

# Farming in Alaska:

A Look Into the History, Community Outreach,  
Soils, & Programs in the Mat-Su Valley.

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# Introduction

The journey that has led me to this project has been incredible, albeit challenging. It was always a dream of mine to live in the great state of Alaska. All of the experiences of my life have led me to this majestic place. I began with a Bachelor of Arts in Visual Communications and spent 15 years of my life as a graphic designer. I remember the days when I would sit in my cubicle, in a dark office, staring at a computer screen and wishing I had chosen a path in natural resources. I would daydream, looking out the window, wishing I was kayaking, or hiking, or simply gardening instead of being stuck in a dark gloomy office. After being laid off from several advertising agencies due to budget cuts I decided to seize the opportunity to make a life/career change and registered in the Masters of Environment and Natural Resources program at The Ohio State University. I hope with my newfound knowledge of the environment and the skills I already obtained, I will be a valuable asset to a Natural Resources related agency and help to communicate the importance of our environment and natural resources. I've noticed there seems to be a communication gap between scientists and practitioners. I intend to fill these gaps by communicating the importance of sustainable agriculture in Alaska in a way that the community can more closely relate to. It is my intention to settle permanently in Palmer, where there is such a profound sense of community. Palmer, Alaska is a small town situated in the borough of Matanuska-Susitna (Alaska doesn't have counties, instead they have areas that are not well defined called boroughs). As of the U.S. census of 2010 the population of Palmer was 5,937. This region, affectionately referred to as 'The Valley,' is extremely important to agriculture due to its location on the limited road system and ideal planting conditions. Due to a generous grant from the Alaska Conservation Foundation I was given the opportunity to work as the Community Outreach Intern for the Alaska Farmland Trust from June of 2010 through September of 2010 in Palmer, Alaska.



The location of Palmer Alaska.

While farming is commonplace in the lower 48 states, Alaska is faced with challenges unlike any other region. The growing season is shorter, soil and air temperatures are much lower, the extremes in the number of hours of daylight, and the limited logistics for transport. The population of Alaska is below one million in a state one-third the size of the contiguous 48 states. Because Alaska is isolated from the rest of the world the importance of sustainable agriculture here is greater than anywhere I have previously visited. Many of the regions inhabitants take for granted that the majority of the supplies they use are imported, thereby leading to increase costs, lower quality produce, limited variety and shorter shelf lives. There is a need to promote Alaskan Grown

products and educate the population about the importance of producing their own food. It is estimated that Alaska would run out of supplies within two weeks if the state were cut off from the lower 48.

The majority of Alaska's farmland is in the Matanuska-Susitna Valley (Mat-Su) and this area is threatened by urban sprawl. With the population of Wasilla and Anchorage growing many of the viable farmlands in the valley are being taken over by commercial development and residential farmlands. I spent the summer of 2011 working as a Community Outreach Intern with the Alaska Farmland Trust Corporation (AFTC). Alaska Farmland Trust Corporation's mission is "dedicated to preserving Alaska's farmlands for future generations through land conservation. AFTC is committed to educating residents on the importance of local agriculture and farmland preservation, and expanding Alaska's agricultural infrastructure. The Alaska Farmland Trust envisions a future with thriving local food markets that will give Alaskans access to fresh, healthy food, and keep our farmers farming" (<http://www.akfarmland.com/aboutus>).

Alaska Farmland Trust originated with the assistance of the Alaska Rural Rehabilitation Corporation. It was founded in 2005 and is governed by a board of directors. Funding is through individual and corporate donations and grants. Since 2006, the Alaska Farmland Trust has been successful in protecting 120 acres of valuable agricultural lands in the state. The Alaska Farmland Trust currently only has one full-time employee.

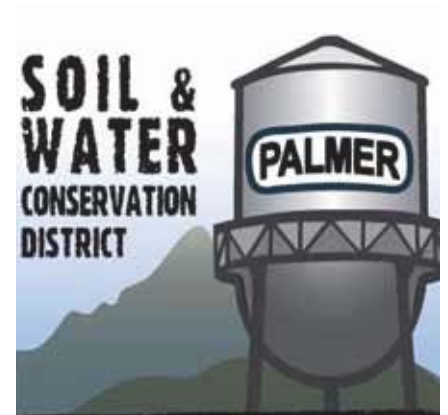
Mechanisms that the Alaska Farmland Trust uses to accomplish these goals are working with current landowners to voluntarily protect their lands. It is imperative to communicate to the public the importance of protecting these lands. By working with local resource agencies and non-governmental organizations, projects will benefit the community as a whole. AFTC works with farmers, other land trusts, grocers, farmers markets, community leaders, and other agricultural affiliates to increase demand for Alaska Grown products.

