Klamath Basin Food System Assessment
Klamath Tribes Data Summary

A survey about access to food for tribal people in the Klamath Basin

The Klamath Tribes and the University of California at Berkeley
March 15, 2019

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Acknowledgements and Disclaimer

The data provided in this internal report are the results of a survey that was part of a larger food assessment study conducted as part of a five-year USDA-NIFA-AFRI food security project titled, *Enhancing Tribal Health and Food Security in the Klamath Basin by Building a Sustainable Regional Food System*.

The data in this report reflects a preliminary compilation and summary of the survey data. Further analysis and interpretation of the results is presented in a final report and in articles and publications, available on the following website: https://nature.berkeley.edu/karuk-collaborative/

The views and opinions expressed in this report do not necessarily reflect the official policy or position of any agency of the U.S. government, but that of the authors. The survey was co-designed by Klamath Tribal Health and Family Services employees Shawn Jackson, Perri McDaniel, and Christa Runnels, together with UC Berkeley Cooperative Extension Specialist Jennifer Sowerwine, and research assistant Sara Reid. Data analysis was conducted by Megan Mucioki, post-doctoral researcher at UC Berkeley. Special thanks to other members of the Klamath Basin Food Security team especially Daniel Sarna-Wojcicki, Frank Lake, and Edith Friedman, and to all the survey respondents who contributed their knowledge and experiences to this report.

It is important to acknowledge the assumptions and limitations of this survey in representing all facets of the tribal community. While we made our best effort to make the survey accessible to all tribal members and descendants, we may not have been able to reach everyone as not all descendants' mailing addresses are registered with the Klamath Tribes. We also may not have been able to reach those experiencing the greatest poverty and food insecurity. This includes those who may not have received the survey as they were no longer at the mailing address, are homeless, or are elderly and may not have had the means to respond to the survey. In addition, because the focus of our survey was at the household level, in which we requested one response per household, we may not have captured *all* tribal members as the survey respondent may have represented another tribe. In other words, households often consist of tribal members and descendants from different or multiple tribal affiliations, as well as non-tribal members of the household. Survey responses were categorized based on the primary tribal affiliation of the person who filled out the survey.

When referencing this report, please use the following citation:

Klamath Tribal Health and Family Services, Megan Mucioki, and Jennifer Sowerwine. 2016. *Klamath Basin Food System Assessment: Klamath Tribes Data.* Klamath Falls, Oregon and Berkeley, California: The Klamath Tribes and the University of California at Berkeley.

Executive summary

The Klamath Basin Food System Assessment was conducted by Klamath Tribes employees and University of California at Berkeley researchers to document the current state of the food system in tribal communities on the Klamath River Basin and possible solutions to food-related challenges faced by tribal people in this region. While the survey covered all four tribes in the Klamath River Basin, this report only summarizes survey results for the Klamath Tribes. The summarized data is stratified into two geographic regions – respondents that live in Klamath Falls and respondents that live in outlying towns.

The Klamath Basin Food System Assessment is a 60-question survey focused on food shopping and consumption, food assistance programs, homegrown and home raised foods, Native foods, and community resources and food education. A total of 1587 surveys were distributed to tribal members and descendants residing within the service area of the tribe through the mail and at select tribal events from March 2015 to February 2016. For the Klamath Tribes, 249 tribal households responded to the survey, representing 650 people in tribal households.

Summary of results[1]

Household characteristics

- About 51.87% of all respondents were classified at or under the federal poverty level for a household of three.
- There was not a statistically significant difference between household income and location, however, income was generally a bit higher in households residing in outlying towns.
- Incidence of high blood pressure and type II diabetes were more than twice the national rates reported by the Centers for Disease Control.

Access to food, water, and other resources

- About a quarter of respondents rarely or never had access to healthy food.
- Collectively, 54.92% of households said they rarely had access to their desired Native foods throughout the year.
- While households in outlying towns have better access to Native foods than those in Klamath Falls, over 50% of all households rarely or never had access to Native food.

Community food resources

- About 30% more households in outlying towns than in Klamath Falls obtained food through hunting, gathering, and fishing. After grocery stores, this was the most significant food source for households in outlying towns.
- Grocery stores are important to households in both locations but were ranked "very important" by 30% more respondents in Klamath Falls than those in outlying towns.

[1] The recall period for all results was one year.

Grocery shopping behavior

- Traveling one way to the grocery store most commonly took households in Klamath Falls less than 20 minutes while households in outlying towns spent 30-60 minutes to get to the grocery store.
- Many respondents shared that they did not have enough money to go grocery shopping and that they experienced transportation challenges when relying on public transportation to the store.
- Households in outlying towns had significantly greater negative opinions about food in the stores closest to their home.

Food security

- 57.26% of households are experiencing very low food security
- In Klamath Falls, 51.20% of surveyed households worried about running out of food or ran out of food in the past year. In other towns, 70.13% of households reported this same experience.
- Collectively, 34.45% of respondents ran out of money for food at least once a month, 9.66% of respondents ran out of money for food at least once a week, and 9.24% a few times a year.
- Households in outlying towns relied more on hunting and fishing to deal with not having enough money for food.
- Households in Klamath Falls relied more on relatives, food assistance, and changing the size and the number of meals consumed to deal with not having enough money for food.

Food Assistance Programs

- Collectively, 70.74% of respondents used at least one type of food assistance in the past year.
- The use of SNAP and food pantries was significantly greater in Klamath Falls.
- Households in outlying towns were more reliant on tribal commodity food distribution, soup kitchens, and senior meals.
- 21.28% of respondents said they relied on food assistance because Native foods were not available.
- 29.19% of respondents in Klamath Falls relied on other forms of food assistance because their SNAP benefits had run out.

Home raised foods

- 29.96% of respondents grew or raised food at their home.

Native foods

- Significantly more households in other towns (85.53%) than households in Klamath Falls (68.05%) consumed Native foods at least once a year.
- Collectively, households consumed eel less than a day per year (average frequency of consumption out of 365 days).

- Over 60% of respondents said poor availability of Native foods and heavy degradation of the environment were strong and medium barriers to accessing enough Native foods.
- 40% of respondents said they had taught themselves about Native foods and materials rather than learning from another person.

Household and survey respondent characteristics

Key trends:

- *About 51.87% of all respondents fell below the federal poverty level with a reported annual household income of $20,000 or less for a family of 3.*
- *There was not a statistically significant difference between household or individual income and location, however, income was generally a bit higher for households in outlying towns.*
- *Approximately 15% of respondents did not graduate from high school, however, about 21% of respondents had completed some form of higher education.*
- *Household occurrence of high blood pressure (48.95%) and type II diabetes (25.74%) were exceptionally high when compared to national rates of high blood pressure (29% reported by the Centers for Disease Control) and type II diabetes (9.3% reported by the Centers for Disease Control).*

Collectively, 249 members or descendants of the Klamath Tribes responded to our survey. The data for the Klamath Tribes was segregated into households residing in Klamath Falls and households residing in other outlying towns:

- Klamath Falls: 171 respondents
- Other outlying towns: 78 respondents

Basic Demographics: The average age of survey respondents was 53.23 years with an age range of 20 to 83 years. There were more female respondents (60.08%) than male respondents (39.52%) as well as one gender non-conforming respondent. Two hundred and forty-seven respondents identified as Native American, and one respondent did not. The average household size was 2.62 people with a range of one to seven people.

Income: Respondents were asked to share their annual individual income as well as their household annual income. For annual individual income, 41.36% of respondents earned less than $10,000. This was followed by 22.73% of respondents earning $10,000-$19,999, 12.73% earning $20,000-$29,999, 5.45% earning $30,000-$39,999, 8.64% earning $40,000-$49,999, 3.18% earning $50,000-$59,999, 1.36 earning % $60,000-$69,999, 1.36% earning $70,000-$79,999, 3.18% earning over $80,000. The results for annual household income followed a similar pattern. The bottom three income brackets captured over half of households in our survey with 31.78% of households earning less than $10,000 per year, 23.36% earning $10,000-$19,999, and 12.62% earning $20,000-$29,999. There

was not a statistically significant[2] difference between household or individual income and location; however, income was generally a bit higher for households in outlying towns.

Education: Survey respondents were asked to share the highest level of education they completed as well as the highest level of education their mother completed. The reported levels of education completed by survey respondents were: 15.09 % completed some high school or some grade school, 31.03% completed high school, 32.76% completed some college, 9.05% completed an Associate's Degree or a technical school, 8.62% had a Bachelor's degree, and 3.45% had a Masters or Ph.D. Comparatively, 16.88% of respondents' mothers completed some high school or some grade school, 43.72% of mothers completed high school, 12.55% completed some college, 6.06% completed a Bachelor's degree, 3.03 % obtained an Associate's Degree or completed technical school, 0.43% had a Masters degree or Ph.D, and 17.32% of respondents did not know the highest level of education their mother completed. Education levels of the respondent and the respondent's mother by locations were very comparable.

Health issues: Lastly, survey respondents were asked if themselves or anyone in their household suffered from a list of health issues. The results were as follows: 48.95% households had at least one person that suffered from high blood pressure, 17.72% hypertension, 14.35% had a heart condition, 25.74% had type II diabetes, 40.08% were obese, 25.32% had cavities, 13.50% had food allergies, 15.58% suffered from a disease other than those listed. The rates of health issues were not statistically different between locations; however, the occurrence of all listed ailments was slightly higher in households located in outlying towns.

Access to food, water, and other resources

Key trends:

- *About a quarter of respondents rarely or never had access to healthy food in the past year.*
- *Collectively, 54.92% of households said they rarely had access to their desired Native foods throughout the year.*

[2] We use the term *significant* or *statistically significant difference* to indicate relationships among household location/service areas and other variables that are not random or by chance. In other words, if our sample size is large enough and diverse enough, statistics inform us of relationships that are true to the population being surveyed every time and not just occurring by chance or randomly this one time. The specific statistical tests we used to evaluate relationships in this report are the chi-square test and Fischer's exact test. We have used the probability of error level .05, which means that 5% of the time an identified relationship based on statistical analysis is wrong or not inherent to the population. For more reading about these tests and statistical significance please see: http://www.stat.yale.edu/Courses/1997-98/101/chisq.htm and https://web.csulb.edu/~msaintg/ppa696/696stsig.htm

- *While many households in outlying towns identified with rarely and never having access to Native foods, more households in these locations said they always and usually had access to Native foods as compared to households in Klamath Falls.*
- *Most respondents always or usually had access to drinkable tap water in the past year.*

Households were asked to rank their access to healthy foods and Native foods that they desired. Collectively, 41.09% said they always had access to healthy food, 52.89% of respondents said they usually, 23.77% of respondents said rarely, and 1.64% said they never had access to healthy foods. Access to healthy food did not significantly vary by location. Collectively, 54.92% of households said they rarely had access to their desired Native foods throughout the year (Figure 1). While many households in outlying towns identified with rarely and never having access to Native foods, more households in these locations said they always and usually had access to Native foods as compared to households in Klamath Falls (Figure 1).

Respondents were asked if they had access to drinkable water from the tap. Most surveyed households (87.34%) said they always had access to drinkable tap water while 9.70% said they usually did but not always, 0.84% said sometimes, 0.42% rarely, and 1.69% responded never. In event of an emergency, 71.02% of households had non-perishable food for at least three days, 60.81% of households had access to drinking water for at least three days, 54.69% had a radio, 44.49% had a propane stove, and 20% had a generator.

