



# Anchorage and the Local Food System

Center for Community Engagement and Learning  
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Alaska Center for the Environment  
Alaska Farm Bureau  
State of Alaska Department of Health and Social Services  
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## **Introduction**

Alaska is a large but remotely located state dependent on long distance importation of most goods, including food. With increased urbanization and population growth founded on the petroleum industry and supporting services, the dependence on imported food items has grown. The just-in-time delivery system upon which modern, economically competitive manufacturing and retail is contingent is the norm in Alaska. The amount of stored food stocks available in case of an interruption in the supply chain is uncertain, and estimates have placed it from three to ten days of goods on store shelves.

For a state that prides itself on rugged individualism and independence, Alaska is uncomfortably reliant, at least in regards to food stocks sufficient to feed its population, on the outside world through imported grains, produce, and meats and dairy items. This is quite a change from earlier days when local food production was often sufficient to feed the inhabitants and high-latitude agriculture was actively studied through a series of agricultural experiment stations established around the state (Agroborealis 1998).

Those stations proved useful, and new strains of produce that could succeed in such a climate were developed and disseminated. Being part of the state's settlement history, pride in agriculture has been strongly held (Lewis & Pearson 1998), and contemporary efforts to resurrect the importance of agriculture in Alaska have been growing (Alaska Grown Online 2009; Bluemink 2009; AK Root Cellar 2009). There is the Alaska Grown effort, the increased success of farmer's markets, and several agencies touting the economic, ecological, healthful, and cultural benefits to buying local.

As concern for food safety, vibrancy of local economies, and ecological well-being grows, so grows the number of first steps in assessing community food systems (Thompson et al. 2008; Harper 2007; Unger & Wooten 2006). Previous investigations into food systems and food security in Alaska have focused on issues of access and nutritional utilization in rural communities (Loring and Gerlach 2009; Caulfield 2000), but little has been done, despite the increasing number of concerned voices (ACE 2009; AFG 2009; ADN 2008; ADOA 2009), to earnestly address the matter in Alaska's urban communities.

With a population approaching three hundred thousand, Anchorage is the primary hub of economic activity in the state and possesses the major airport and marine port system through which the bulk of the state's imported goods flow. Most of this exogenously introduced food is delivered to retail outlets of various size and affiliation, where it is passed on to end or near-end consumers, to food-serving institutions (such as prisons, hospitals, and schools), and to scattered, informal food-buying co-ops. This type of flow, although arriving in Anchorage, is not limited to its boundaries, and it continues on its way to similar arrangements throughout the state.

As for the endogenously introduced food, Anchorage relies on the adjacent Matsu Valley for much of the local agricultural goods made available through farmer's markets, a few community supported agriculture (CSA) setups ([http://dnr.alaska.gov/ag/ag\\_FFPD.htm](http://dnr.alaska.gov/ag/ag_FFPD.htm)), and through main retail outlets, marketed as Alaska Grown produce. As well, Anchorage is an important market place for Valley produced goods, and there is a symbiotic relationship between the two communities in regards to regional endogenous food and reciprocal cash flow.

Outside of this local supply source, there are a limited number of urban gardens of variable scale and model, including city park space for rent (<http://www.muni.org/Departments/parks/Pages/GardenPlots.aspx>), a refugee assistance program garden with a very small commercial end ([http://www.cssalaska.org/files/RAIS/-RAIS\\_small.pdf](http://www.cssalaska.org/files/RAIS/-RAIS_small.pdf)), modest demonstration pesticide-free gardens on school grounds, and an unknown number of backyard gardens. One of the most acute threats to the valley farmland is accelerated rural to urban immigration and the subsequent real-estate development (<http://www.ktuu.com/news/ktuu-farm-land-dwindling-matanuska-valley-20110516,0,2696326.story>). With the competitive pricing of imported foods, the short-term economic value of the farmland has been diminished, and agriculture as a share of the economic activity has waned.

More complex than just a set of ‘field to table’ activities, food systems are a multi-level, multi-scale series of interrelated actions and behaviors that include human-environmental interactions, the full range of production, processing, and consumption, contemporary market practices and policies, and the societal outcomes, such as food security, environmental health, and social welfare (Erickson 2008). The last few decades have seen an increased vertical integration in the processing and packaging of food, ushering in a corporate concentration of the food supply (Hendrickson and Heffernan 2002, Boehlji et al. 1999) and drawing much criticism over food safety, corporate monopolization of a vital resource, and a subsequent disconnect between people and the source of their food in this modern food system (*The Future of Food* 2004; *Food, Inc.* 2008). As evidenced by increasing activism of organizations such as the Community Food Security Coalition ([www.foodsecurity.org/](http://www.foodsecurity.org/)) and efforts of the United States Department of Agriculture’s Farm to Schools ([www.fns.usda.gov/cnd/f2s/](http://www.fns.usda.gov/cnd/f2s/)) and Farm to Table ([www.farmtotableonline.org/tag/usda/](http://www.farmtotableonline.org/tag/usda/)) programs, there is a growing effort to rectify this problem.

## **Project Description**

This project was intended to address the issue of food security and sustainability by assessing the current state of local food consumption and distribution in Alaska. It was initiated by University of Alaska Anchorage Professor Mark Carper and carried out with the help of UAA students and faculty. It consisted of two components, a household local food survey and a food basket survey. The definition of local food included on each survey and used throughout the project was “foods that are produced, hunted, and/or gathered in Alaska.”

The purpose of the household survey was to get a better understanding of how the Anchorage public participates in the local Alaska food system. This survey instrument was to be distributed to a large, random sample of the Anchorage population in order to get the more accurate representation. The survey included questions to help discern where residents get local food, how much local food they include in their diet, limitations for obtaining it, and their willingness to pay extra for local products. The survey also asked participants to indicate the Anchorage community in which they live. This was meant to help facilitate spatial analysis of the data without requiring that a specific address be given.

