0
Fall	45	10.4	4	1	60	15
Winter	16	4.8	4	1	12	4

Moose was reported to be the second most commonly consumed local game (62%). Although fewer people consumed moose compared to grouse, moose was consumed in larger quantities. According to the survey data, the average moose consumer among local anglers and hunters eats 18 pounds of moose in one year (Table K5.12). The average child ate 20 pounds of moose in one year whereas the average adult ate 16 pounds per year. The top 25% of moose consumers ate an average of 48 pounds per year. When respondents were asked how often they eat local game the average person reported having moose 16 times per year (Table K5.13). The highest proportions of moose were consumed in the fall.

Table K5.12 Moose Consumption (Pounds per Year)

Age group	Category	Number of Respondents	Mean	Median	Minimum	Maximum	Standard Deviation
0-17	Annual	6	33.5	20	1	96	33.5
18 and over	Annual	37	23.2	16	1	96	24
All ages	Annual	43	24.6	18	1	96	25.3
	Spring	19	8	7.5	.5	24	7.7
	Summer	10	11	9.4	1.5	24	9.4
	Fall	43	9.2	7.5	.5	24	8.1
	Winter	36	11.2	8.8	.5	24	8.8
	Top 25% of Consumers	11	58.5	48	40	96	24.2

Table K5.13 Moose - Number of Times Consumed per Year

Category	Number of Respondents	Mean	Median	Minimum	Maximum	Standard Deviation
Last 12 months	43	24.6	16	2	88	24
Spring	19	8.5	12	1	16	6
Summer	10	9.1	12	3	12	4
Fall	43	9.1	8	1	12	8
Winter	36	11.5	12	1	40	10

Deer was consumed by just fewer than fifty percent of respondents (47.9%). According to the survey data, the average deer consumer among local anglers and hunters eats four pounds of deer in one year (Table K5.14). The average child ate 16 pounds of deer in one year whereas the average adult ate four pounds per year. The top 25% of deer consumers ate an average of 20 pounds per year. The highest proportions of deer were consumed in the fall. When respondents were asked how often they eat local game the average person reported having deer 19 times per year (Table K5.15).

Table K5.14 Deer Consumption (Pounds per Year)

Age group	Category	Number of Respondents	Mean	Median	Minimum	Maximum	Standard Deviation
0-17	Annual	3	12.4	16	1.25	25	8.5
18+	Annual	26	8.2	4	.63	32	8.5
All ages	Annual	29	8.6	4	.63	32	8.5
	Spring	11	2.4	1.5	.63	4.5	1.6
	Summer	3	2.5	1.5	1.5	4.5	1.7
	Fall	27	4.1	4	1	16	3.4
	Winter	14	7.5	8	1.5	16	4.7
	Top 25% of Consumers	6	21.7	20	18	32	5.1

Table K5.15 Deer - Number of Times Consumed per Year

Category	Number of Respondents	Mean	Median	Minimum	Maximum	Standard Deviation
Last 12 months	33	10.8	19	1	36	10
Spring	11	3.4	3	1	9	2
Summer	3	5	3	3	9	3
Fall	31	5.6	4	2	16	4
Winter	14	9.2	10.5	2	16	5

K-6.0 GARDENERS

K-6.1 Population Profile

Interviews were conducted with 29 households, representing 65 respondents in the gardening sub-group (34 males and 29 females). The interviews collected household data as well as individual-level data. Table K6.1 shows the age distribution of respondents [10].

Table K6.1 Profile of Respondents - Gardeners

Age	Male	Female	Total	Percent of Population
0-5	0	0	0	0.0%
6-12	1	5	6	9.2%
13-17	2	1	3	4.6%
18-29	3	0	3	4.6%
30-39	0	0	0	0.0%
40-49	2	3	5	7.7%
50-59	7	6	13	20.0%
60+	19	14	33	50.8%
Unknown age	1	1	2	3.1%
Total	35	30	65	100.0%

Respondents were asked about household members' participation in hunting, fishing and gardening. Almost all households (92.7%) reported that they had planted a garden in the last 12 months. A large majority of households (75%) reported that they do not fish or hunt (Figure K-6-1).

[10] Two (2) respondents did not provide age information.