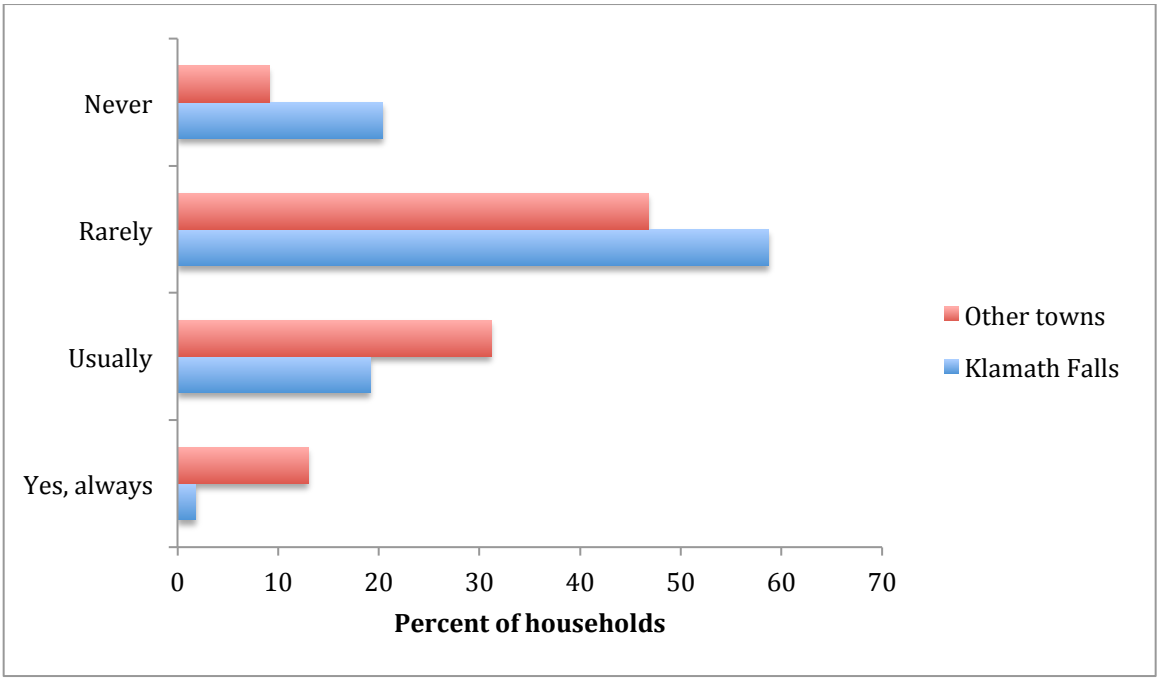

Figure 1. Household access to Native foods in Klamath Falls and other towns.

Community food resources

Key trends:

- *About 30% more households in outlying towns than Klamath Falls got food through hunting, gathering, and fishing. After grocery stores this was the most significant food source for households in outlying towns.*
- *Grocery stores were important to households in both locations but were ranked "very important" by 30% more people in Klamath Falls than those in outlying towns.*
- *Fishing and eeling was ranked not important to 46% of respondents in Klamath Falls while the same was true for only about 26% of respondents in other towns. Likewise hunting was ranked as very important by about 20% more households in outlying towns than households in Klamath Falls.*

Where do you get most of your food?

Respondents were asked to indicate where they obtained most of their food. Figure 2 shows all the places households in Klamath Falls and other towns sourced their food in the past year. About 30% more households in outlying towns than households in Klamath Falls sourced food by hunting, gathering or fishing. More households in outlying towns utilized convenience stores and tribal food distribution for food than households in Klamath Falls. Other sources of food used were comparable between locations (Figure 2).

Next, households were asked to rank (one to four) the places where they got most of their food in the past year. Both households in Klamath Falls and outlying towns ranked the grocery store as the first source of food. For households in outlying towns hunting, gathering, and fishing was ranked as the second, third, and fourth source. Households in Klamath Falls ranked fast food or restaurants second and third and hunting, gathering, and fishing as fourth.

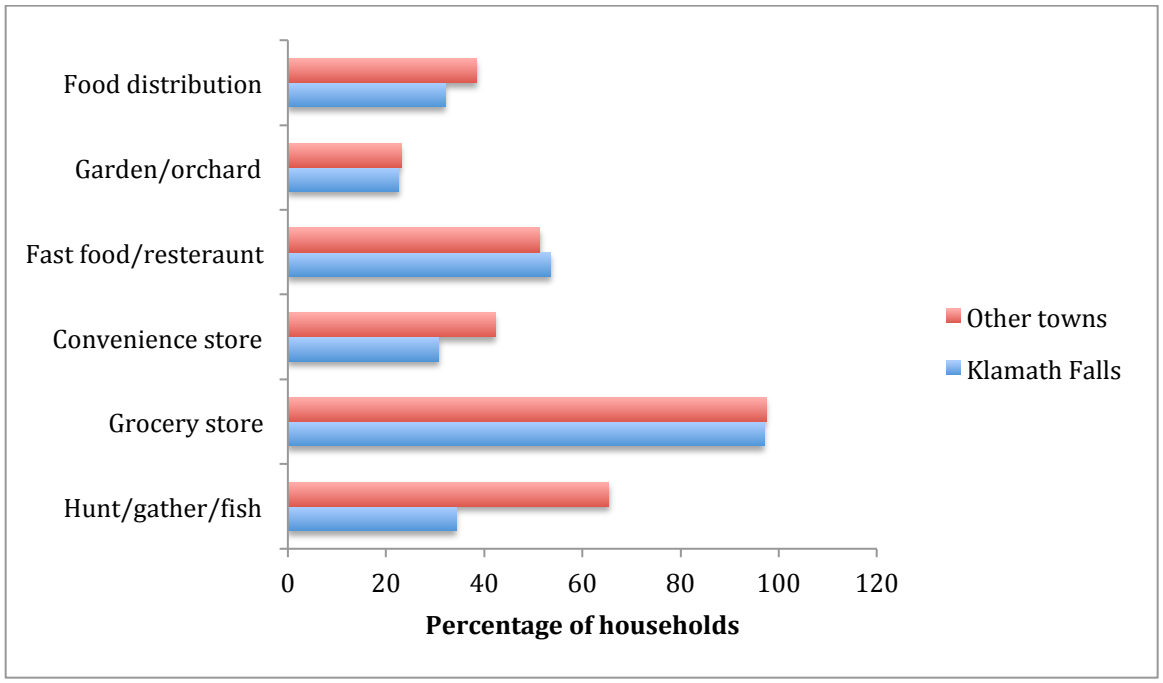

Figure 2. Places where households in Klamath Falls and outlying towns sourced a portion of their food in the past year.

How important are the following food resources?

Survey respondents were asked to rank different food resources based on level of importance. They could choose very important, somewhat important, not important, and does not exist in my community for each food resource. Table 1 reports the food sources that were ranked *significantly different* between households in Klamath Falls and households in outlying towns. In Klamath Falls 64% of respondents said fast food is not important while 20% of respondents, in the same location, said that fast food did not exist in their community (Table 1). About 10% more respondents in Klamath Falls than other towns felt that the local grocery store was a very important or somewhat important source of food. Additionally, 14% of respondents in other towns live in an area without a soup kitchen (Table 1). Fishing and eeling was not important to 46% of respondents in Klamath Falls while the same was true for only about 26% of respondents in other towns. Likewise hunting was ranked as very important by about 20% more households in outlying towns than households in Klamath Falls (Table 1).

Table 1. Food sources ranked significantly different, based on importance, by households in Klamath Falls and households in outlying towns.

		Very important (%)	Somewhat important (%)	Not important (%)	Does not exist (%)
Local grocery	Klamath Falls	88.34	9.82	1.84	0.00
	Other towns	59.46	28.38	8.11	4.05
Farmers market	Klamath Falls	23.29	44.52	30.14	2.05
	Other towns	16.67	28.79	31.82	22.73
Fast food	Klamath Falls	3.29	30.26	64.47	1.97
	Other towns	2.90	27.54	49.28	20.29
Food pantry/soup kitchen	Klamath Falls	20.57	21.99	53.19	4.26
	Other towns	10.53	15.79	59.65	14.04
Fishing or eeling	Klamath Falls	19.29	27.14	46.43	7.14
	Other towns	25.76	43.94	25.76	4.55
Hunting	Klamath Falls	33.57	30.07	30.07	5.59
	Other towns	50.00	35.29	13.24	1.47

Which sources of food would you like more of?

Respondents were asked to choose all the sources of food they would like more of in their community and then rank the top five sources they would like more of the most. As an aggregate, households ranked local grocery store as the first source they wanted more of in their community, this was followed by farmers market (2nd choice), hunting (3rd choice), fishing and eeling (4th source), and gathering Native plants (5th source).

Grocery Shopping Behavior

Key trends:

- *Households in Klamath Falls went grocery shopping more often than those living in outlying towns.*
- *Traveling one way to the grocery store most commonly took households in Klamath Falls less than 20 minutes while households in outlying towns spent 30-60 minutes to get to the grocery store.*
- *Distance was a barrier to grocery shopping for about 25% of households in outlying towns while 50% of households in Klamath Falls experienced no barrier to grocery shopping.*
- *Many respondents wrote that they did not have enough money to go grocery shopping and that they experienced transportation challenges when relying on public transportation.*

- *Households in outlying towns had significantly greater negative opinions about food in the stores closest to their home.*

How often do you get to the grocery store?

Households in Klamath Falls visited the grocery store more often than households in other towns who often relied on one or two big shopping trips per month (Figure 3).

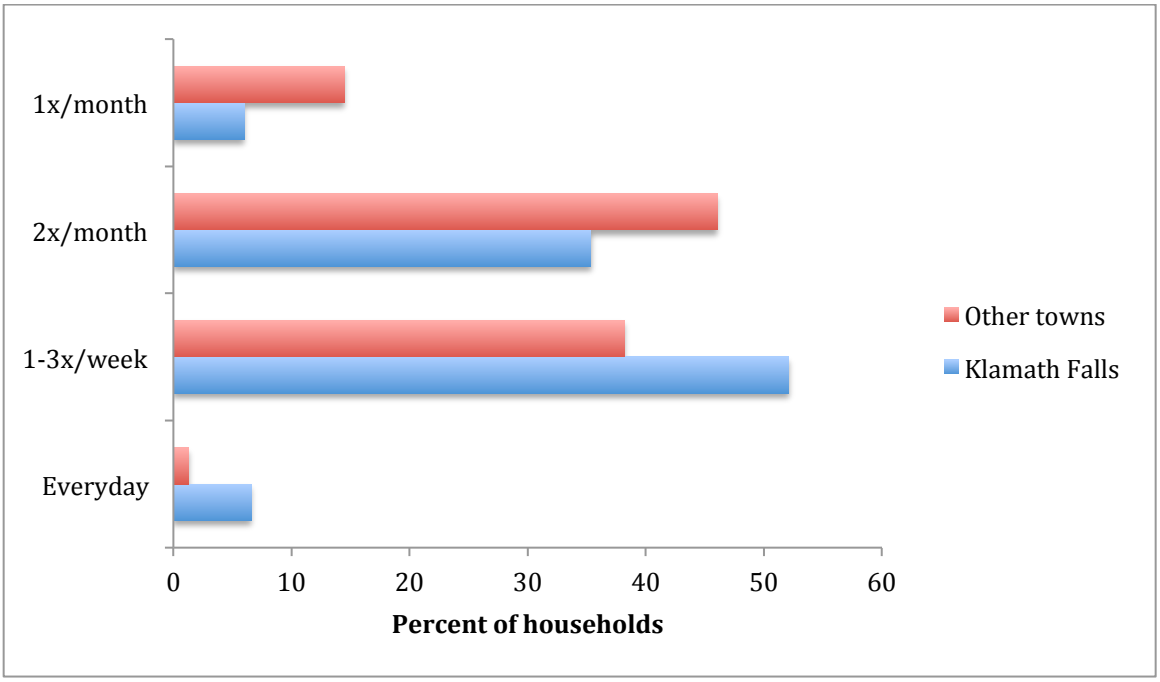

Figure 3. The frequency of grocery shopping by households in Klamath Falls and households in other towns.