The food basket survey was meant to help determine the availability of local foods as well as evaluate their prices in relation to comparable imported products. This information was then used to identify differences based on community council region and store type/size. The survey consisted of recording the high and low prices for select types of foods at various grocery stores. Twenty-four popular food items that could also be grown in Alaska were selected. Seven categories of food were inspected: dairy, meats, seafood, storage crops, perishables, fruits, and sweeteners. If an Alaskan produced version of the product was present, its price and how it was identified as Alaskan grown were recorded. The latter was indicated by one of four categories: a label on the product, a small sign, a prominent sign or placed in an Alaskan section with other Alaskan products.

## **Methods**

### **Household Survey**

The primary component of the study was the resident survey which was distributed to people living in Anchorage as well as in Eagle River and on the military bases of Elmendorf and Fort Richardson. It consisted of seven questions, and it took participants approximately five minutes to complete. Residents were asked about their access to and consumption of local food, reasons why they may or may not eat locally-produced food, as well as their willingness to pay more for items produced in Alaska.

In attempts to reach as broad a population as possible, we visited a wide variety of venues for survey collection over the course of three months. We collected a total of 583 surveys from classrooms at UAA, various community council meetings, as well as popular public events such as the Fur Rendezvous and the Rage City Roller Girl Derby. To diversify the sample coming from students, we visited classes of varying levels and class times to reach not only young adults but also graduate students and people of older generations taking evening classes. Although we did not specifically target residents from either of the military bases, we included their survey responses when encountered since the military populations pay a significant contribution to the local economy, food-related or not. Due to time constraints and lack of opportunity, we could not visit every community council for surveying, but targeted meetings at which public attendance was expected to be high.

To incentivize survey participation, respondents had the option of entering their name in a drawing for prizes which had been donated by local businesses. Personal information provided by the participants for the drawing was not associated with survey responses to protect the anonymity of the data.

### Food Basket Survey

In addition to the household survey, this project also included a food basket survey of a variety of common grocery stores in Anchorage. We selected a broad assortment of food items which could potentially be produced in Alaska and surveyed grocery store shelves and stands to determine the availability of a locally-produced option, recording the price difference between the local item and its imported counterpart. We also recorded the way in which these local food items were displayed with signs or how they were organized in proximity to other locally-produced items (i.e. were locally-produced items given their own section on the shelves and advertised accordingly?).

The food basket survey was divided into dairy, meats, seafood, storage crops, perishables, fruit, and sweeteners. For dairy, we recorded the availability of 2% milk, medium cheddar cheese, and butter. For meats we surveyed ground beef, sirloin steak, whole chicken, and pork chops. Seafood included shrimp, red salmon (sockeye), and halibut. Storage crops were represented in the survey with potatoes, carrots, cabbage, and onions. Perishables included zucchini, broccoli, lettuce, chard, and kale. The fruit items surveyed were apples, raspberries, strawberries, and tomatoes. And finally, the sweetener represented in the survey was of course honey. For each item, we recorded the lowest and highest price for non-local items as well as the price of the locally-produced option, if available. Furthermore, we indicated how the local item was displayed as either container labeling only, small signs accompanying, prominent signs, or within an Alaska grown section. The stores that were surveyed included all the Fred Meyers and Carrs/Safeways, Natural Pantry and both New Sagaya locations, Red Apple, Super Wal-Mart (Dimond), and one Costco (Debarr) to represent bulk stores. Lastly, a visit was made to several of the farmer's markets, although this was done early in the season and produce was rather limited.

## **Discussion of Results**

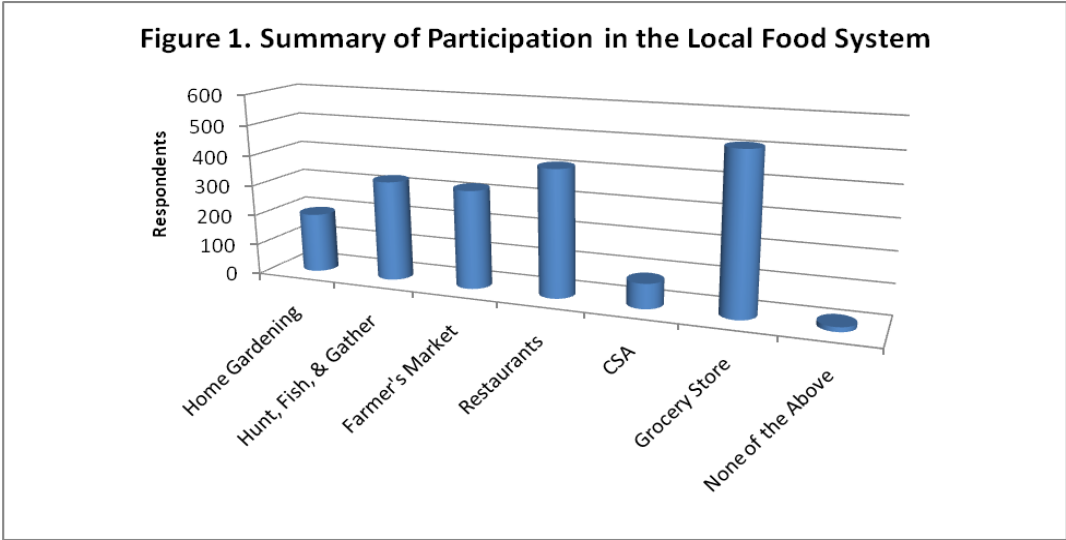
### I. The Household Survey

#### Question 1

The first question of the survey asked respondents about the ways in which they directly participate in the local food system. Participants could check as many of the options as applied which are represented in the categories in the graph below. As can be seen in figure 1, the purchase of local food through grocery stores was, at approximately 88% of the responses, the most reported means of acquisition, followed in rank order through restaurants (71%), foraging (56%), farmer's markets (55%), home gardening(33%), and least often through community supported agriculture (14%).