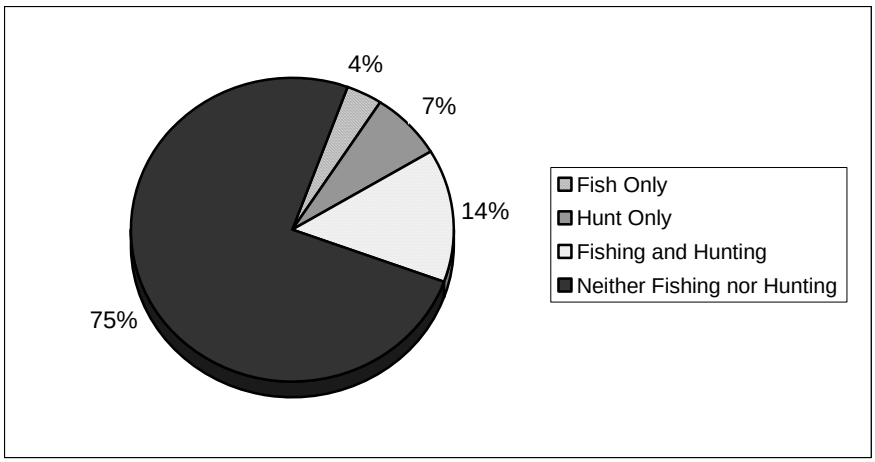

Figure K-6-1 Hunting and fishing activity - local gardeners (by household)

When asked about source of local drinking water the majority of respondents (65.5%) reported to be on the municipal water supply (Figure K-6-2). Ground well water was reported as the second most common water source (17.2%) for the gardening sub-group.

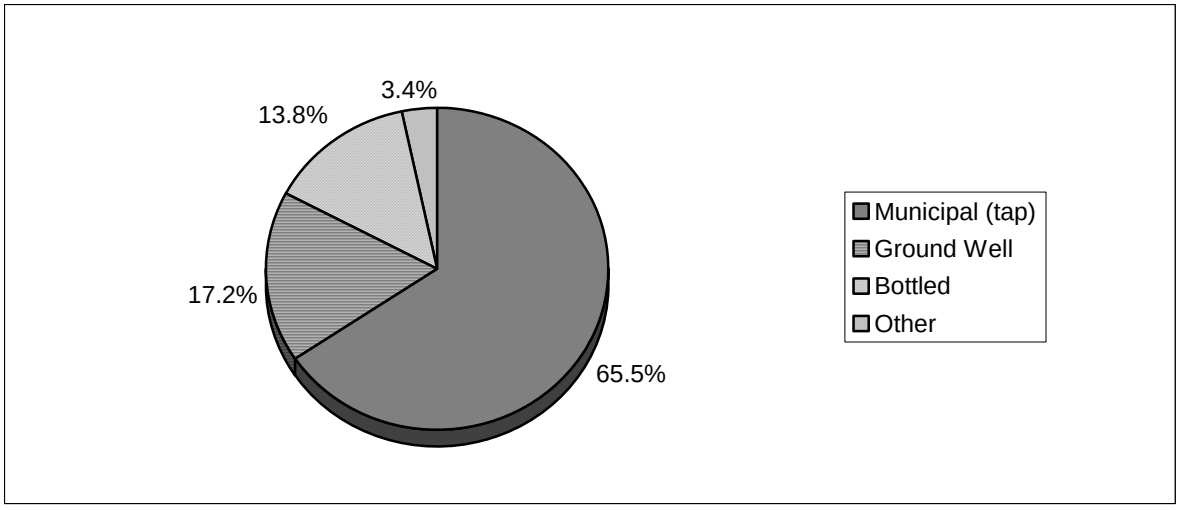

Figure K-6-2 Drinking water source- local gardeners (by household)

K-6.2 Local food consumption profile

The section identifies the species of local fruit and vegetables commonly consumed and reports how often residents consumed them, as well as the seasonality of consumption. The average consumption patterns are reported for all consumers[11] and the top 25% of consumers.

K-6.3 Local fruit and Vegetable Consumption

What types of local fruit and vegetables are people eating?

From interviews with 29 local households of gardeners, it was reported that 41 species of fruit and vegetables were consumed (Table K6.2). The five most common types of local fruit and vegetables consumed were green and yellow beans, wild blueberries, potatoes, carrots and tomatoes.

[11] The "average" respondent is the median based on all people who consumed the species.