How long does it take to travel to the grocery store?

The time it took for respondents to travel to the grocery store (one way) significantly differed between households in Klamath Falls and households in other towns. Figure 4 shows that households in other towns experienced a greater time commitment to travel to the grocery store than households in Klamath Falls. Additionally, 85.43% of all respondents reported that they had access to a vehicle.

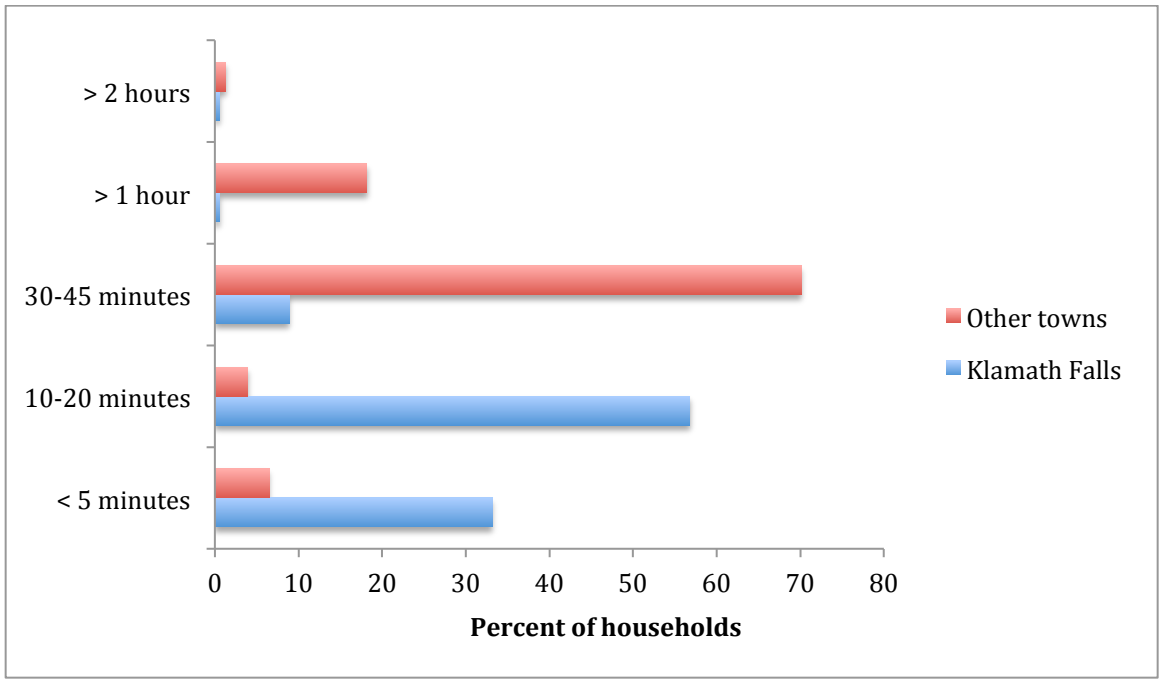

Figure 4. The time it took households in Klamath Falls and outlying towns to travel, one-way, to the grocery store.

What are the biggest barriers you face getting to the grocery store?

Respondents were asked to select the greatest barrier they face when traveling to the grocery store. A quarter of households in other towns reported that distance was a barrier to grocery shopping while about half of households in Klamath Falls experienced no barrier at all (Figure 5). Interestingly, the choice of "other" was selected by about a quarter of respondents in each of the two locations (Figure 5). The most common other barriers listed were poverty/not having enough money, and challenges related to public transport. Other answers listed were having small children, physically unable, and not enjoyable or too crowded.

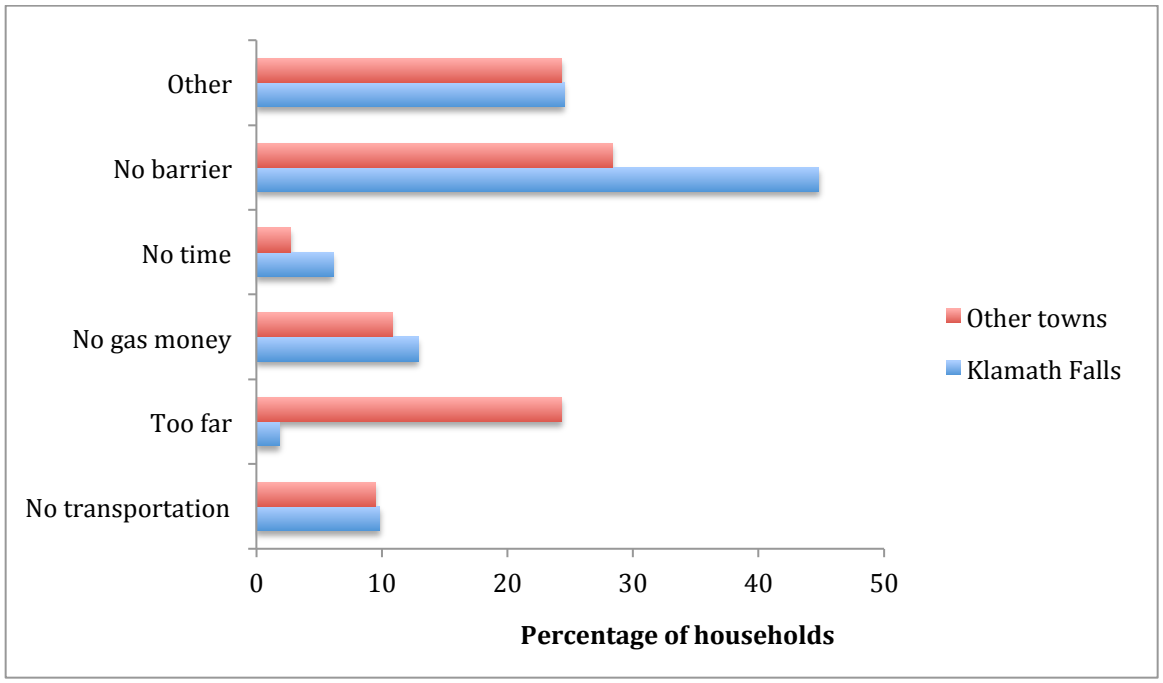

Figure 5. Barriers to grocery shopping for households in Klamath Falls and other towns.

Opinion of the foods at the stores closest to you

Survey respondents were asked to provide their opinion on different food groups sold at the store closest to their home. They were asked if each food group in the stores closest to them was affordable and of good quality and selection, was too expensive, was of poor quality, or offered poor selection. Figure 6 presents responses that were significantly different between households in Klamath Falls and households in other outlying towns. In all cases represented in Figure 6, outlying towns reported higher incidence of negative opinions related to food groups at their closest grocery store. Additionally, notable collective responses include: 48.80% of respondents said fresh fruits were too expensive, 59.27% of respondents said red meat was too expensive, and 56.45% of respondents said fish was too expensive. Furthermore, it was very important to 41.15% of households to buy local food, moderately important to 24.28% of households, somewhat important to 18.51% of households, and 16.05% of households did not prioritize buying local at all.

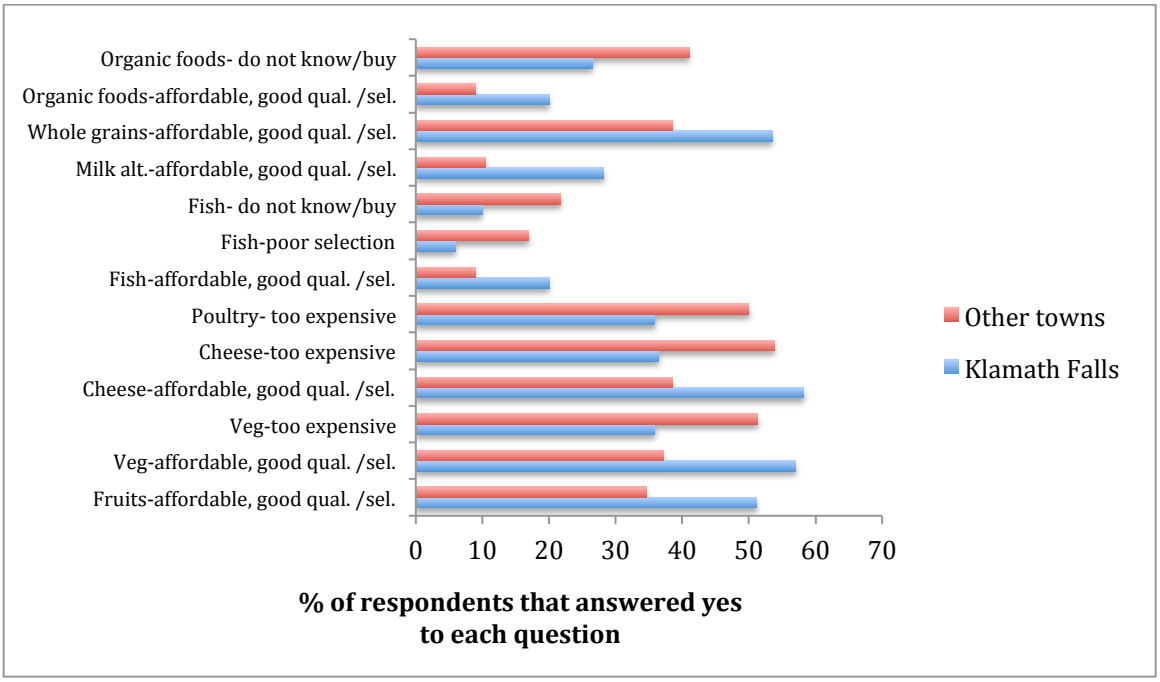

Figure 6. Respondents provided their opinion about each food group at their closest grocery store. This graph shows responses that differed significantly between households in Klamath Falls and households in outlying towns.

Cooking

Key trends:

- *A little less than half of all respondents faced barriers to cooking.*
- *Households in outlying towns had significantly greater challenges with accessing ingredients needed to cook than those in Klamath Falls.*

Respondents were asked if they faced any barriers to cooking meals at home. A little over half (51.65%) of people faced no barriers to cooking meals. Of those who experienced barriers, 7.44% of people said they had no time to cook, 4.94% said they did not know how to cook, 10.70% said they did not like to cook, 5.35% said their family will not eat what they cook, 14.81% said it was too expensive to cook, 7.41% said they lacked essential kitchen equipment, 4.94% said they did not have kitchen space, and 1.24% said they lacked water. Additionally, 20.48% of respondents said they experienced other barriers to cooking including lack of time when working full time, lack of money to buy a new oven, cookware, or propane, and routine consumption of convenience foods. Some respondents expressed how much they loved to cook and their commitment to fixing healthy meals and buying organic and non-GMO foods. Significantly more households in other towns (9.33%) as compared to households in Klamath Falls (1.80%) lacked ingredients needed for cooking.