The reader should keep in mind that these activities were not mutually exclusive, and no analysis was conducted to determine any trends in overlapping actions. Also, the high indication of restaurants as one of the leading means of acquiring local foods leads us to believe that there was some

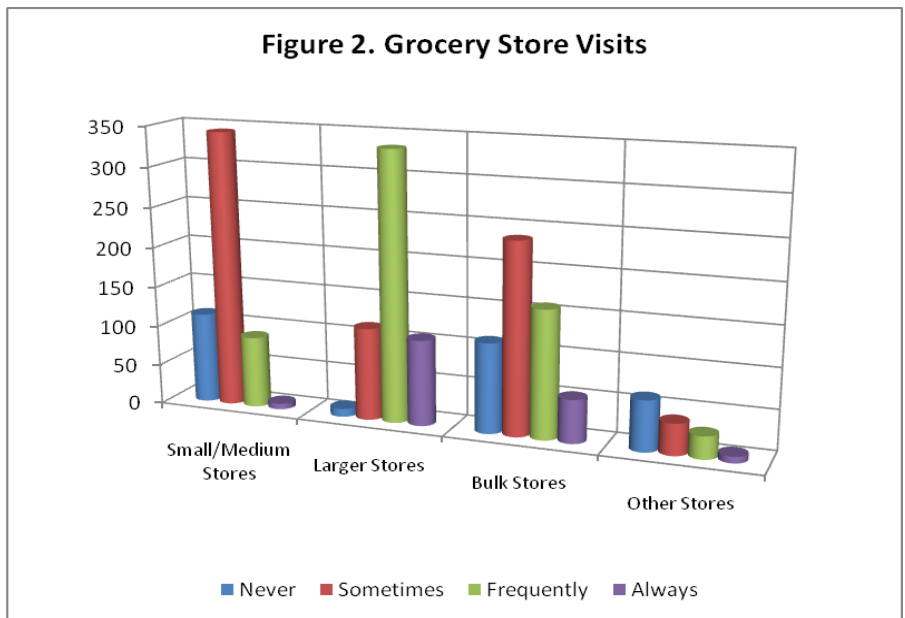
misinterpretation of this particular component and that respondents may have confused locally owned, non-franchised restaurants as providers of local foods, defined as “foods that are produced, hunted, and/or gathered in Alaska.” As indicated by AK Root Sellers, a small-scale food distribution company, there are multiple restaurants that



report offering locally produced goods on their menu (<http://akrootsellers.com/home.html>), although there’s no clear accounting for the volume. Yet another thing to keep in mind is that responses to this question intimate frequency more so than quantity. Therefore, it is unclear to what degree or percentage of a household’s food acquisition is derived by these various means.

Question 2

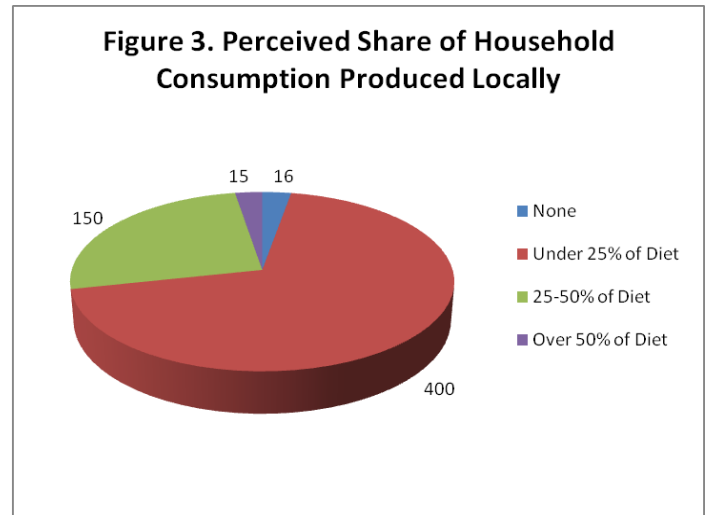
As can be seen in figure 2, the respondents, when getting locally produced goods via a grocery store, many of the respondents frequently do so, although not exclusively, through the larger stores, which were defined as stores such as Fred Myers, Carrs/Safeway, or Red Apple. For the smaller to medium sized grocers, such as New Sagaya or the Natural Pantry, which tend to be pricier, there was only a limited amount of acquisition of local goods. In the middle, in terms of brick and mortar nodes of getting access to local foods, were the larger bulk stores, such as Costco or Sam’s Club.



What this question does not adequately get at is what types of local foods are being obtained at each of these establishments. Anecdotal evidence indicates that the generally lower prices, as well as the larger availability of diverse items, at the larger stores lend toward a greater frequency of shopping at such stores, which is also supported by the greater number of stores as well as their overall square footage. Those seeking specialty items, such as freshly caught sea foods, may seek such items in the smaller stores, such as those mentioned above, or through specialty shops. A final caveat to consider is that respondents may have simply indicated the types of places at which they shopped in general rather than specifically for local products.