Table K6.2 Local Fruit and Vegetable Consumption

Vegetable/Fruit	Individuals (n=65)	
	#	%
Green or Yellow Beans	59	90.8
Wild Blueberries	56	86.2
Potatoes	48	73.8
Carrots	46	70.8
Tomatoes	45	69.2
Cucumbers	44	67.7
Lettuce and Spinach	41	63.1
Zucchini or Squash	36	55.4
Rhubarb	36	55.4
Green Onions	33	50.8
Other Wild Berries	32	49.2
Herbs	32	49.2
Cultivated Strawberries	28	43.1
Corn	27	41.5
Beets	25	38.5
Peppers	22	33.8
Peas	21	32.3
Apples	19	29.2
Radishes	16	24.6
Onions	14	21.5
Wild Strawberries	13	20.0
Other Cultivated Berries*[12]	12	18.5
Garlic	11	16.9
Cultivated Blueberries	10	15.4
Asparagus	7	10.8
Plums	6	9.2
Wild Mushrooms	6	9.2
Cabbage	6	9.2
Broccoli	6	9.2
Swiss chard	6	9.2
Radicchio	6	9.2
Cauliflower	5	7.7
Turnip	4	6.2
Arugula	3	4.6
Fiddle heads	2	3.1
Kohlrabi	2	3.1
Egg plant	2	3.1
Pumpkin	2	3.1
Grapes	2	3.1
Celery	1	1.5
Brussel sprouts	1	1.5

[12] It should be noted that for the purpose of the gardening sub-group "Other Cultivated Berries" refers to raspberries, gooseberries, and blackberries.

What are the characteristics of local fruit and vegetables consumption?

Eight types of local vegetables and two types of fruit were consumed by at least fifty percent (50%) of respondents.

Vegetables

Local green and yellow beans were reported to be the most commonly consumed local vegetable (90%). According to the survey data, the average local bean consumer among gardeners eats 18 cups of local beans in one year (Table K6.3). Consumption varied significantly by age group. The average child[13] ate three cups of local beans in one year whereas the average adult ate 22 cups per year. The top 25% of local bean consumers ate an average of 90 cups per year. The highest proportions of local beans were consumed in summer. When respondents were asked how often they eat local vegetables the average person reported having local beans 24 times per year (Table K6.5).

Potatoes were reported to be the second most commonly consumed local vegetable (73.8%). Although fewer people consumed local potatoes compared to local beans, local potatoes were consumed in much higher quantities. According to the survey data, the average local potato consumer among gardeners eats 48 cups of local potatoes in one year (Table K6.3). Consumption varied significantly by age group. The average child ate eight cups of local potatoes in one year whereas the average adult ate 60 cups per year. The top 25% of local potato consumers ate an average of 288 cups per year. The highest proportions of local potatoes were consumed in summer and fall. When respondents were asked how often they eat local vegetables the average person reported having local potatoes 84 times per year (Table K6.5).

Carrots were reported to be the third most commonly consumed local vegetable (70.8%). According to the survey data, the average local carrot consumer among gardeners eats eight cups of local carrots in one year (Table K6.3). Consumption varied significantly by age group. The average child ate four cups of local carrots in one year whereas the average adult ate 16 cups per year. The top 25% of local carrot consumers ate an average of 72 cups per year. When respondents were asked how often they eat local vegetables the average person reported having local carrots nine times per year (Table K6.5). The highest proportions of local carrots were consumed in the summer.

Other significantly reported local vegetables that were consumed include cucumbers, lettuce/spinach, zucchini/squash, rhubarb and green onions (Tables K6.3 and K6.5).

[13] Child refers to respondents under 18 years of age, whereas adult refers to respondents 18 years of age and older.

- Local cucumbers were consumed by just fewer than seventy percent of respondents (67.7%). According to the survey data, the average local cucumber consumer among gardeners eats 39 cups of cucumbers in one year. Consumption varied significantly by age group. The average child ate 48 cups of local cucumbers in one year whereas the average adult ate 30 cups per year. The top 25% of local cucumber consumers ate an average of 90 cups per year. The highest proportions of local cucumbers were consumed in summer. When respondents were asked how often they eat local vegetables, the average person reported having local cucumbers 48 times per year.