Food Security

Key trends:

- *57.26% of households are experiencing very low food security*
- *In Klamath Falls, 51.20% of surveyed households worried about running out of food or ran out of food in the past year. In other outlying towns, 70.13% of households reported they had this same experience.*
- *Collectively, 34.45% of respondents ran out of money for food at least once a month, 9.66% of respondents ran out of money for food at least once a week, and 9.24% ran out a few times a year.*
- *Households in outlying towns relied more on hunting and fishing to deal with food insecurity than those in Klamath Falls.*
- *Households in Klamath Falls relied more on relatives, food assistance, and changing the size and the number of meals consumed to deal with food insecurity.*

Each survey respondent indicated if they, in the past year, worried about or ran out of food, ran out of money to buy food, or used certain strategies to cope with not having enough money to buy food. In Klamath Falls, 51.20% of surveyed households worried about running out of food or ran out of food in the past year. In other towns, 70.13% of households reported they had this same experience.

When households were asked how often they ran out of grocery money, 21.01% responded never and 25.63% responded rarely, while 9.66% ran out of money for food at least once a week, 34.45% at least once a month, and 9.24% a few times a year. Figure 7 shows the proportion of households in each location who used different strategies to deal with not having enough money to buy food. Those in outlying towns relied more on hunting and fishing than those in Klamath Falls while households in Klamath Falls bought less expensive food, relied more on food assistance and relatives, and changed the size and the number of meals consumed. Significantly more households in Klamath Falls relied on relatives for food than those in other towns.

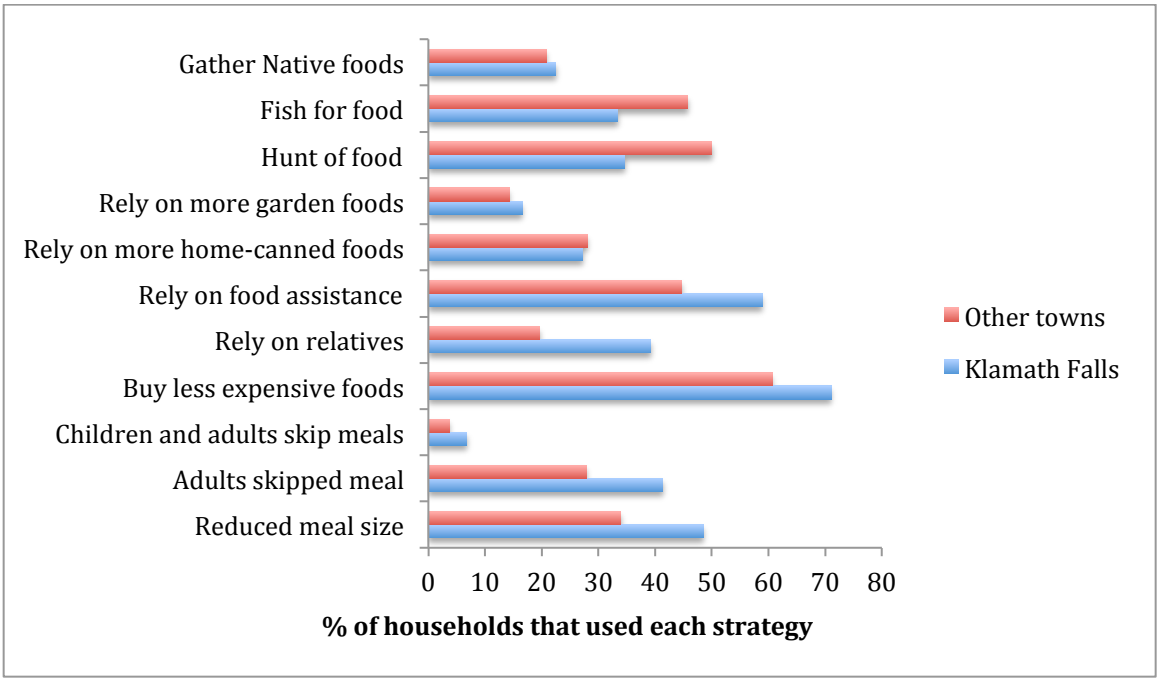

Figure 7. The proportion of households in Klamath Falls and other outlying towns who used each strategy to deal with not having enough money to buy food.

In our assessment, we used conventional definitions and categorizations developed by the USDA to measure food security, examining household food intake, access to healthy foods, and food insecurity coping strategies as reported above. Food security categories used in this study were adapted from the USDA Economic Research Service definition of food security[3] and are characterized as follows. Households with *high food security* report no indications of food access problems or limitations and are considered food secure. Households with *marginal food security* report some level of change in food sufficiency, such as not always having access to healthy foods, sometimes running out of money for groceries, using food assistance and/or buying less expensive food. *Low food security* households are those that report greater reduction in quality but do not yet utilize extreme coping strategies found among very low food security households. Low food security households may report that they rarely have access to healthy foods, run out of money for groceries several times a year, depend on food assistance and/or buy less expensive foods. Households with *very low food security* face severe challenges, reporting never having access to healthy foods, often running out of money for food, and reducing food intake (Table 2). Given the vulnerability of many Native American households, to be included in marginal, low, or very low food security categories, households must meet at least one of the criteria listed for that category and no unique criteria for a more severe category (see

[3] "[A]ccess by all people at all times to enough food for an active, healthy life" (Coleman-Jensen et al. 2017). Includes at a minimum: a) "the ready availability of nutritionally adequate and safe foods," and b) "the assured ability to acquire acceptable foods in socially acceptable ways" (e.g. "without resorting to emergency food supplies, scavenging, stealing, and other coping strategies") (USDA 2017b).

Table 2). For example, a household in the marginal category may usually have access to healthy foods, buy less expensive foods, but not have used food assistance in the last 12 months. High food security households must meet all criteria for that category (Table 2). In categorizing households, we found that most food insecure households have more than one attribute of food insecurity with the average frequency of food insecurity attributes increasing with severity of food insecurity. We also found that very low food security households experienced not only more indicators but more severe indicators of food insecurity, as one might expect.

Table 2. Characteristics of food security categories used in this study. Households in the high food security category are characterized by no indication of food insecurity and thus must meet all the criteria in the "high food security" row of the table. Households in subsequent categories must meet at least one criteria in a given category and no unique criteria for a more severe category (underlined in italics).

	Access to healthy foods	**Ran out of money for groceries**	**Coping strategies**	**Ran out or worried about running out of food**	**Used food assistance[a]**	**Qualified for food assistance but did not use**
High food security	Always	Never	None	No	No	No
Marginal food security	Usually	Rarely	Buy less expensive foods	Yes	Yes	No
Low food security	Rarely	A few times a year	Buy less expensive foods	Yes	Yes	No
Very low food security	Never	At least once a month or once a week	Buy less expensive foods Reduce size of meals Adults and children skip meals	Yes	Yes	Yes

[a]Excluding free school lunches and senior meals

Using this method to assess food security in Klamath Tribes households, we found that 57.26% of households are experiencing very low food security, 8.06% low food security, 26.21% marginal food security, and 8.47% high food security (Figure 8).

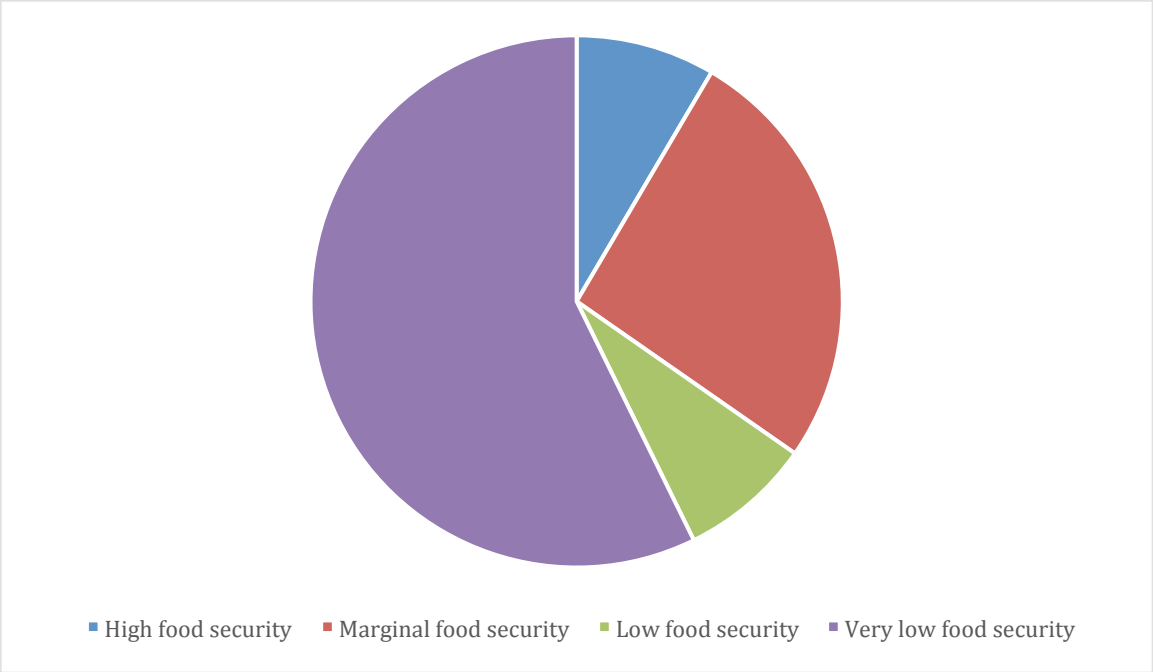

Figure 8. The proportion of Klamath Tribes households that are experiencing high, marginal, low, and very low food security.

About 70% of households in Klamath Falls are experiencing low or very low food security while 55.70% of households in outlying towns were experiencing the same (Figure 9).

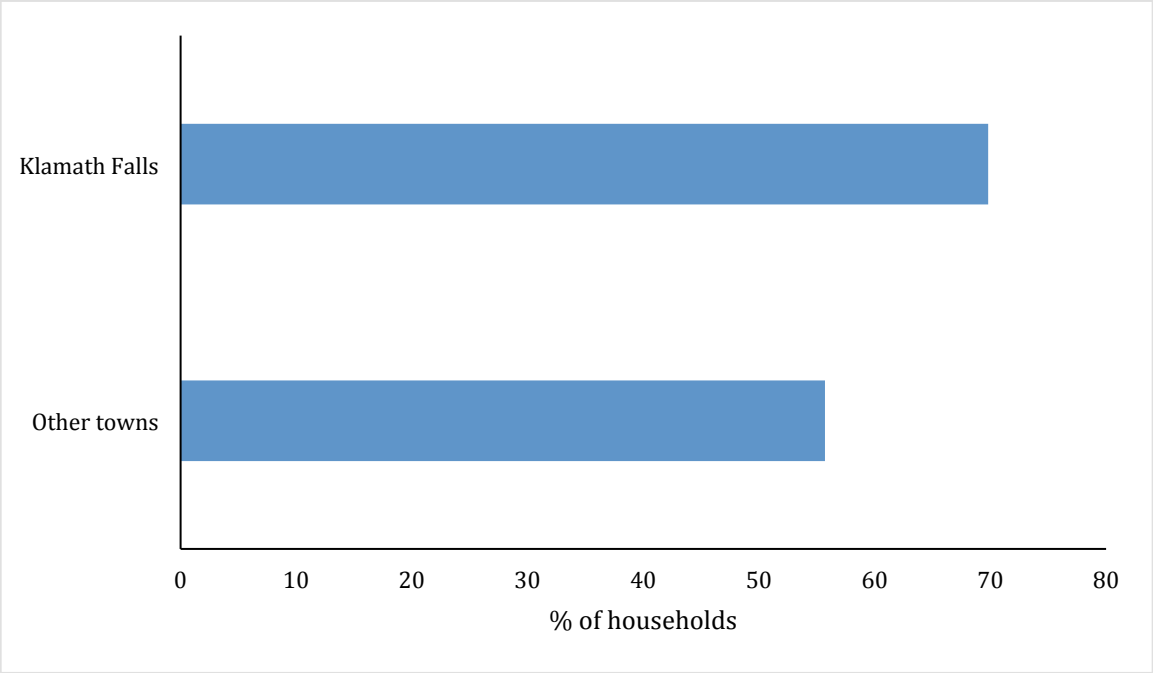

Figure 9. The proportion of Klamath households in each service area experience low or very low food security.