AFTC's vision is important because only 4 percent of Alaska's farmland is accessible and viable for farming and less than 10 percent of food consumed in Alaska is grown locally. Because of the threat of urban sprawl and Alaska's lack of sustainability it is pertinent that preserving these farmlands becomes a top priority. It is AFTC's hope to educate and inspire local and future farmers. As the price of oil, transportation costs, and food costs rise, so will the cost to import food to Alaska. By communicating the importance of Alaskan agricultural sustainability the communities will learn they can offset these costs by growing their own food and supporting their local economy. This not only benefits the pocketbooks of Alaskans but their health as well.

The content of this paper documents my findings and will be useful to future farming prospectors as a

guide for what to expect as an Alaskan farmer. I intend to explain Palmer's history as a government experimental farming colony, what types of agriculture are popular in the region, the soil types found in the valley and programs available to aid present and future farmers.

I would like to thank the Alaska Conservation Foundation, Alaska Farmland Trust Corporation, Alaska Rural Rehabilitation Corporation, local farmers: Ben Vanderwheele and Arthur Keyes, carpenters Jerry Vanover and Maverick Deckert, NRCS Palmer, Soil and Water Conservation District, The Alaska State Fair, Alaska Pacific University, and various others who have participated, volunteered and shared their stories and experiences with farming in this region.



# History of the Matanuska-Susitna Valley

Between 1,500 and 2,000 years ago the Dena'ina band of Athabascan Indians (meaning 'the people') established themselves in southcentral Alaska. These people actually replaced original Eskimo population in the region at some time. The Dena'ina people had a developed maritime society and were avid hunters, trappers, and fishermen. Their numbers are estimated to have been as high 5,000 before the first contact with the white man. Current estimates are believed to be around 1,000 people and it is estimated that only 150 people continue to speak the language.

The outside influence of Russian and American settlers forever changed the Dena'ina traditions and lives. In 1836 an influx of smallpox is believed to have eradicated 50 percent of the Dena'ina population. With these racial changes came the development of new schools which prohibited the use of the Dena'ina language.

Arable lands were quickly being bought up in the lower 48 states and so many people travelled north to a United States territory that would later become the state of Alaska. U.S. Secretary of State negotiated the purchase of Alaska for the U.S. from Russia for \$7.2 million or 2 cents per acre. Alaska first became a district on October 18, 1867 and then an official U.S. territory on August 24, 1912. On January 3, 1959 Alaska became the 49th state. The name "Alaska" originated during the Russian colonial period. At that time the name was used only for the peninsula area. The word "Alaska" is derived from the native Aleut meaning "the mainland" or "the object towards which the action of the sea is directed." In other cultures the land was known as Alyeska, the "great land," an Aleut word derived from the same root.

Because of the development of railroads and trading posts along the rivers in the Matanuska Valley, this fertile land became an ideal location for the development of a new agriculture based colony.

In 1935 a bold government project transplanted 903 men, women, and children from three poverty-stricken Midwestern states to the fertile lands of the Matanuska Valley based in what is now known as Palmer. The colony was the only official colony in the history of the United States. This settlement doubled the valley's population and injected millions of dollars into the Alaskan economy and directed attention to the 'Last Frontier' of Alaska.



Young colonists of the Mat-Su valley.

In the early 1900's a million farm families were receiving government relief and 13 million people were out of work. Franklin Roosevelt took office and developed his 'New Deal' project which proposed a relocation effort to move destitute Midwest farmers onto more profitable lands. Positive reports on Alaskan agriculture potential led to the relocation of the families into the Matanuska Valley in 1934. The Alaskan Rural Rehabilitation Corporation (ARRC) was founded to implement the project.

In anticipation of the new opportunity, farmers from around the country filed letters with the Federal Emergency Relief Administration (FERA) asking to be part of the relocation efforts. Only 200 families were chosen to be relocated from Wisconsin, Minnesota, and Michigan. These families were mainly of Scandinavian descent and had experience with the challenges of farming in harsh winter conditions. Preference was given to couples between the ages of 25-40. Each family was given a 40 acre parcel of land, a house, a barn, well, and outbuildings. Due to poor soil conditions, some families were given an 80 acre tract. Because of the lack of an infrastructure, life in the valley was considered rugged. In the backdrop of the Great Depression, families in Michigan that witnessed 70 percent of the local population being on relief, this new opportunity beckoned them. In 1935 media coverage from the New York Times brought attention to this Alaska experiment.

The move was swift for most families. Some only having 1 or 2 hours notice to pack. The first colonists departed Minnesota on April 26, 1935 via train. Ahead of them were hundreds of temporary workers sent to clear land and build homes for the expected arrival of the colonists. The first settlers arrived in San Francisco to a warm welcome and boarded an army ship on May 1st. They arrived in Seward, Alaska on May 6th. The second group arrived in Seward 2 weeks later. In the beginning a plethora of reporters followed the colonists' adventures.

Upon arrival in Palmer, colonists were greeted with their new temporary homes. Rows of tents were erected along the railroad tracks. By the time the second group arrived in Palmer, their tents were not set up and families had to double up. By June there were 10 camps created until their houses were constructed. On May 23rd, the men of the families drew a number out of a cardboard box. The number they chose determined which tract of land they would receive. Once their land was cleared the families were able to choose 1 of 5 different floor plans for their new homes.