- The average local lettuce/spinach consumer among gardeners eats 50 cups of local lettuce/spinach in one year. Consumption varied significantly by age group. The average child ate 24 cups of local lettuce/spinach in one year whereas the average adult ate 50 cups per year. The top 25% of consumers ate an average of 315 cups per year. When respondents were asked how often they eat local vegetables, the average person reported having local lettuce/spinach 32 times per year. The highest proportions of local lettuce/spinach were consumed in summer.

- The average local zucchini/squash consumer among gardeners eats seven cups of local zucchini/squash in one year. Consumption varied significantly by age group. The average child ate one cup of local zucchini/squash in one year whereas the average adult ate 10 cups per year. The top 25% of local zucchini/squash consumers ate an average of 60 cups per year. When respondents were asked how often they eat local vegetables the average person reported having local zucchini/squash 12 times per year. The highest proportions of local zucchini/squash were consumed in the summer.

- The average local rhubarb consumer among gardeners eats three cups of local rhubarb in one year. Consumption varied by age group. The average child ate two cups of local rhubarb in one year whereas the average adult ate just under four (median=3.75) cups per year. The top 25% of local rhubarb consumers ate an average of 60 cups per year. When respondents were asked how often they eat local vegetables the average person reported having local rhubarb four times per year. The highest proportion of local rhubarb was consumed in the summer.

- Local green onions were also reported to be consumed in significant proportions. According to the survey data, the average local green onion consumer eats eight cups of green onions in one year. Consumption varied by age group. The average child ate six cups of local green onions in one year whereas the average adult ate 10 cups per year. The top 25% of local green onion consumers ate an average of 31.5 cups per year. When respondents were asked how often they eat local vegetables

the average person reported having local green onions 20 times per year. The highest proportions of local green onions were consumed in the summer.

Fruit

Local wild blueberries were reported to be the most commonly consumed local fruit (86.2%). According to the survey data, the average local wild blueberry consumer among gardeners eats 12 cups of blueberries in one year (Table K6.4). Consumption varied significantly by age group. The average child ate 2.5 cups of local blueberries in one year whereas the average adult ate 12 cups per year. The top 25% of local blueberries consumers ate an average of 292 cups per year. The highest proportions of local blueberries were consumed in summer. When respondents were asked how often they eat local fruit the average person reported having local wild blueberries 22 times per year (Table K6.6).

Local tomatoes were reported to be the second most commonly consumed local fruit (69.2%). Although fewer people consumed local tomatoes compared to local blueberries, local tomatoes were consumed in much higher quantities. According to the survey data, the average local tomato consumer among gardeners eats 30 cups of local tomatoes in one year (Table K6.4). Consumption varied significantly by age group. The average child ate one cup of local tomatoes in one year whereas the average adult ate 40 cups per year. The top 25% of local tomato consumers ate an average of 205 cups per year. The highest proportions of local tomatoes were consumed in summer. When respondents were asked how often they eat local fruit the average person reported having local tomatoes 60 times per year (Table K6.6).

Table K6.3 Local Vegetable Consumption (Cups per Year)