Native foods security

Additionally, we developed a novel indicator of food security, access to desired Native foods or *Native foods security,* to explore the contributions of Native foods to overall food security for Native American communities[4]. Through our analysis, we found that Native foods security is indeed an important indicator of overall food security for Native American households and should therefore be included in standardized food security assessments in Native American communities. Recognizing that *access* to Native foods is insufficient, we offer a definition of *Native foods security* that includes both access to all desired Native foods *and* the continuity of cultural, knowledge and stewardship practices that sustain them. *Native foods security is having physical, economic, social and legal access to all desired Native foods in the appropriate quality and quantity throughout the year, and the continuity of the cultural institutions that sustain them including traditional ecological knowledge, social support networks, and cultural resource stewardship* (Sowerwine and Mucioki et al. 2019). This definition is not intended to substitute for the USDA definition of food security but to enhance it; we intend it to serve as a supplement or addendum to the current definition of food security specifically for Native American communities. In other words, we argue that Native *foods* security contributes to *Native* food security.

Food Assistance Programs

Key trends:

- *Collectively, 70.74% of respondents used at least one type of food assistance in the past year.*
- *The use of SNAP and food pantries was significantly greater in Klamath Falls.*
- *Households in outlying towns were more reliant on tribal commodities, soup kitchens, and senior meals.*
- *21.28% of respondents said they relied on food assistance because Native foods were not available.*
- *29.19% of respondents in Klamath Falls relied on other forms of food assistance because their SNAP benefits had run out.*

Collectively, 70.74% of respondents used at least one type of food assistance in the past year. Figure 10 shows the proportion of households in Klamath Falls and other towns who utilized specific food assistance programs in the past year. The use of SNAP and food pantries was statistically significant by location. In each instance, households in Klamath Falls utilized these programs more than those in other towns, with food pantry users in Klamath Falls nearly double that in other towns. The percentage of WIC users in Klamath

[4] By using the term "Native *foods* security," we draw attention to the state of having secure access to Native foods at all times in the desired quality and quantity, as distinguished from the state of Native American people being food secure more generally, which might be referred to as "Native *food* security".

Falls was also double that in other towns. However, households in outlying towns were more reliant on tribal commodities, soup kitchens, and senior meals.

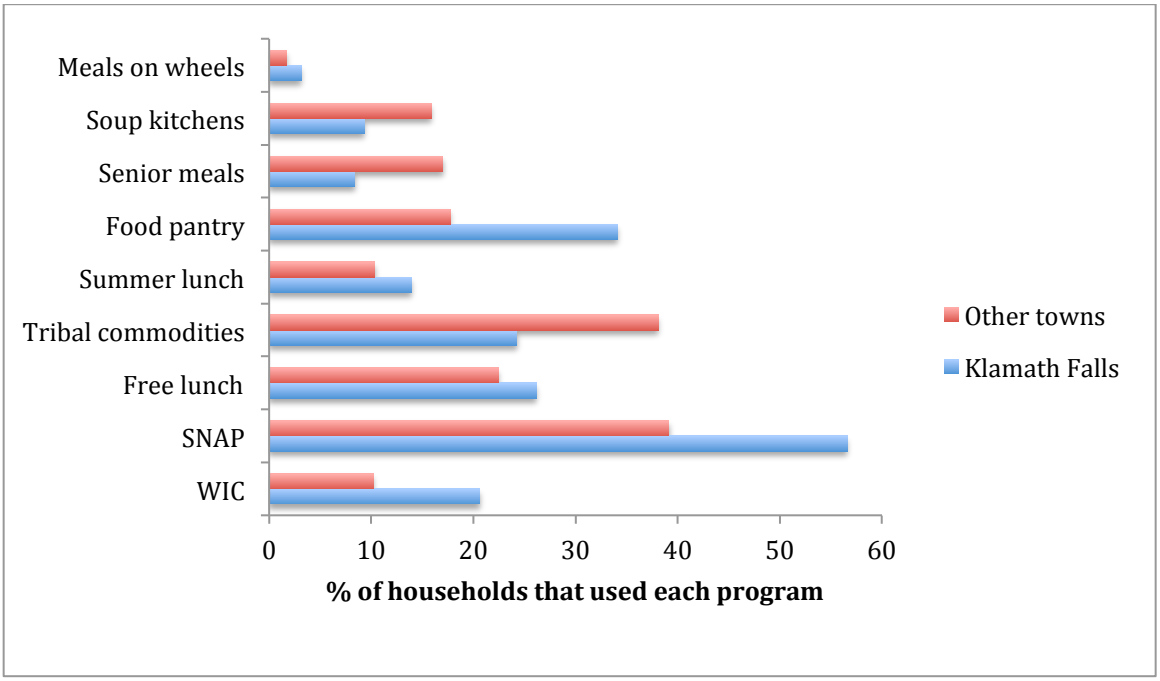

Figure 10. The use of food assistance programs in Klamath Falls and other outlying towns.

Respondents were asked to share the reasons that their household used food assistance. Collectively, respondents identified the following reasons: 13.62% had unusual expenses for the month, 8.94% had experienced a recent job loss, 13.19% experienced continuous unemployment, 2.55% were separated from their spouse, 2.13% had money or food stamps stolen, 21.28% said Native foods were not available, 10.21% said gardens were not available, and 20.51% said other. Some of the other reasons given were convenience and socializing during senior meals or free lunch, lack of money, pregnancy or maternity leave, and inability to get Native foods because of criminal record. The experience of running out of SNAP benefits was statistically higher in Klamath Falls (29.19% of respondents) than other towns.

Respondents were asked what type of foods they would like to see more of in food assistance programs. Collectively, about half or more of the survey respondents expressed the desire for more fresh fruits, fresh vegetables, red meat, poultry, fish, and dairy. Out of the Native food options, 46.43% of households desired more salmon, fish, or other seafood, 52% desired more deer and elk, 23.11% desired more acorns, 44.20% more berries and nuts, and 33.33% more mushrooms. When asked which foods people desired the most in food assistance programs, respondents prioritized fresh fruits, fresh vegetables, red meat, dairy products, and deer, elk, and aquatic foods from rivers and lakes.

Homegrown and home raised foods

Key trends:

- *29.96% of people grew or raised food at their home.*
- *35.96% of people said they would like to start or expand home food production but faced challenges. The most common inhibiting challenges were lack of money, time, knowledge, space, or water and short growing seasons.*
- *50% of people wanted to learn more about growing or raising food at home.*
- *Only 4% of households participated in a community or school garden while 44.50% of people said if given the opportunity they would like to participate.*

Collectively, 29.96% of survey respondents grew or raised food at home. Figure 11 shows what respondents did with homegrown foods. Most commonly respondents shared homegrown food with others, preserved their harvest, or consumed their harvest at home (Figure 11). About a quarter of respondents would like to start producing their own food or expand their current production, while 35.96% would like to do the same but experience challenges that may not allow them to do so. Such inhibiting challenges include lack of money, time, knowledge, space, or water and short growing seasons. Additionally, 50% of respondents wanted to learn more about growing or raising their own food. People were most interested in learning more about soil fertility (63.91%), how to deal with pests and weeds (65.41%), greenhouse gardening (57.89%), irrigation (49.24%), and crop planning and crop selection (45.11%). Only 4% of households participated in a community or school garden while 44.50% of people said if given the opportunity they would like to participate.

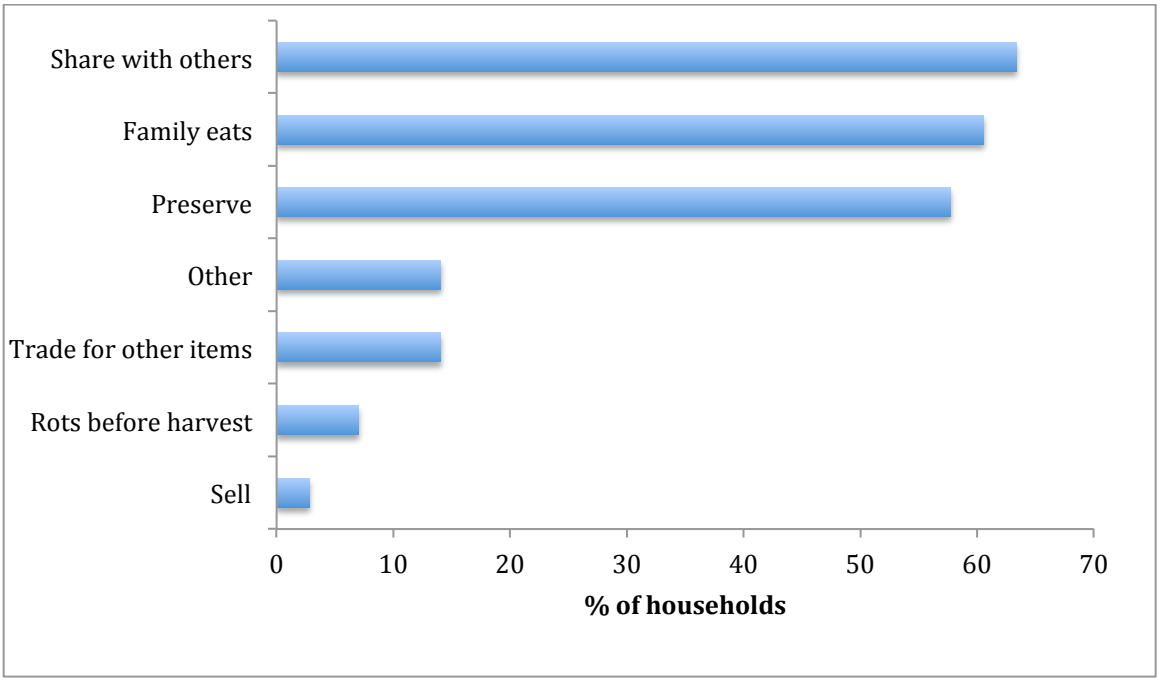

Figure 11. What survey respondents did with their homegrown or raised foods.