### Question 3

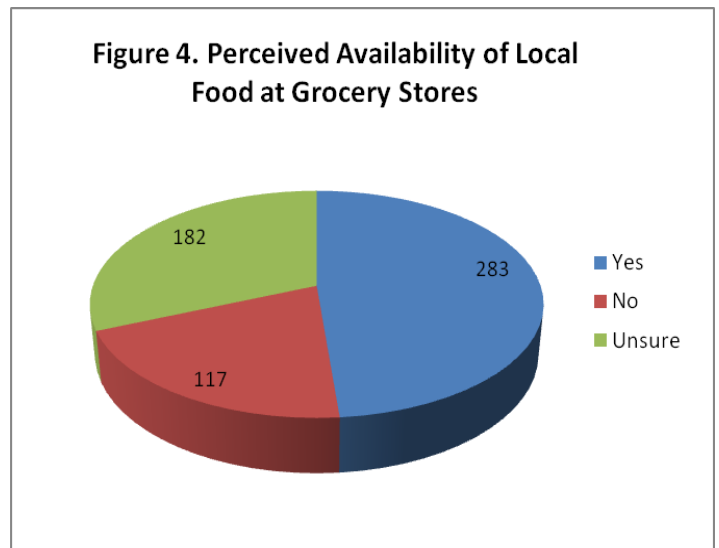
The third question of the household survey asked participants what share of the food their household consumes would they estimate to be locally produced, grown, or harvested. As shown in figure 3, the vast majority of respondents (69%) indicated that less than a quarter of their food consumption was from local sources. Another 26% of participants alternately indicated that between 25-50% of their diet is local. It is important to keep in mind that this graph represents what people *believe* their diet is made up of. We recognize this it is difficult to estimate with any accuracy the amount of local food you are eating as a share by volume of your household's total diet. Furthermore, resident's misperceptions regarding what foods in their diet are local is likely to have also influenced their responses. Nonetheless, over 40% of the respondents believed that a significant percentage of their diet (25% or more) was by some definition "local."



### Question 4

We also asked respondents whether or not locally-produced foods were readily available at the grocery store at which they most frequently shop (figure 4). Most (49%) responded that, "yes," locally produced foods were readily available where they shopped for groceries, 20% said that "no" it wasn't, and 31% said they were "unsure."

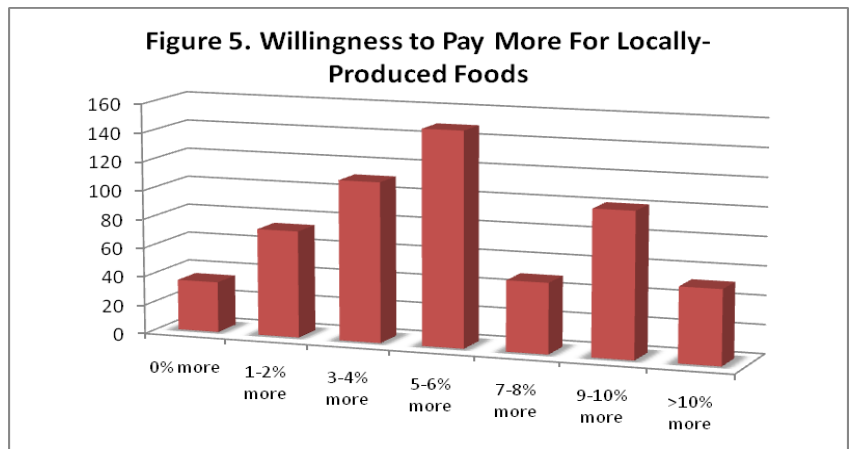
When analyzing the grocery store visitation habits between these three responses, we found that there was only slight variance with respect to the perceived availability of local food. Those that indicated that local food was not readily available at the grocery stores at which they most frequently shopped exhibited the same shopping habits as those that indicated that it was readily available or that they were unsure if it was. This seems to show that awareness of locally-produced products varies widely from person to person. Once again, there is indication from questions 1 and 2 that some may have misconceptions about what defines "local food." Furthermore, it appears that the difference between people that felt local food was available in their grocery stores and those that did not believe it was or were unsure has more to do with their own perspectives and beliefs about local food and less about where they actually do their grocery shopping.



### Question 5

Question five simply asked people how much more they would be willing to spend on a locally-produced food item than they currently pay for non-local items. Figure 5 shows that while the highest proportion of responses was for between 3-4% and 5-6% (260 responses combined and 19% and 26% respectively), there was also a significant proportion of the participants that were willing to pay 9% or more (153 participants combined, nearly than 27% of the total survey responses).