Vegetable	Age Group	Category	Mean	Median	Minimum	Maximum	Standard Deviation
Green and Yellow Beans	0-17	Annual (n=9)	12.3	3	3	40	15.83
	18+	Annual (n=48)	56	22	2	480	103.81
	All Ages	Annual (n=57)	49.1	18	2	480	96.64
		Spring (n=27)	18.1	9	1	120	30.85
		Summer (n=51)	23.5	8	1.32	135	34.4
		Fall (n=32)	18.8	9	1.32	120	28.84
		Winter (n=33)	15.4	6	1	120	28.45
		Top 25% of Consumers (n=14)	159	90	48	480	150.64
Potatoes	0-17	Annual (n=6)	99.3	8	2	288	146.17
	18 +	Annual (n=40)	116.6	60	2	384	129.6
	All Ages	Annual (n=46)	114.3	48	2	384	130.25
		Spring (n=23)	42.8	30	6	96	29.83
		Summer (n=42)	36.9	18	2	150	42.34
		Fall (n=38)	40.7	23.25	2	150	42.91
		Winter (n=31)	38	30	4	96	28.95
		Top 25% of Consumers (n=12)	315.5	288	240	384	45.92
Carrots	0-17	Annual (n=8)	7.8	4	.5	24	10.15
	18+	Annual (n=36)	28.6	16	.5	180	42.32
	All Ages	Annual (n=44)	24.8	8	.5	180	39.24
		Spring (n=8)	17.4	12	4.5	45	14.39
		Summer (n=40)	9.8	6	.5	60	11.91
		Fall (n=28)	12.9	12	1	50	13.48
		Winter (n=17)	11.6	8	2.5	45	11.35
		Top 25% of Consumers (n=11)	80.9	72	28	180	50.65
Cucumbers	0-17	Annual (n=6)	36.4	48	1.32	60	27.73
	18+	Annual (n=34)	46.5	30	1.32	180	47.58
	All Ages	Annual (n=40)	45	39	1.32	180	45.03
		Spring (n=9)	20.5	12	12	45	14.31
		Summer (n=40)	27.4	12.25	1.32	90	28.81
		Fall (n=19)	17.6	12	1	45	15.48
		Winter (n=9)	20.5	12	12	45	14.31
		Top 25% of Consumers (n=10)	107	90	80	180	38.6
Lettuce and Spinach	0-17	Annual (n=6)	52	24	24	108	43.38
	18 +	Annual (n=33)	100	50	1	360	117.06
	All Ages	Annual (n=39)	92.6	50	1	360	109.98
		Spring (n=1)	90	90	90	90	0
		Summer (n=39)	77.1	48	1	360	96.69
		Fall (n=11)	38.7	36	7.5	112	32.77
		Winter (n=1)	90	90	90	90	0
		Top 25% of Consumers (n=8)	278.8	315	120	360	102.01

Table K6.3 (continued) Local Vegetable Consumption (Cups per Year)

Vegetable	Age Group	Category	Mean	Median	Minimum	Maximum	Standard Deviation
Zucchini and Squash	0-17	Annual (n=2)	1	1	1	1	0
	18+	Annual (n=32)	22.6	10	1	120	29.6
	All Ages	Annual (n=34)	21.3	7	1	120	29.15
		Spring (n=9)	12.8	12	3	30	8.38
		Summer (n=32)	8.1	4	.5	30	9.58
		Fall (n=23)	9.5	4	.5	60	13.05
		Winter (n=11)	12	9.75	3	30	7.75
		Top 25% of Consumers (n=8)	66	60	39	120	28.46
Rhubarb	0-17	Annual (n=7)	1.9	2	.5	3	1.03
	18+	Annual (n=29)	7.5	3.75	.5	24	7.32
	All Ages	Annual (n=36)	6.4	3	.5	24	6.94
		Spring (n=16)	2.6	2	.5	6	2.09
		Summer (n=29)	4	3	.5	12	3.56
		Fall (n=14)	2.7	2.25	.5	6	2.21
		Winter (n=12)	2.9	3	1	6	2.07
		Top 25% of Consumers (n=8)	66	60	39	120	28.46
Green Onions	0-17	Annual (n=4)	10	10	8	12	2.31
	18+	Annual (n=27)	12.4	6	.5	45	13.77
	All Ages	Annual (n=31)	12	8	.5	45	12.86
		Spring (n=9)	4.8	4.5	.25	11.25	4.12
		Summer (n=31)	7.5	8	.5	18	5.64
		Fall (n=12)	4.9	4.5	.25	11.25	3.94
		Winter (n=7)	5.8	4.5	1	11.25	4.09
		Top 25% of Consumers (n=8)	30.7	31.5	15	45	11.98

Table K6.4 Local Fruit Consumption (Cups per Year)

Fruit	Age Group	Category	Mean	Median	Minimum	Maximum	Standard Deviation
Wild Blueberries	0-17	Annual (n=7)	27.3	2.5	2	90	42.84
	18+	Annual (n=47)	172.7	12	2	1692	413.31
	All Ages	Annual (n=54)	153.8	12	2	1692	388.46
		Spring (n=28)	24.9	3	.5	360	71.16
		Summer (n=54)	96.5	9	.5	1269	272.33
		Fall (n=38)	44.5	3.5	.5	423	109.16
		Winter (n=32)	22.1	3	.5	360	66.83
		Top 25% of Consumers (n=14)	567.7	292.69	90	1692	606.45
Tomatoes	0-17	Annual (n=5)	24.6	1	1	60	32.32
	18+	Annual (n=38)	83.9	40	.5	360	97.01
	All Ages	Annual (n=43)	77	30	.5	360	93.59
		Spring (n=11)	32.7	15	6	90	32.10
		Summer (n=40)	46.2	28.5	.5	180	48.6
		Fall (n=24)	30.7	22	1.32	90	27.43
		Winter (n=14)	26.2	13.5	1	90	31
		Top 25% of Consumers (n=10)	222.8	205	144	360	78.08
Cultivated	0-17	Annual (n=5)	12.4	14	10	14	2.19