All was not going as smooth as expected though. Many of the farmers have never been so far from home and had never experienced mountain living. Mud and mosquitoes plagued them, as well as the lack of supplies and them not arriving in a timely manner. Government regulations prohibited colonists from building their own

homes and clearing their own land. This task was given to the transient workers hired and employed by the bureaucrats. Due to unexpected expenses, many colonists charged to their allotted credit more than their original contract specified. In 1937 colonists received some aid from ARRC that reduced their debt to manageable sums. Some percentages of this debt were forgiven by the ARRC.

By mid-July, 3 children perished and there were no doctors or health care facilities immediately available. By the first week of July, 6 of the families had returned to the lower 48 and others followed in their footsteps. Ultimately, 60 percent of the original colonists left and replacements were found through 1940. Many of these families' descendants still live in the Matanuska Valley.

For the remaining colonists, conditions gradually improved. The Matanuska Valley Pioneer newspaper was created and its first print was on August 15, 1935. By November all of the families were in their homes. Over the next 12 months the colonists established a school, a hospital, and held their first harvest fair. Electric power was not established until Matanuska Electric Co-op was formed in 1942.

Farm development lagged for multiple reasons. The first obstacle was that the 40 acre tracts were too small to support any type of commercial agriculture. The biggest challenge was the absence of a large market to sell their crops. Many families were forced to consume their own crops, bury their surplus, and/or feed it to their livestock.

In 1939 market values improved when the U.S. Army established a base in Anchorage. Civilian jobs opened up and the men started leaving their families behind to manage the farms while they worked in Anchorage. In 1942 federal control of the colony was withdrawn and the colonists were on their own.

Homesteaders arriving after the initial influx of settlers did not receive as warm a welcome as the original colonists. They were denied many of the same benefits the original families such as government benefits, credit at the local store, or even low-interest loans at the same rates as the original colonists.

From its development the Matanuska Colony drew criticism and created controversy. Newspapers reported the colony as being a 'communist experiment' and others labeled the colonists as 'cream puff pioneers.' An ARRC audit listed the final cost of the project as



Livestock was popular for the original colonists.

\$4.7 million. The same audit recorded that all the original colonists succeeded in repaying their loans to the federal government.

Nearly 200 colonist and replacement families remained in the Matanuska Valley. Approximately 7,500 acres of land were cleared for farming and for the next 3 decades agriculture in the valley thrived.

Currently agriculture in the valley is threatened by the building of subdivisions and commercial properties. Only a handful of the original colonist's descendants remain in the area. Today, Palmer remains as the central hub for the Matanuska-Susitna Borough government offices.



A typical farmer's market during the Colony Days in the Mat-Su valley



# Agriculture

Due to the northern climate and steep terrain, relatively little farming occurs in Alaska. Most farms are in either the Matanuska Valley, about 40 miles northeast of Anchorage, or on the Kenai Peninsula, about 60 miles southwest of Anchorage. The short 100-day growing season limits the crops that can be grown, but the long sunny summer days make for productive growing seasons. The primary crops are potatoes, carrots, lettuce, and cabbage. The Delta Junction area, about 100 miles (160 km) southeast of Fairbanks, also has a sizable concentration of farms, which mostly lie north and east of Fort Greely. This area was largely set aside and developed under a state program spearheaded by former governor Jay Hammond during his second term. Delta-area crops consist predominately of barley and hay.

Alaska, with no counties, also lacks county fairs. However, a small assortment of state and local fairs (with the Alaska State Fair in Palmer being the largest), are held mostly in the late summer. The fairs are mostly located in communities with historic or current agricultural activity, and feature local farmers exhibiting produce in addition to more high-profile commercial activities such as carnival rides, concerts and food. “Alaska Grown” is used as an agricultural slogan around the state to promote the importance of supporting local farmers thereby supporting the local economy.

## **Sustainability**

There are many misconceptions regarding agriculture in Alaska. While farming in Alaska is possible there are many challenges that are quite different from their lower 48 counterparts. The growing season is much shorter, soil temperature is lower and daylight hours are longer. It is of the utmost importance that Alaskans develop a sustainable farming future for their growth and survival. Sustainable agriculture in Alaska is important for many reasons. The majority of available food is imported and often arrives over ripe, thereby reducing its shelf life. Food costs are much higher in Alaska because it is imported. Only 4 percent of Alaska’s farmland is accessible and viable for farming, and less than 10 percent of food consumed in Alaska is locally grown. As oil prices, food prices, and transportation costs continue to increase, so will the cost to import global foods to Alaska.