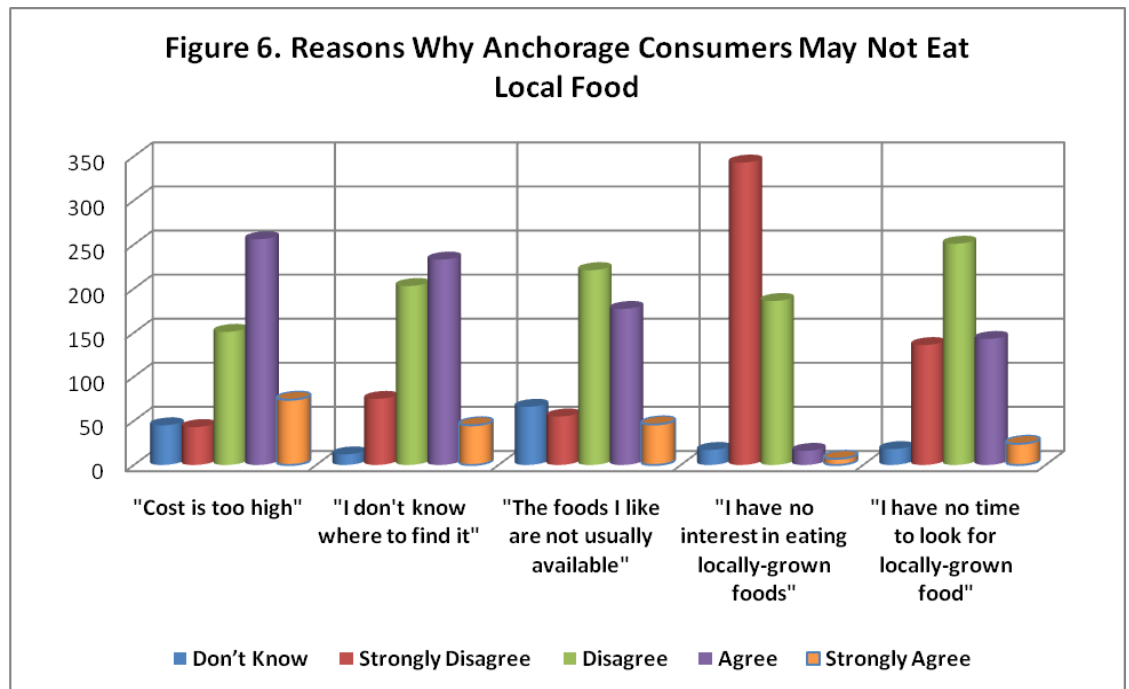
For several of reasons we do not believe that this data is an accurate indication of precisely how much more people would pay for local food. This question asked people to put a value on local food and cannot guarantee what their future choices will be. In retrospect, we felt that participant responses may have been influenced simply by the percentage increments we chose and perhaps people would have indicated willingness to pay a higher percentage if we had given them different choices (such as “0% more, 5% more, 10% more, 15% more and 20% more”).



However, what the data from this survey does show is that most people are willing to pay a somewhat higher price for locally produced items. Additionally, there is another group of people who will pay significantly more for locally produced items.

### Question 6

The sixth question of the resident survey sought to understand why people may not eat locally grown, produced, or harvested food. We used a Likert-type scale to collect perspectives on five reasons why they may not eat local: prohibitive cost, uncertainty of where to locate local items, unavailability of preferred foods, no interest in eating local food, and limited time to search for locally grown food. For each statement, participants were asked whether they strongly agreed, agreed, disagreed, strongly disagreed, or did not know (figure 6).



Regarding whether or not respondents believe the cost of local food is too high (first column of the graph), while 27% “disagreed,” the majority either agreed or strongly agreed (330 responses combined – 58%). As the food basket survey

revealed, locally produced items can be 20% to 100% more expensive than non-local items, although this is not the case between all food items and it varies on the season. These prices range outside of the scale that we used in question five in which many participants were unwilling to pay more than 5-6% more for locally-produced foods.

As to whether or not participants knew where to find local foods, the responses were near-equally mixed. Half of the participants in one way or another felt they knew where to find local foods, and the other half indicated said in one way or another that they did not know where to find local foods. Slightly more than 3% of the participants were unsure if they knew or not where to find local food.

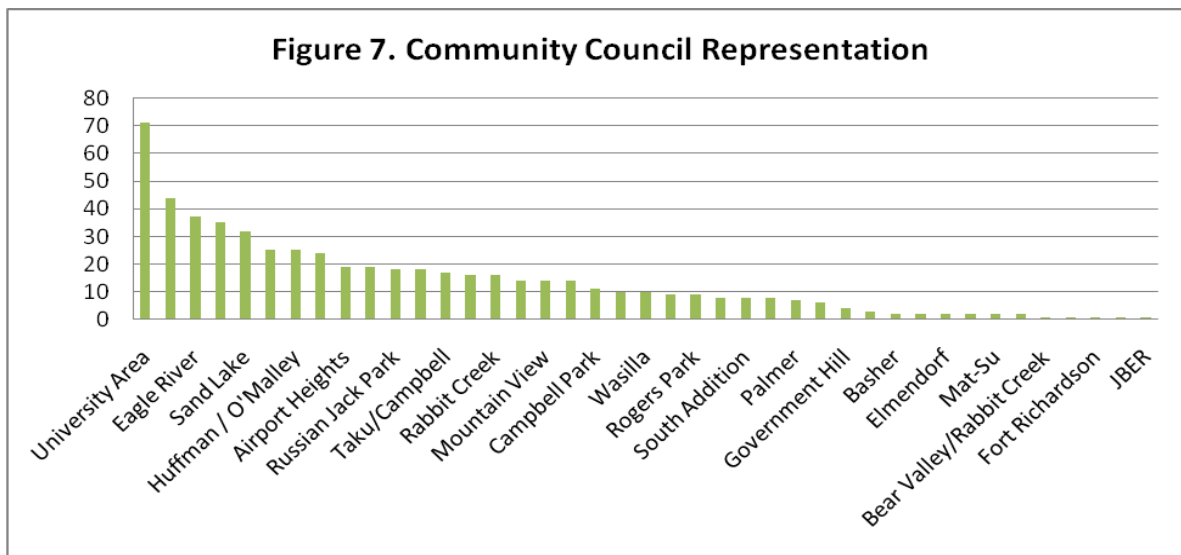
To the third statement, whether or not foods that the participant liked were available, responses were also mixed fairly equally but with slightly greater weight toward the notion that preferred foods were locally available. An acceptable conclusion from the mix of responses may be that local goods meet a portion of the food preference needs of Anchorage residents.

To the statement, “I have no interest in eating locally-grown foods,” the response was quite strong and one-sided. The majority of the respondents (93%) either disagreed or strongly disagreed, with most of them (61%) strongly disagreeing. This indicates that there is a pronounced interest in eating locally-produced foods and significant potential for growth in demand for local food as availability improves.