Native Foods

Key trends:

- *Significantly more households in other towns (85.53%) consumed Native foods at least once year than households in Klamath Falls (68.05%).*
- *About 85% of people consumed deer, about 80% of people consumed salmon and about 65% of people consumed elk at least once a year.*
- *Seeds, eel, and acorns were consumed by 10% or less of respondents at least once a year.*
- *The consumption of elk was significantly higher in outlying towns (41.02 days/year) than in Klamath Falls (16.51 days/year).*
- *The average consumption of eel was less than half a day per year for all households.*
- *Collectively, not having enough Native foods available and heavy degradation of the environment were strong and medium barriers to over 60% of respondents.*
- *Not being familiar with Native foods and not knowing how to prepare Native foods were not barriers to about 70% of respondents, yet more than 55% of respondents said they wanted classes on how to gather, prepare and preserve.*
- *40% of respondents reported being self-taught with regards to Native foods*

Respondents were asked if their household ate Native foods at least once a year. Significantly more households in other towns (85.53%) consumed Native foods at least once a year than households in Klamath Falls (68.05%). Figure 12 shows how households that ate Native foods at least once a year acquired the food. Respondents most commonly sourced Native foods from family and friends or through gathering, hunting, or fishing on their own. Figure 13 shows what respondents did with the Native foods they obtained. Most households consumed the foods, preserved the foods, or shared the foods (Figure 13).

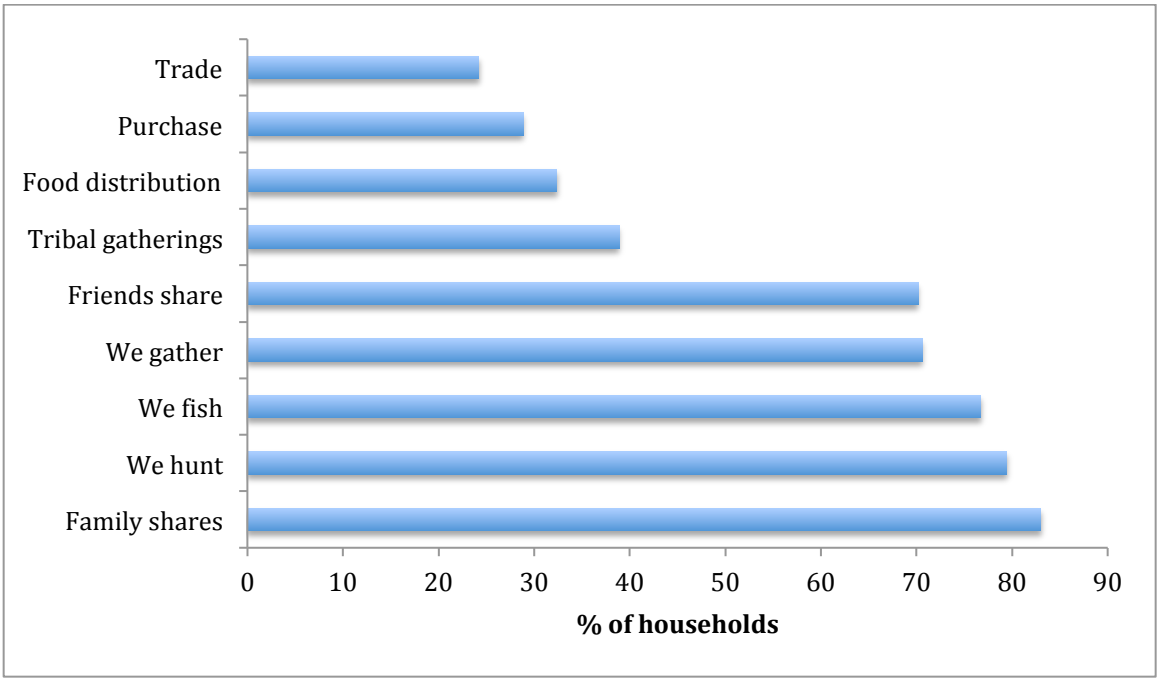

Figure 12. This graph shows how households obtained Native foods that they consumed at least once a year.

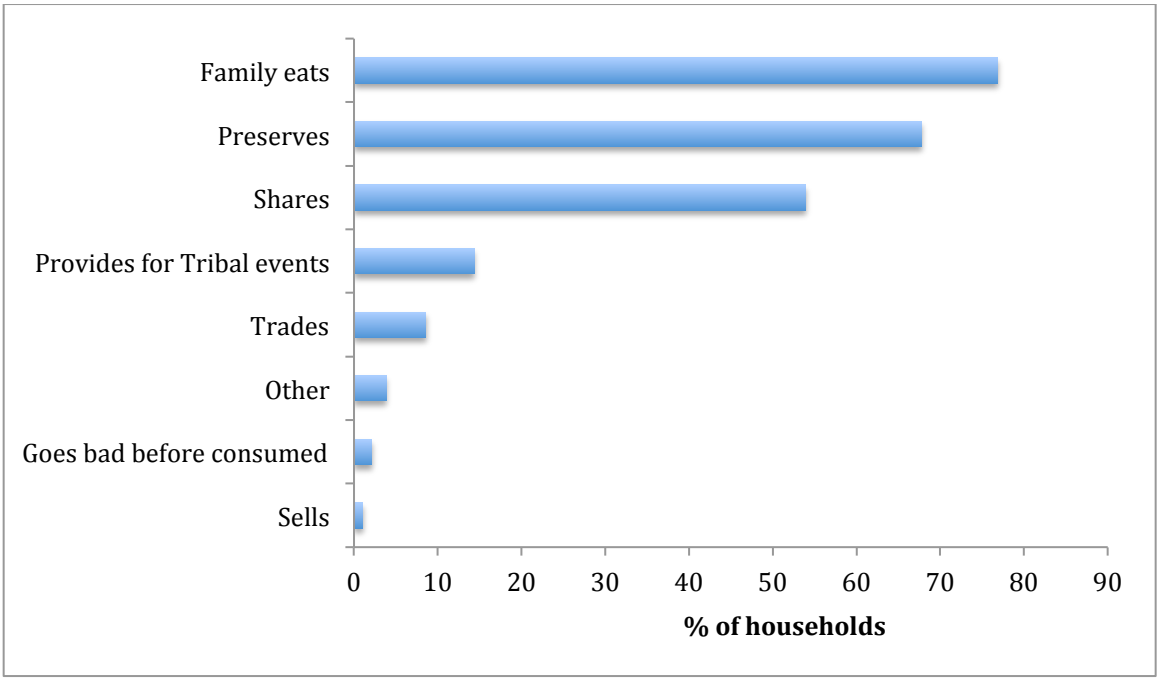

Figure 13. This graph shows what households did with Natives foods they received or obtained.

Household consumption of Native foods

Households that consumed Native foods at least once a year were asked to select the specific Native foods that they consumed. Figure 14 shows the proportion of surveyed households that consumed each Native food at least once a year. About 85% of people consumed deer at least once a year. This was followed by about 80% of people consuming salmon and about 65% of people consuming elk. The three less-consumed foods were seeds, eel, and acorns, with 10% or less of respondents consuming these foods at least once a year. The average number of days of consumption for each Native food for outlying towns and Klamath Falls is reported in Table 3. The consumption of elk was significantly higher in outlying towns (41.02 days/year) than in Klamath Falls (16.51 days/year). This trend was the same for deer and wild mushrooms. The consumption of acorns and salmon was greater in Klamath Falls. Collectively, the average consumption of eel was less than half a day per year. Each respondent was then asked to rank the top five Native foods they would like more of in their household. Respondents prioritized salmon, deer, berries, and other fish as the Native foods they most desired to consume more often.

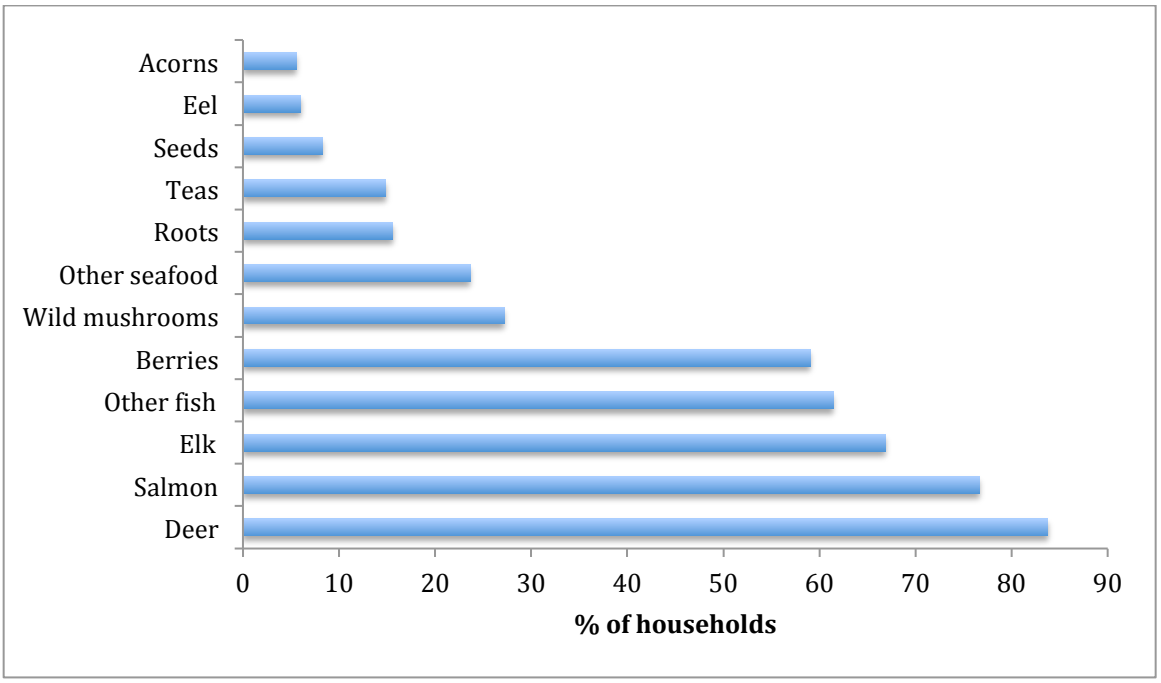

Figure 14. The proportion of households that consumed each Native food at least once a year.

Table 3. The average number of days respondents in each location consumed a given Native Food in the past year.

	Household consumption in Klamath Falls (days/year)	**Household consumption in other towns (days/year)**
Salmon	13.35	9.60
Eel	0.21	0.36
Other fish	12.77	13.5
Other seafood	3.43	6.26
Deer	31.40	51.49
Elk	16.51	41.02
Acorns	6.71	0.78
Wild mushrooms	8.11	17.26
Roots	2.73	2.29
Berries	15.46	13.09
Tea	20.11	6.86
Seeds	14.56	0.85

Barriers to Native foods

Next respondents identified barriers that made it hard for their households to get all the Native foods that they desired in the past year. Collectively, not having enough Native foods available and heavy degradation of the environment were strong and medium barriers to over 60% of respondents. Not being familiar with Native foods and not knowing how to prepare Native foods were *not* barriers to about 70% of respondents. Transportation was a barrier to about 50% of respondents. Figures 15 - 18 show barriers to Native foods that were statistically different between households in Klamath Falls and households in other towns. Lacking knowledge about hunting, gathering, and fishing, not having anyone to bring them Native foods, rules and permits, and not knowing where to find Native foods were stronger barriers for households in Klamath Falls.

Respondents were asked what would make it easier to incorporate Native foods into their diet, thus minimizing some of the barriers identified in the previous question (Figure 19). Respondents most desired classes on gathering, classes on fishing, removal of legal barriers, incorporating Native foods into tribal food distribution programs, and improved management (Figure 19).