## **Crops Grown**

In addition to potatoes, carrots, lettuce and cabbage, other common vegetables grown in Alaska are beans, beets, broccoli, brussel sprouts, cauliflower, celery, cucumbers, green onions, radishes, snow peas, squash, tomatoes, and turnips. Some fruits thrive here as well. Apples, blueberries, currants, gooseberries, lingonberries,

raspberries, rhubarb and strawberries can all be found locally grown. Hay is also a large commodity and hay fields still decorate the roadsides throughout the Mat-Su Valley. Beef and reindeer are also raised locally but many of the residents hunt for moose and fish for salmon to subsidize their food supplies. Many of these crops grow to enormous sizes and taste much sweeter than crops grown in the lower 48 states. This is due to long daylight hours and excessive photosynthesis creating high amounts of sugar in the crop.



One of the many oversized cabbages entered into the 'Giant Cabbage Weigh Off'.

Alaska is home to many record size vegetables: A 19 pound carrot, 39 pound turnip, 106 pound kale, 65 pound cantaloupe, 97 pound kohlrabi, 63 pound celery, and of course the world record 127 pound cabbage and 1,019 pound pumpkin. During the Alaska State Fair, held at the end of August in Palmer, every year many of these oversized vegetables are on display. Most popular is the cabbage weigh off competition and humongous pumpkins.

Alaskan agriculture however is small. In 2010 there were just around 680 farms in Alaska. Of these less than 300 of them generate more than \$10,000 a year in revenue. There are not many large-scale commercial farms in the state due to the population being under one million for a state two and a half times the size of Texas. Much of the land is not accessible because there are no roads connecting much of the fertile land to the cities. Alaska comes in 50th in the number of farms in the country but generating sustainable agriculture is very important for the state's future.

Farmer's markets are quickly becoming popular in the cities as well as small communities. Grocery store owners are incorporating local grown products in their stores to help support the local growers, spur local economic growth, offer a fresher product and reduce costs on to the consumer. It is prudent for Alaskans to support local growers because Alaska is so far away from the lower 48. It is estimated that if Alaska were cut off from the contiguous states that food supplies would be depleted within two weeks.

Statistics show that Alaskan farms are on the rise (Table 1). There were 610 farms recorded in 2002 and reports as of 2009 show there are now 680. Of these 110 are cattle. Approximately 85% of what Alaskans eat is imported.

Table 1. Chart compliments of Division of Agriculture Statistics, 2010.

<b>ALASKA – NUMBER OF FARMS AND LAND IN FARMS 2002 - 2009</b>							
<b>Year</b>	<b>Land in Farms (000 Acres)</b>	<b>Total All Farms 1/</b>	<b>All Cattle</b>	<b>Beef Cows</b>	<b>Milk Cows</b>	<b>Hogs</b>	<b>Sheep</b>
2002	900	610	120	90	30	50	40
2003	900	610	120	90	30	50	40
2004	900	620	120	90	30	50	40
2005	900	640	120	90	30	50	40
2006	900	640	120	90	30	50	40
2007	890	680	130	100	30	40	40
2008	890	680	130	100	30	40	40
<b>2009</b>	<b>880</b>	<b>680</b>	<b>110</b>	<b>80</b>	<b>30</b>	<b>40</b>	<b>50</b>

1/ Includes farms and ranches with annual sales of \$1,000 or more.

### Growing Season

The growing season in the Mat-Su valley starts in May when 99 percent of Barley, oats, and potatoes are planted. By the end of September most of the harvesting is complete. The round the clock hours of daylight in the summer benefit farmers in that the crops have a plethora of daylight to take advantage of. However, the opposite is true in winter, when greenhouse growing proves to be difficult without supplemental lighting.

### Greenhouses

Greenhouses present their own problems due to the lack of natural sunlight in the winter. An experimental greenhouse in Fairbanks, in collaboration with Chena Hot Springs Resort and the University of Alaska Fairbanks School of Natural Resources and Agricultural Sciences, is working towards building a self-sustaining community with the goal being greater independence in food production. Crops grown in this greenhouse, along with other Alaskan Grown produce, is featured in the on-site restaurant. A small experimental greenhouse built in 2004 has been in production year round and is heated with water from an underground geothermal source. The greenhouse was able to maintain temperatures of 85 degrees while the ambient temperature outside recorded -45 degrees F. This 130 degree difference is the largest ever recorded in a greenhouse facility in the entire United States. In 2006, the resort added a 4,320 square foot greenhouse to provide the restaurant with a greater variety of fresh produce year round. There are currently talks of constructing a similar greenhouse in Butte, Alaska, located just south of Palmer that would be heated by water runoff from a local power plant.

High Tunnels and small scale greenhouses are also becoming as common in neighborhoods as are raising chickens and honeybees. It is typical to see many privately owned homes with small scale greenhouses in their

own yards. This provides Alaskan residents a head start on growing their own produce and striving for self-sustainability.