According to the responses for not having time to get local food, 68% did not agree that time was an obstacle for them, while approximately 30% believed time was an obstacle. Although there may be other reasons why people may not eat locally-produced food, which we did not include in the survey, this seems to suggest that time is not a significant obstacle for most people.

**Question 7**

The final question was for spatial analysis as it asked participants to indicate the community council district in which they resided. We believed this data would be more useful than zip-code and more familiar than other political districting. Due to time and personnel limitations, we were unable to collect an adequate sample from each district. The highest number of response came from the university district and a total of eight community councils had representation within the survey of more than 20 responses. A total of thirteen regions had between 10 and 20 responses to the survey. With so few responses coming from most districts, we are unable to draw any reliable conclusions about the differences between districts in regards to other questions in the survey.



**Food Basket Survey**

As discussed in the introduction, locally produced foods come from a variety of sources, including what is individually harvested from the wild (hunting, fishing, foraging, berry picking, etc.), individually grown (such as in a home garden or community garden), or raised or grown by others and then made commercially available (farmer’s markets, community supported agriculture [CSA], or retail food outlets). This portion of the study addressed the commercial distribution of unprepared foods and attempted to compare the process and availability of locally produced foods to those of imported foods as presented in each market. We included



smaller grocers, such as New Sagaya and the Natural Pantry, large grocery outlets, such as Fred Meyers and Carrs/Safeway, and the bib box stores, such as Costco and Sam’s Club. Although it was still early in the season (June 12, 2011) and the rich availability of locally grown produce was not yet present, several farmers’ markets were also visited, and that will be included in the discussion (figure 8).

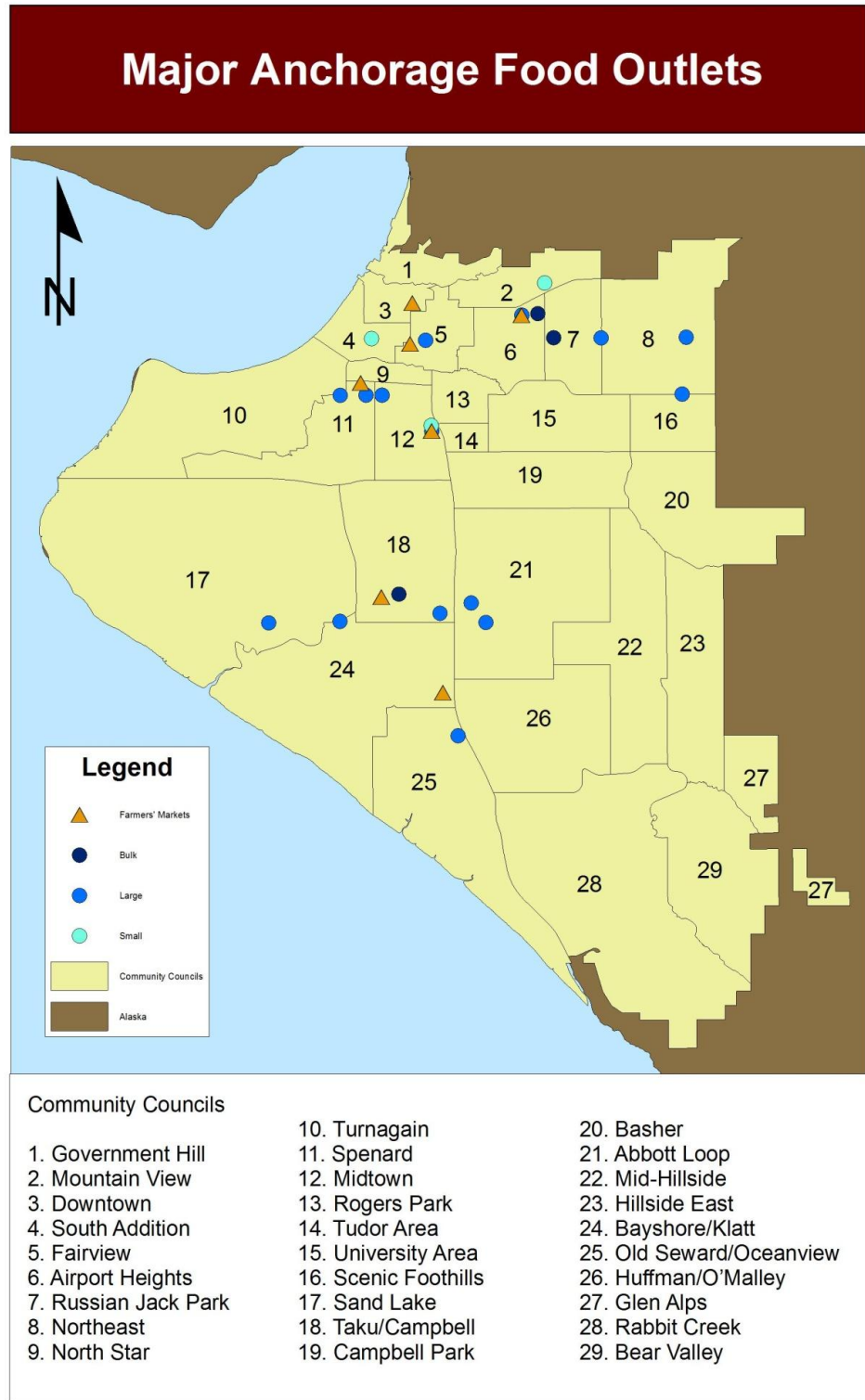
Figure 8.

The survey consisted of recording the high and low prices for select types of foods at various grocery stores. Twenty-four popular food items that could also be grown in Alaska were selected. Seven categories of food were inspected: dairy, meats, seafood, storage crops, perishables, fruits, and sweeteners. If an Alaskan produced version of the product was present, its price and how it was identified as Alaskan grown were recorded. The latter was indicated by one of four categories: a label on the product, a small sign, a prominent sign or placed in an Alaskan section with other Alaskan products.