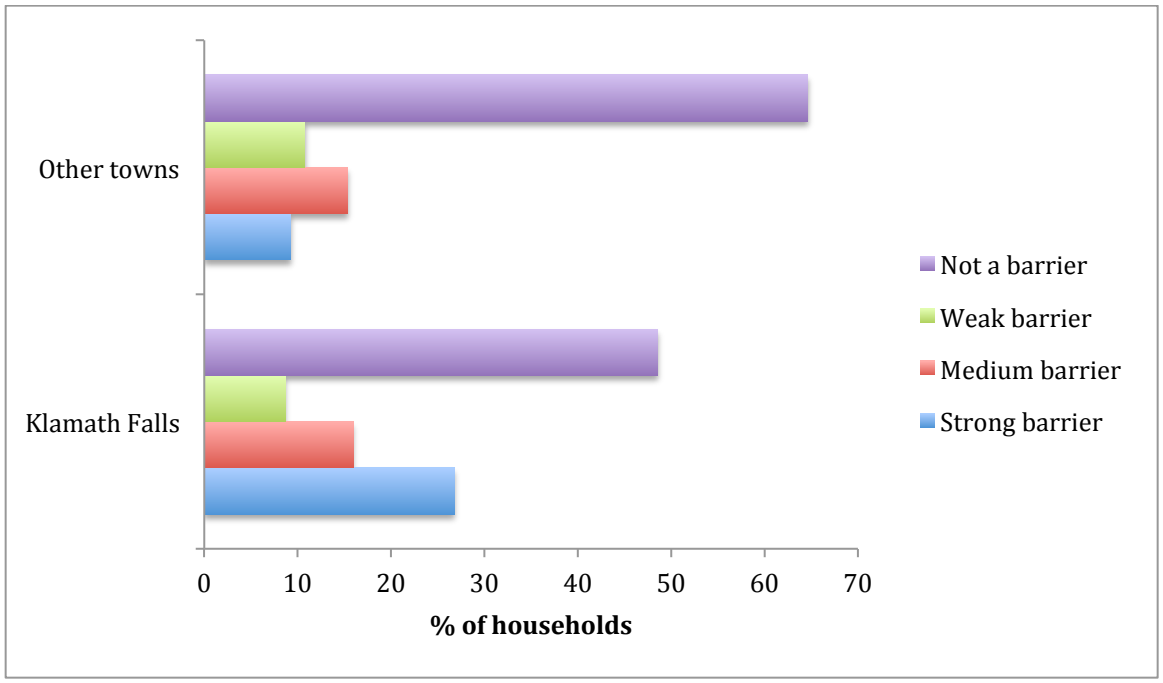

Figure 15. The proportion of households in Klamath Falls and other towns who said lacking knowledge about hunting, gathering, and fishing was a barrier. This barrier was statistically different between households in other towns and households in Klamath Falls.

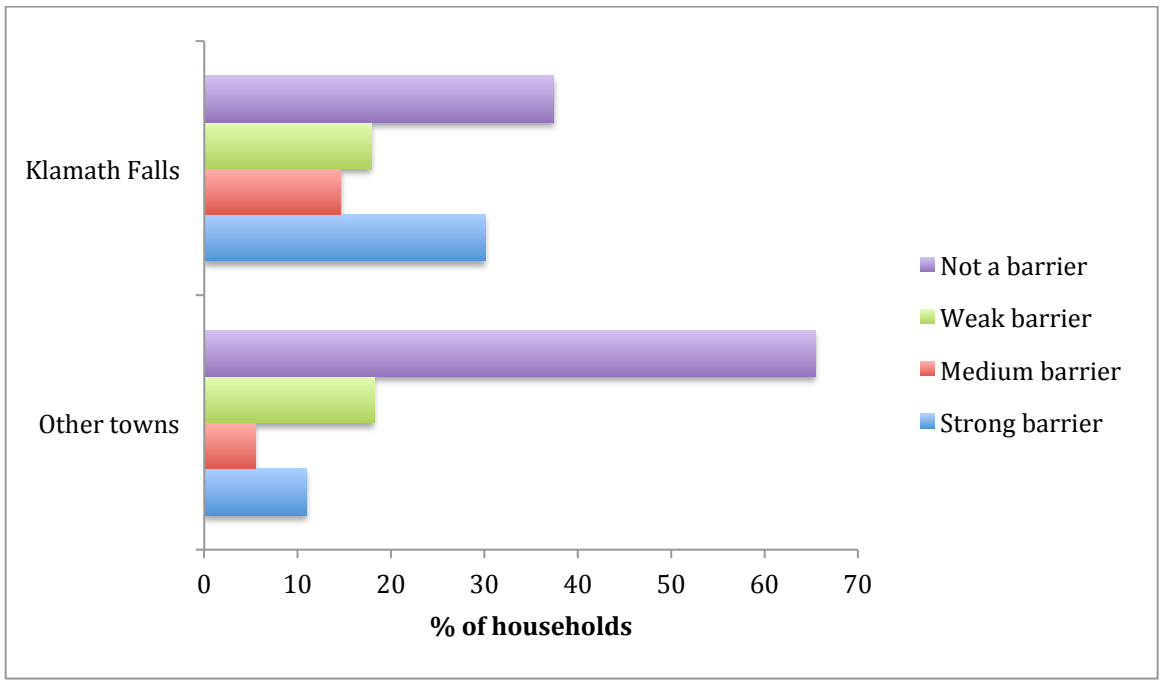

Figure 16. The proportion of households in Klamath Falls and other towns that said having no one to bring them Native foods was a barrier. This barrier was statistically different between households in other towns and households in Klamath Falls.

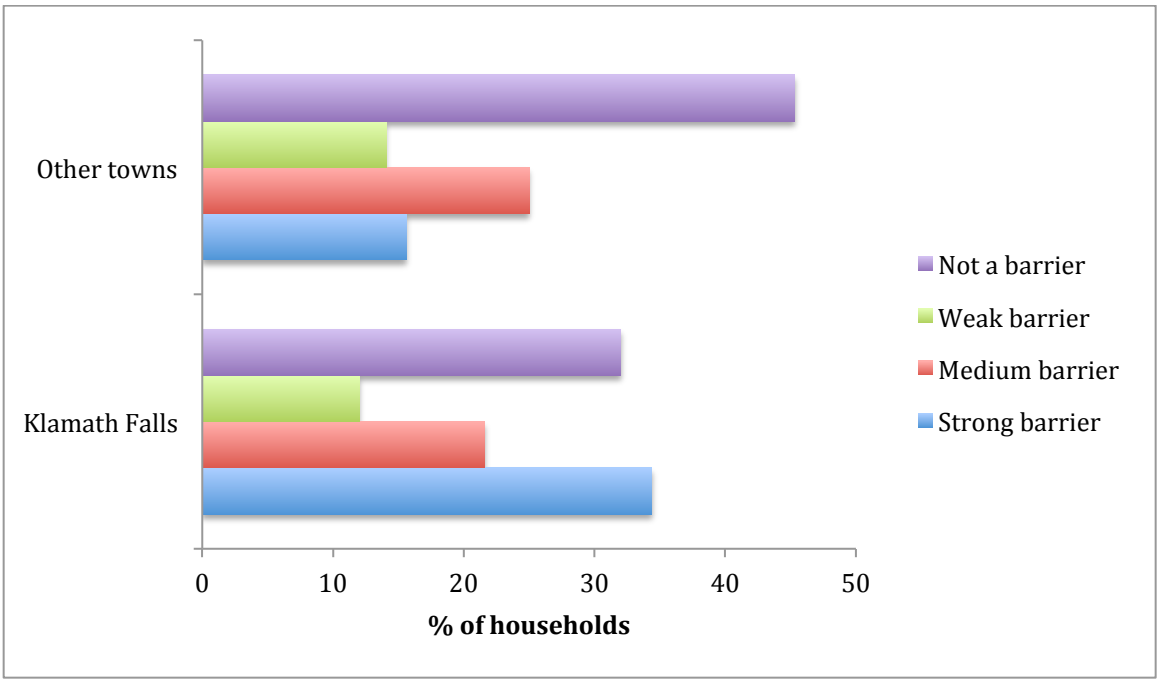

Figure 17. The proportion of households in Klamath Falls and other towns that said rules and permits about gathering, fishing, and hunting Native foods was a barrier. This barrier was statistically different between households in other towns and households in Klamath Falls.

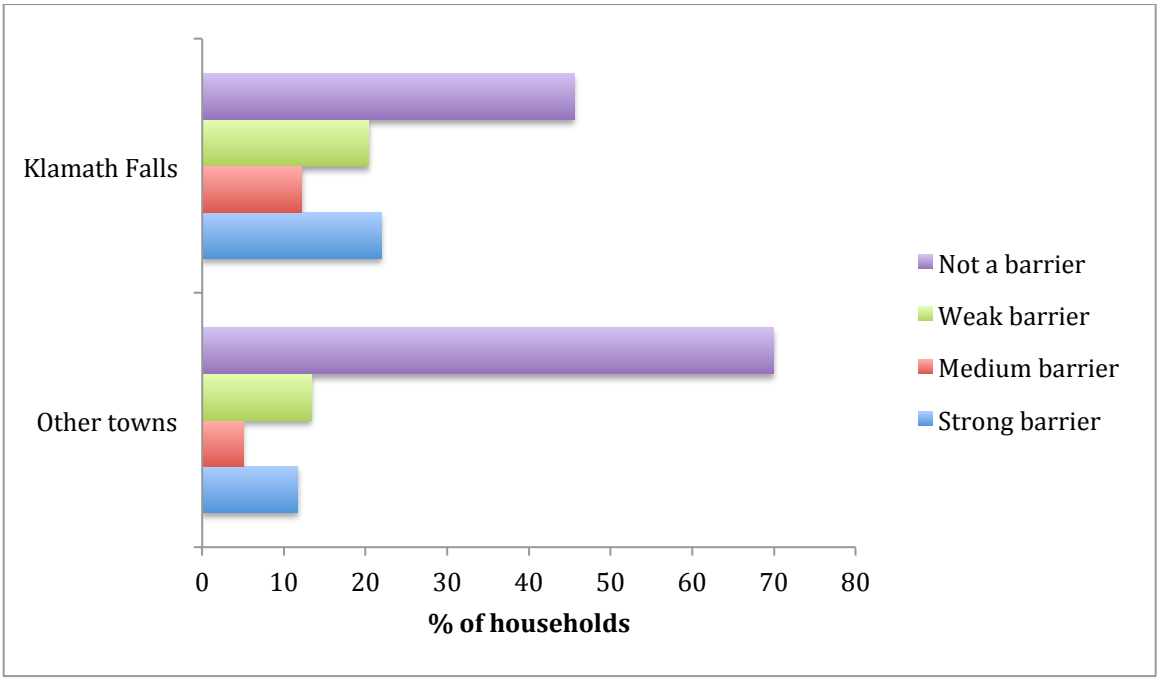

Figure 18. The proportion of households in Klamath Falls and other towns that said not knowing where to find Native foods was a barrier. This barrier was statistically different between households in other towns and households in Klamath Falls.