This new direction in crop production will be useful in remote areas of Alaska where it is often challenging to have access to locally grown produce. Dr. Karlsson of the University of Alaska Fairbanks is working to determine the best crops for production in high tunnels and greenhouses so growth and productivity is optimized. She has studied tomatoes, lettuce, green beans, a variety of herbs and strawberries. Her findings will be shared with agriculture producers statewide in an effort to expand their productivity. She is conducting specific lighting tests that include LED (light emitting diode) lighting as an option. Many other innovative methods are being researched including hydroponics and this data is being shared with the public as well.

## **Hydroponics**

Hydroponics is the practice of growing produce with their roots immersed in a solution of water and nutrients. This soilless production technique is catching on in areas of Alaska where greenhouse production is more ideal due to the extreme climate. Tomatoes and lettuce are often grown under hydroponic conditions using either an organic or inorganic medium often consisting of peat moss, gravel or perlite. Benefits of growing produce hydroponically are the rapid-growth, no soil borne diseases and pests, harvesting is easier, sizes are more uniform, labor costs are reduced and production is year round. Nutrient film technique (NFT) is the most common system used in commercial greenhouses. Plants grown using this method have their roots constantly replenished by a circulating nutrient solution. This provides sufficient aeration for the plants. The solution returns to a stock tank where pH levels, conductivity, and water levels are readjusted before it circulates through the growing channels.

## **Need for Research**

The need for agricultural research in Alaska is great. Due to the extreme climate, permafrost, geographic location, and seasonal daylight hour extremes, farming in the state has been difficult. With less than a million residents in the entire state there just isn't data available or the resources to gather such data. With the development of experimental farms throughout the state, Alaska is on its way to becoming more sustainable than it ever has been in the past. Using community outreach programs such as the Alaska Grown collaboration and non-profit entities such as The Alaska Farmland Trust, the public is becoming more aware and concerned about the loss of farmlands to urbanization and how serious sustainability is.

In Palmer, Alaska, the Matanuska Experiment Farm, part of the Agriculture and Forestry Experiment

Station, is focusing on research for sustainable agriculture, land reclamation, and other environmental concerns. This farm is 260 acres of cultivated land and about 800 acres of forest land where research is conducted and used for demonstrative purposes. The farm is fully equipped to produce hay, grain, and other crops. There are also field laboratories for research on soils, plants, and livestock and it also has its own greenhouse that is run by the Alaska Department of Natural Resources.

## **Food Security**

For over one hundred years Alaskans have relied heavily on the importation of their food. Because of urbanization and population increases the demand for fresh food will continue to grow. Population growth has increased the demand for imported foods. According to the United States Department of Agriculture (USDA) Alaska imports 98 percent of its food. Other estimates say as low as 85 percent. This begs to question how secure Alaska's food supply really is. This increase in demand for imported goods lowers Alaska's food security. One major concern of Alaska's food supply is the rising cost of transportation. With an increase in fuel costs and a higher demand for imported goods, Alaskan food prices are at an all time high. Locally grown produce is not as popular in Alaska as in the lower 48 states. This is a very large and real problem. Because of Alaska's geographic location coupled with a rise in transportation costs the state should be focusing on sustainability. By increasing local grown products Alaska will be able to support itself, its producers, consumers, and the local economy. Alaska's current food system is then, not-integrated. That is, the current system is not designed to benefit the needs and economy of the local communities. By developing an integrated system Alaska could retain monies within the state, reducing transportation costs, and provide employment to local residents. By transitioning to a more integrated system Alaskans could reduce their fears of poor food security and nowhere else in the United States is this more important than the far away land of Alaska.

## **Residential Gardens**

It is becoming more commonplace in these small communities to have a family owned garden and small greenhouse on one's property. The realization of rising food costs has contributed to many people raising their own food, chickens, hunting for subsistence, and stockpiling supplies. Alaskans are beginning to realize that a trip to the store often is not feasible not only due to extreme weather conditions, but to bad traffic as well. There is only one major highway into the city of Anchorage and in the case of an auto accident or inclement weather, traffic can be stopped for many hours. Alaskans also are realizing and appreciating the freshness when growing their own food. Often, strawberries arrive in the state half rotten, bananas have frozen on the boat during shipment, lettuce is already wilted on arrival, and a variety of other problems present themselves. When surveyed, the majority of Alaskans chose 'grown here' products over 'flown here' products.

# Alaska Farmland Trust Internship

Working as an intern with The Alaska Farmland Trust Corporation I held the title Community Outreach Intern. I arrived June 12, 2011 and began my new position on June 15, 2011. Through a generous grant from The Alaska Conservation Foundation Margaret Adsit, Executive Director (and only employee), was able to focus her duties more on grant writing and fund raising. As Community Outreach Intern my duties were to work the local farmer's markets on Fridays in Palmer, and alternate markets on Saturdays in Anchorage. In addition, I created flyers, updated their social media Facebook page, recruited volunteers, sold t-shirts and market bags, and educated booth guests on the mission of AFTC. There were also a couple big events we participated in, one being a community picnic, an agriculture day at the local college, an energy festival in Anchorage and of course, the infamous, Alaska State Fair.