Results from this effort, at least for the time of year when conducted (early spring of 2011), reveal the following information:

- The principal Alaska grown products that were available in the brick and mortar stores were milk, seafood, potatoes, and carrots.

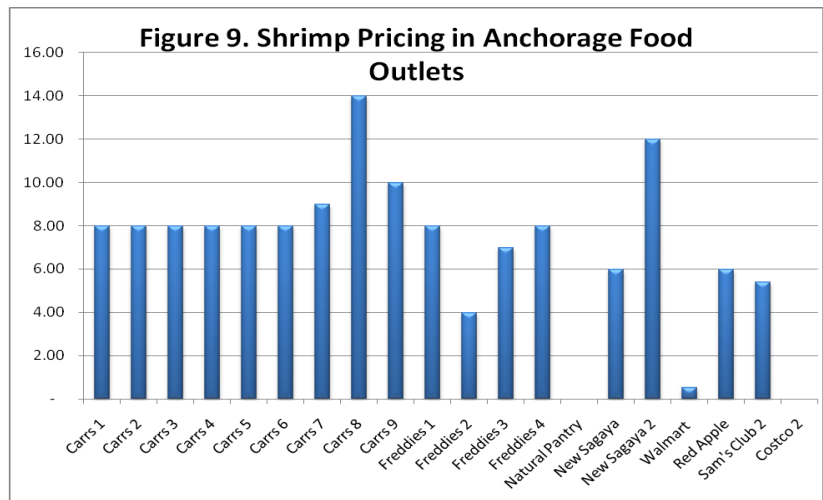
- Alaskan milk, which is distributed by Matanuska Creamery, was available at all of the Fred Meyers stores surveyed, seven out of nine of the Carrs/Safeway stores, and both New Sagaya stores, and at Wal-Mart. The pricing per gallon was somewhat mixed, but on average it was \$1.00 to



\$1.50 more expensive than the lowest priced milk available in the respective stores. While all the Fred Meyers stores offered Alaskan milk at a consistent price, its availability and price at the Carrs/Safeway stores varied, with a noticeable absence of supply in the poorer neighborhoods of Nunaka Valley between the Russian Jack and Northeast neighborhoods and Fairview and a noticeably higher price in the southern stores that serviced the more affluent neighborhoods. Red Apple, which services the poorest of Anchorage's neighborhoods, Mountain View, does not carry Alaskan milk or any other Alaskan product.

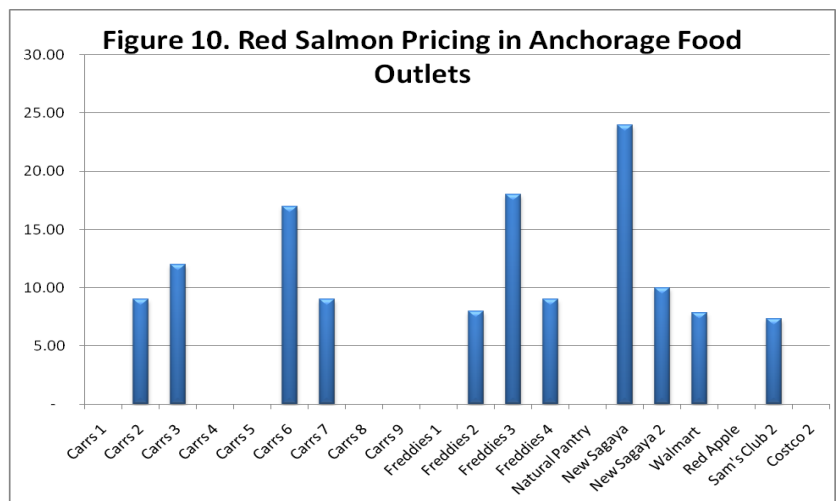
- Alaskan made cheese, which is produced and distributed by Matanuska Creamery, is available in Anchorage at one of the farmers' market and at both of the New Sagaya stores, which offer higher end and more expensive products in general and markets it more than what is charged at the farmers' market where the distributor sells it directly, along with locally produced ice cream and very popular cheese curds of varying flavor.
- No meat products (beef, pork, and poultry) were available at the brick and mortar outlets, but the Alex Davis Farm sold beef and pork products at the Central Farmers' Market, and prices were only slightly higher on average than the best cuts of meats available at the stores.

One of big box store chains, Costco, offered only Alaskan seafood (shrimp and salmon), and it was priced competitive to the few other shops that were offering them (see figures 9 and 10). Indications that these were from Alaskan resources was limited to container labeling.



With the exception of the big box stores, Red Apple, the Natural Pantry, and an occasional Fred Myers or Carrs/Safeway store, Alaskan potatoes were readily available and were by and large competitively priced with imported varieties. Alaskan carrots were more difficult to locate, but they were available but were generally priced more expensively than imported carrots by about 20-40%.

Alaskan grown greens had not yet reached the commercial stores, but a few items, such as various lettuces and bok choy, were present in the farmers' market. These were very much competitively priced to the higher end varieties (i.e. not iceberg lettuce) available at most stores, the exception being Red Apple and the box stores.



Although available online, at farmers' markets, and at the state fair, the store availability of Alaskan honey was only at New Sagaya, at which the prices were comparable to the price of Alaskan

honey through any of the other means of distribution. However, Alaskan honey, because of the labor as well as the difficulty in over wintering hives and needing to order new bees to be imported each spring, this local product averages about 40% more than the highest qualities of imported honeys and close to three times more than for generic honey.