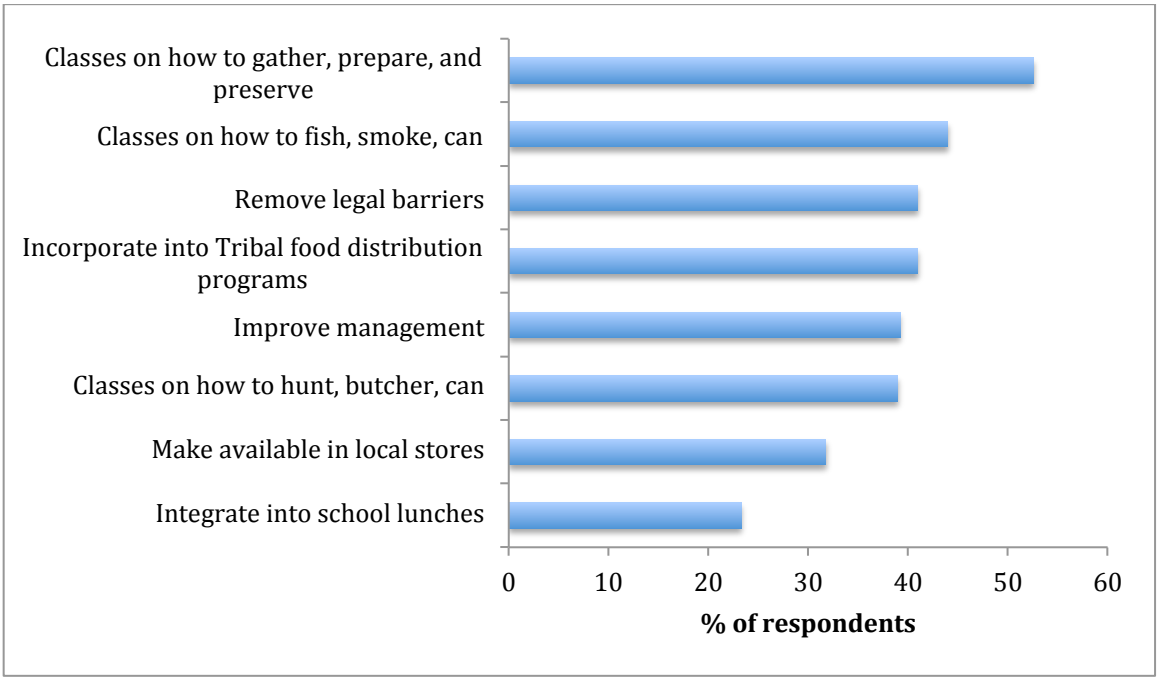

Figure 19. Things that would make it easier for tribal families to incorporate more Native foods into their diet.

Knowledge related to gathering, hunting, fishing, preparing, and managing Native Foods

Over half of respondents (55.93%) had shared knowledge about gathering, fishing, hunting, preparing or managing Native foods or materials with other people. Knowledge was most commonly shared with respondents' children, other family members, friends, and nieces or nephews (Figure 20). Survey respondents most commonly acquired knowledge from family members, through teaching themselves, or from an unrelated person (Figure 21). Lastly, respondents were asked to rank the top four topics related to Native foods and materials that they wanted to learn about the most. Rankings were very similar between households in Klamath Falls and other towns. Collectively, respondents wanted to learn where to gather, when to gather, how to prepare traditional medicines, and how to prepare traditional foods.

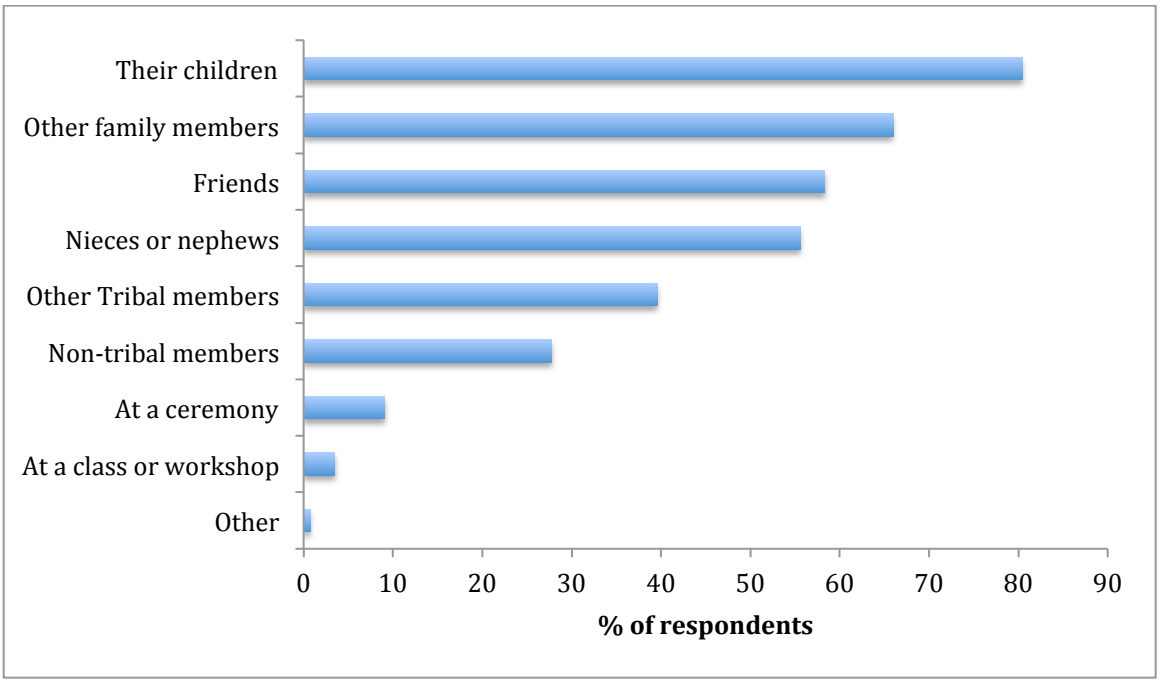

Figure 20. With whom or where respondents shared Native food or material related knowledge.

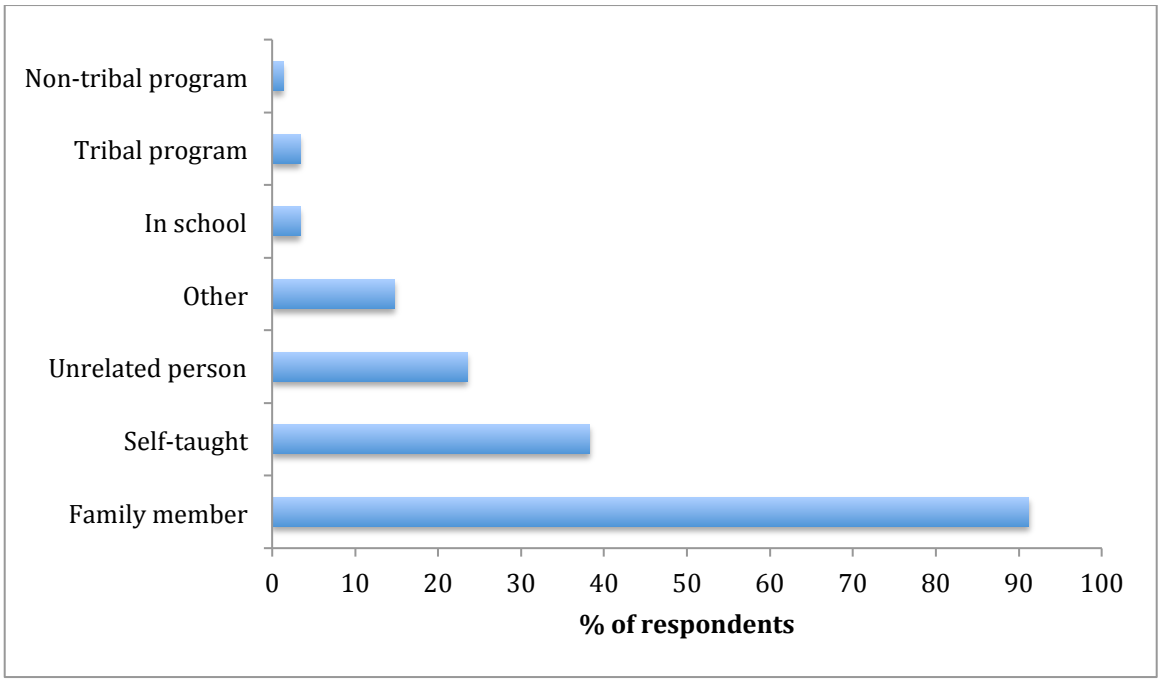

Figure 21. How respondents acquired Native food or material related knowledge.

Community resources and food education

Key trends:

- *The most desired community resources were a weekly vegetable box, farmers market, and community smokehouse.*
- *Respondents preferred to receive food-related information through their P.O. Box, the local newspaper, their email, Facebook, or a website.*

Survey respondents were asked which of the following community resources they would use if they were available in their community. Figure 22 shows the resources that people were interested in using. The most desired community resources were a weekly vegetable box, farmers market, and community smoke house. Next, respondents were asked how they would like to receive food-related information. Having information mailed to their P.O. Box was the top choice followed by local newspaper, email, Facebook, and website.

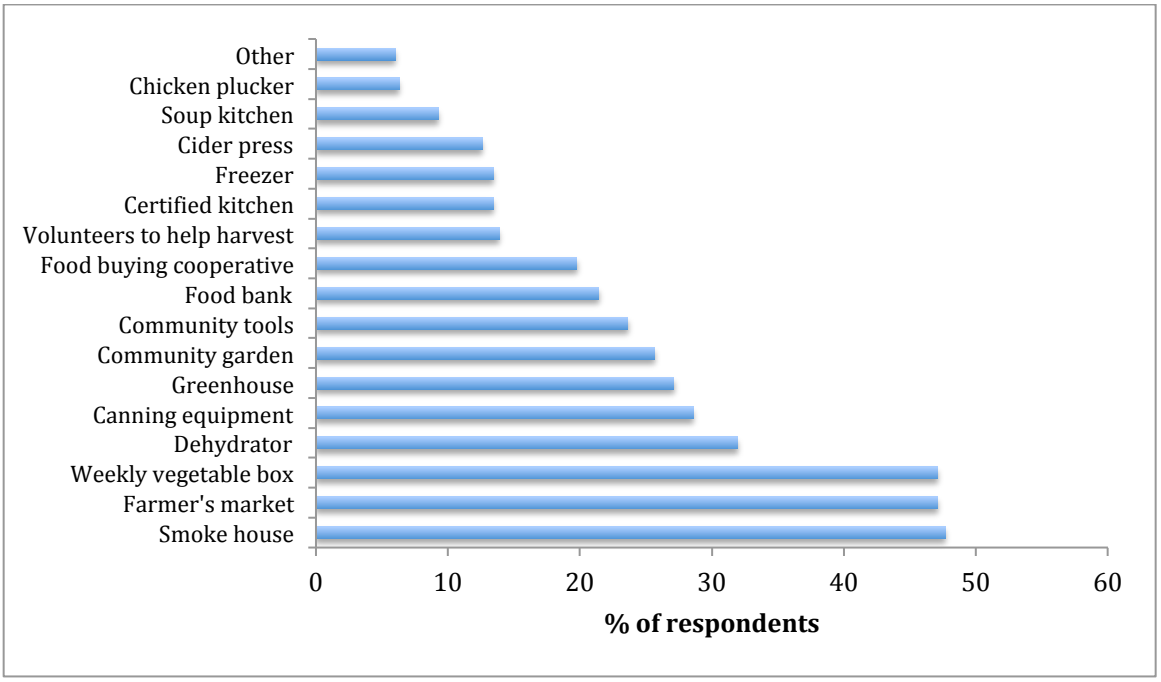

Figure 22. Respondent interest in using potential community resources.