The Alaska Farmland Trust booth display as of June, 2011.

## Friday Flings and Farmer's Markets

Friday Flings are a local gathering of vendors ranging from Alaskan made products, food vendors, advocacy groups, and local artisans in beautiful downtown historic Palmer at the Train Depot. In this small community many people come from surrounding towns and villages to attend this quintessential Alaskan market. At Friday Flings, AFTC shared their free rental, non-profit booth with



The Friday Fling event in Palmer, Alaska.

the Soil and Water Conservation District, NRCS Palmer, and Alaska Pacific University's Spring Creek Farm. By working collectively with these agencies we were able to more strongly convey the message of the importance of preserving the Mat-Su Valley's farmlands. AFTC sold on average 5 shirts a day and 5 market bags as well as accept donations. Because AFTC is a non-profit organization, we did not have many materials to make the booth more appealing. Using my undergraduate

Bachelor of Arts in Visual Communication skills, I was able to recruit local carpenters, Jerry Vanover and Maverick Deckert, to build us a much nicer display that the organization can use for years to come. These were useful displays for all their future events. They consisted of an easel stand to display our shirts, a collapsible scarecrow to display our shirts and brochures and a 'tiki bar' to demonstrate and conduct interactive games on. Materials for these displays were mostly donated however we did have a small budget for 2x4's and hardware. These dis-



Maverick Deckert constructing new booths for The Alaska Farmland Trust.



Two of the newly constructed displays for The Alaska Farmland Trust.

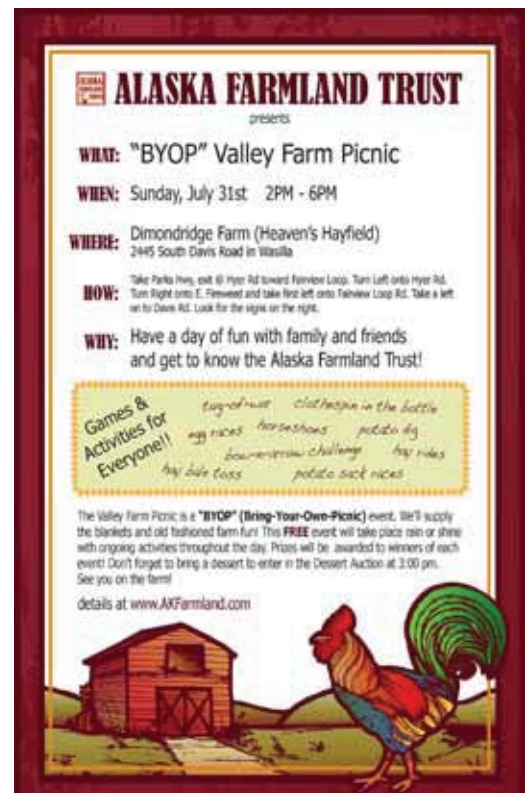
One the descendants of the original colonists, Margaret Heaven, allowed us to use her AFTC protected hayfield to host a community picnic event of which we recruited live entertainment. We held many farm games such as potato sack races, goat petting zoo, clothespin in the bottle, a tug of war contest, egg toss, and other field games that families could participate in. In addition to the field games we held a fund-raising desert auction of which the mayor of the borough, Mr. Larry Devilbiss, made an appearance. Our dessert auction raised the organization \$900. We also had many t-shirt sales and other small monetary donations. Unfortunately, it rained most of the day so the turn out was not as grand as we expected. However, for being the first year we held this event we considered it a success.

### Agriculture Day at the Matanuska Experimental Farm

On August, 17, 2010 from 11 a.m. to 4 p.m. AFTC attended the University of Alaska Fairbanks, Agriculture Day at the Matanuska Experiment Farm in Wasilla, Alaska. It had been six years since they hosted this event and 2011 marked the 75th anniversary of the Matanuska Colony. The day was designed for education and community participation in the valley and included hay wagon rides, pony rides, animal displays, milking demonstrations, and a small farm market. The Air Force band was live entertainment as well as a DJ. Participants had the chance to win prizes playing games such as animal calling, cabbage toss, cake walk, potato sack race, and other farm field games. Informational booths in addition to AFTC's that attended were

plays made our booth much more inviting to the public and we found that visitors would stay longer and seemed to have more interest in what AFTC's mission is.

### Valley Community Picnic



Valley Community Picnic flyer.



Spinning yarn at the Agriculture Day event in Wasilla, Alaska.

NRCS and a Matanuska Colony informative booth. Farm equipment and animals were also on display. This event brought the community together and demonstrated the importance and presence of agriculture in the Matanuska Valley. The UAF School of Natural Resources and Agricultural Sciences, the UAF



A reindeer at the Agriculture Day event in Wasilla, Alaska.