## **Conclusions**

Perhaps the most obvious findings from the survey were that the vast majority of Anchorage residents have some degree of interest in eating local food and are willing to pay more for it. The strong response against the notion that people don't have an interest in eating local is a testament to this. While many believe the cost is too high, respondents still indicated that they still consume some amount of local food. As was evident in several areas of the household survey, people's understanding and awareness of what makes food "local" affects their perceptions about how much their diet is comprised of foods from Alaska and where it such foods are available. Since often the concept of local food can get confused with locally-owned businesses that distribute food or that advertise periodical "local" specials, identifying food that has grown, harvested, or produced in Alaska can be very difficult. Education and more transparent advertising would clarify many of these ambiguities and could influence people's choices about eating locally-produced foods.

Although the food basket survey data does not create a complete enough picture of the availability and price of local food items throughout the seasons, it can be concluded that in lower-income neighborhoods, access to locally-produced food is less than in high-income neighborhoods and in some areas (such as in the case of Red Apple), locally-produced food may not be available at all. Given the price gap between non-local and local foods, it follows that local food may be less marketable in lower-income areas and thus grocers do not stock it. Nonetheless, purely looking at how access to local food relates to food-security, the absence of local food in lower income neighborhoods contributes to their food insecurity, particularly in the case of emergencies with other sources of food may be cut off or inhibited. As local food becomes more affordable, more may find its way in grocery stores of lower-income neighborhoods and their food security will improve.

## **Limitations**

As was aforementioned, discrepancies in survey responses indicated that in some cases participants may have answered questions based on a different understandings or definition of local food than the one we provided in the written introduction and often verbally when distributing the survey. As a survey of residents personal perspectives and beliefs about local food availability and their habits and values related to it, we do not know whether or not people assume they are buying or eating local (such as from the grocery store or a restaurant), when indeed they are not by the definition used in this survey. Since items such as bread and other baked goods are largely dependent on imported grains, food from local bakeries would not be considered local by the definition used in this survey, but we do not know to what degree the respondents regarded locally baked breads as "local."

Furthermore, since a large percentage (13%) of our respondents reside in the University Area community council, some of the survey responses come from students living in the dorms who in many if not most cases do very little of their own grocery shopping and live off of meal plans.

And finally with the food basket survey, our data is a limited snap shot of food prices and local food availability that does not account for seasonal fluctuations in prices. Also given that we did not conduct food basket surveys throughout the summer, the availability and cost of local food from farmer's markets is not included in the data.

## References:

- ACE (2009). Local food, Sustainable Communities, Alaska Center for the Environment, <http://www.akcenter.org/sustainable-communities/local-food>.
- ADN (2008). "Ethan Berkowitz Unveils Agriculture, Food Security Plan", Anchorage Daily News, October 11, <http://community.adn.com/node/132594>.
- ADOA (2009). *Building a sustainable agricultural industry, defining a strategic planning process for the Alaska Division of Agriculture*, Alaska Department of Natural Resources Division of Agriculture, January 30, <http://www.dnr.state.ak.us/ag/BuildingaSustainableAgricultureIndustryFINAL.pdf>.
- AFG (2009). Alaska Food Coalition, <http://www.alaskafood.org/>.
- Agroborealis (1998). *Agroborealis*, vol. 30, no. 1, Spring.
- AK Root Cellar (2009). A blog through the community section of the Anchorage Daily News, <http://community.adn.com/adn/blog/69017>.
- Alaska Grown Online (2009). <http://www.alaskagrown.org/>.
- Bluemink, E. (2009). "Valley produce heads straight to restaurants, Anchorage eateries embrace the 'buy local' craze", Anchorage Daily News, January 2.
- Boehlji, M.D., Hofing, S.L., Schroeder, R.C., 1999. Value chains in the agricultural industries. Department of Agricultural Economics Staff Papers. Purdue University.
- Caulfield, R.A. (2000). Food security in Arctic Alaska: a preliminary assessment, Laval University, Quebec, CA, <http://www.chaireconditionautochtone.fss.ulaval.ca/extranet/doc/100.pdf>.
- Ericksen, P.J. – a (2008). "Conceptualizing food systems for global and environmental change research", *Global Environmental Change*, 18, 234-245.
- Food Inc.* (2009). A film directed by Robert Kenner, Apple Films, <http://www.foodincmovie.com/>.
- Harper, A.M. (2007). *Repairing the local food system: long-range planning for People's Grocery*, Master's Thesis through the Graduate Division of the University of California, Berkeley.
- Hendrickson, M. and Heffernan, W.D. (2002). "Opening spaces through relocalization: locating potential resistance in the weaknesses of the global food system", *Sociologia Ruralis* 42 (2002), pp. 347–369.
- Lewis, C. & Pearson, R. (1998). "Alaska's agriculture, examining 100 years of growth, lean times", *Agroborealis*, vol. 30, no. 1, Spring, pp. 38-41.
- Loring, P.A. & Gerlach, S.C. (2009). "Food, culture, and human health in Alaska: an integrative health approach to food security", *Environmental Science & Policy*, vol. 12, no. 4, June, 466-478.
- The Future of Food* (2004). A film directed by Deborah Koons, Lily Film, <http://www.thefutureoffood.com/>.
- Thompson, Jr., E., Harper, A.M., & Kraus, S. (2008). "Think globally ~ eat locally: San Francisco foodshed assessment", American Farmland Trust, [www.farmland.org](http://www.farmland.org).
- Unger, S. & Wooten, H. (2006). "Food system assessment for Oakland, CA: toward a sustainable food plan", Oakland Mayor's Office of Sustainability and University of California, Berkeley, Department of City and Regional Planning.