Strawberries	18+	Annual (n=21)	109.1	10	.5	2080	451.63
	All Ages	Annual (n=26)	90.5	11	.5	2080	405.81
		Spring (n=13)	27.7	3	.5	336	92.64
		Summer (n=26)	48.9	7	.5	1072	208.75
		Fall (n=13)	28	3	.5	336	92.55
		Winter (n=13)	27.6	3	.25	336	92.68
		Top 25% of Consumers (n=5)	431.6	20	18	2080	921.48

Table K6.5 Local Vegetables - Number of Times Consumed per Year

Vegetable	# of Respondents	Mean	Median	Minimum	Maximum	Standard Deviation
Green and Yellow Beans	Last 12 months (n=57)	54.1	24	4	480	100
	Spring (n=27)	21.3	9	2	120	34
	Summer (n=51)	24	14	4	120	29
	Fall (n=32)	21.2	11	4	120	30
	Winter (n=33)	18.3	6	2	120	31
Potatoes	Last 12 months (n=46)	112.4	84	2	360	116.4
	Spring (n=23)	41.3	36	8	90	22.91
	Summer (n=42)	36.4	27	4	150	39.58
	Fall (n=38)	40.4	33	2	150	39.90
	Winter (n=31)	37.3	36	8	90	23.13
Carrots	Last 12 months (n=44)	40.2	9	1	360	65.53
	Spring (n=8)	31.1	24	9	90	27
	Summer (n=40)	15.2	9.5	1	90	17.71
	Fall (n=28)	20.1	18	2	90	20
	Winter (n=17)	20.4	12	8	90	21
Cucumbers	Last 12 months (n=42)	48.3	48	4	180	45
	Spring (n=11)	19.9	12	6	45	16
	Summer (n=42)	29	12	4	90	25
	Fall (n=21)	17.7	12	2	45	14
	Winter (n=11)	19.9	12	6	45	16
Lettuce and Spinach	Last 12 months (n=39)	47.6	32	2	360	60.75
	Spring (n=1)	90	90	90	90	0
	Summer (n=39)	36.7	24	2	90	30.46
	Fall (n=11)	22.3	12	8	90	26
	Winter (n=1)	90	90	90	90	0
Zucchini and Squash	Last 12 months (n=34)	30.5	12	3	156	42
	Spring (n=9)	18	12	3	39	14
	Summer (n=32)	12.8	5	1	60	16
	Fall (n=23)	12.6	8	1	60	15
	Winter (n=11)	16.2	12	3	39	13
Rhubarb	Last 12 months (n=36)	12.1	4	1	48	14
	Spring (n=16)	4.6	4	1	12	4
	Summer (n=29)	7	4	1	24	6
	Fall (n=14)	6.5	5	1	20	6
	Winter (n=12)	5.8	6	2	12	4
Green Onions	Last 12 months (n=31)	48.6	20	2	360	88
	Spring (n=9)	28.8	16	1	90	35
	Summer (n=31)	23	16	2	90	22
	Fall (n=12)	25.3	10.5	1	90	32
	Winter (n=7)	33.4	9	4	90	39

Table K6.6 Local Fruit - Number of Times Consumed per Year

Fruit	# of Respondents	Mean	Median	Minimum	Maximum	Standard Deviation
Wild Blueberries	Last 12 months (n=54)	39.5	22	4	360	64
	Spring (n=28)	11	3	1	90	21
	Summer (n=54)	18.7	8	2	90	21
	Fall (n=38)	12.8	6	1	90	19
	Winter (n=32)	10.2	3	1	90	20
Tomatoes	Last 12 months (n=143)	79.4	60	2	360	87
	Spring (n=11)	36.5	30	12	90	30
	Summer (n=40)	46	60	2	90	33
	Fall (n=24)	31.9	30	2	90	24
	Winter (n=14)	29.3	18	2	90	30

SARA GROUP

SUB APPENDIX K-A

SURVEY LETTERS AND INSTRUMENTS