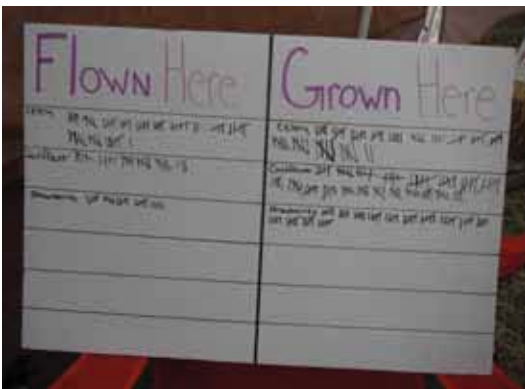
Cooperative Extension Service and the Alaska Division of Agriculture sponsored the event.

## REAP Festival in Anchorage

The Renewable Energy Alaska Project, aside from the Alaska State Fair, was one of the largest events AFTC had a presence in. This festival was held in Anchorage on Saturday, August 13, 2011 from 11 a.m. to 9 p.m. More than 2,000 people attended this free event. Participants were able to learn about renewable energy and attend free workshops on everything from electric vehicles to making your home more energy efficient. Statewide known artists provided entertainment and this was a great opportunity for AFTC to reach out to the public and educate them on the importance of preserving Alaskan farmlands.

## Alaska State Fair

The Alaska State Fair was AFTC's biggest event. This event attracted visitors from the entire state and was held from August 25th through September 5th. AFTC's booth was much larger than booths we used for farmers markets and was much more demanding. Many volunteers were needed to help with all the events we were hosting.



Results of the Flown Here, Grown here experiment that attracted media attention.

Daily, we hosted a 'Taste of Alaska' event in our booth sponsored by the Mat-Su Chapter of the Farm Bureau and Division of Agriculture. This consisted of purchasing a different flown in product and by blind taste testing comparing if it tasted better or worse with our local grown donated component. Every day I would pick fresh fruits and vegetables from a local farm and then purchase the same item from





Conducting the Flown Here, Grown Here experiment.

a local grocer that was flown here. Results were overwhelming that the public preferred the fresher, grown here product. We kept track of these results using a piece of poster board that the public could see. This demonstrated to the participants that our local grown products tasted much better. We were also able to convey the importance of growing our own food by explaining that the shelf life is longer, it supports the local economy, and simply tastes better. I was interviewed by Anchorage news station KTUU demonstrating how the

blind taste worked and it was broadcast on the evening news. After the participants sampled the produce we then asked them to complete a short survey on what improvements they would like to see in local farmer's markets. The majority consensus was that residents didn't know where to find info on the location of markets in the valley. The data we collected was shared with the Division of Agriculture to help improve the success of markets.

As a specialty day, AFTC moved their booth to the center oval of the fair and joined with the Palmer Soil and Water Conservation District and the Mat-Su Chapter of the Alaska Farm Bureau for the Alaska Agriculture Day at the Alaska State Fair on Thursday September 1, 2011. The Palmer Soil and Water Conservation District donated a variety of seed packets of which we had volunteers distribute to fair goers with all participating agencies' logos printed on them at each entrance gate. This was a great way



The new and improved booth for Alaska Farmland Trust.

to spread the message that farming in Alaska is important to each and every resident and inspired the community to build their own gardens. This event also attracted the attention of news station KTUU of which I was again interviewed and on the evening news. On this same day, Executive Director, Margaret Adsit, emceed the world famous 'Giant Cabbage Competition.' Farmers from all over the valley participated in this event to see whose cabbage would weigh the most. The record stands at a cabbage weighing in at 127 pounds in 2009.

In addition to the above listed events during the duration of the fair, AFTC also auctioned off a side of bison and a robe of bison donated by the local 4-H chapter. Tickets were sold throughout the summer for this auction and were on display at the AFTC's booth at the fair. We also recruited advocates by having them hold up a sign saying, "I support Alaska Farmland Trust," which they signed a photo release so these pictures can be used

for future promotional material. As Community Outreach Intern I also was able to assume permission to show the movies 'Eating Alaska' and 'Dirt! The Movie' in our make shift Hay Bale Theater. As you can see the appearance of our booth by the end of the summer dramatically changed the presence of Alaska Farmland Trust. By using my visual communications experience I was able to attract many more people to our booth where I could then recruit them to be lifelong advocates of The Alaska Farmland Trust.



Advocates for The Alaska Farmland Trust showing their support.

### **AFTC Follow Up**

Since these events have taken place AFTC's presence in the community has grown significantly. They are receiving much more media attention and support from the local community. Because of these group efforts, Alaska Farmland Trust received \$500,000 from the FY2012 state's capital projects budget to help protect farmland in Alaska. AFTC is also starting a farmlink online program modeled after Iowa State University's program to help link new farmers with current agricultural landowners in an effort to promote farming in the region and protect Alaska's valuable farmland. In addition to this program AFTC will be hosting workshops for existing farmers to learn about better business planning and will writing so that farms and families are not divided after ownership is passed on to the next generation.

### **Alaska Farmland Trust's Legacy**

Because there are only about 680 farms in the whole state of Alaska of which most are found in the 880,000 acre Matanuska Valley. About 85 percent of the fresh produce and almost 100 percent of the processed products consumed in Alaska are imported. By placing a conservation easement on a farm, these valuable farms can be protected from urbanization. A conservation easement is a legal binding document between the landowner, a land trust or government agency that permanently protects and limits the use of the land for conservation purposes. As the owner, one is able to continue to use the land, sell it, or pass it on to ones' heirs. When a conservation easement is placed on farmland some of the rights are given up. An example of this would be the right to subdivide the land while still growing crops on the land. Any future owner of the land is legally bound to this conservation easement as well. It is the responsibility of the land trust to ensure the easement's terms are followed. The easement can be placed on just a portion or all of the land in question. Typically, easements with the Alaska Farmland Trust are donated but can be purchased if funding is available and if the land is designated seriously threatened by development. Land must also meet other requirements such as the federal tax code to be considered a tax-deductible donation. The amount of the donation is defined as the difference between the value

of the land with and without the easement. By having an easement on the property one may save on their property taxes as well. Each situation is different and customized to meet the individual's needs and requirements. Placing a conservation easement on land and removing the land's development potential lowers the market property value which will lower the estate tax. This can be beneficial when passing land on to the next generation to ensure the land stays in the family and promotes its sole use as agricultural.

The Conservation Easement Process as described on Alaska Farmland Trust's website is as follows:

1. General information seeking to decide whether a conservation easement is appropriate for a landowners needs.
2. Discussion of these needs and desires with the Alaska Farmland Trust Corporation (AFTC), including public benefit and stewardship funding.
3. Initial and limited inspection of the land by the AFTC (receiving a copy of a plat or tax map from the landowner, site visit to walk the land and take some photos). Any further details that can be provided about the types of activities the landowner intends to conduct on the property (farming, forestry, wildlife management, future improvements, etc.).
4. Review of the proposed conservation easement by the AFTC Board of Directors to determine if it meets the protection criteria. The AFTC Board of Directors must approve the acceptance of the conservation easement before moving forward with the project.
5. Due diligence (further inspecting the land, title certification, and generating the baseline documentation of the conservation values).
6. Writing the conservation easement. If both parties decide to move forward with the project, the Alaska Farmland Trust Corporation will work with the landowner and their attorney to prepare the conservation easement (there may be several revisions before a final version is agreed upon).
7. Signing and recording the easement.

Costs Incurred by the Landowner:

In granting an easement, the landowner is responsible for the fees for any professional services they obtain. These include surveyors, appraisers, attorneys, and financial consultants. The AFTC also request the landowner to assist with cost of baseline documentation. A Baseline Document is required by the AFTC for the purpose of establishing the condition of the land at the time the conservation easement is granted. The typical cost for a baseline report is between \$1,000-\$1,500. In addition, the Alaska Farmland Trust requests that each landowner who places a conservation easement on his or her land make a tax-deductible gift to our stewardship endowment. The endowment provides funding for our perpetual obligation to inspect the property annually, enforce

and/or defend conservation easements and to otherwise perform our responsibilities. We cannot accept an easement without finding a source to fund for its care in the future. We provide you with an estimate as we learn more about the land and move forward with the easement transaction.

What happens after an easement is in place?

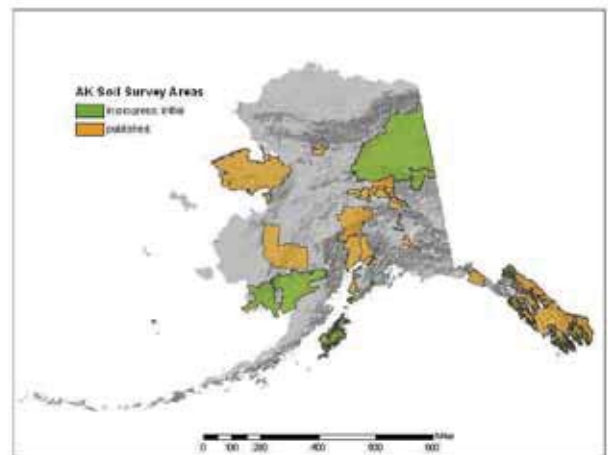
The current and successive owners continue to own, manage and pay taxes on the land. You can continue the uses of the land you agreed to retain. You decide whether or not to allow public access and, if so, on what terms. Your property is still private. You can pass it on to the next generation, sell it, trade it – you retain all the rights of ownership, except those you voluntarily gave away in the conservation easement.

Those rights you voluntarily gave away will be protected by the Alaska Farmland Trust. AFTC's land trust will monitor your property at least once a year to ensure the agreements made in the easement are being kept. If necessary, the Alaska Farmland Trust will defend the terms of the conservation easement in court.

# Soils of the Matanuska Susitna Valley

The state soil of Alaska is called Tanana. This is the Athabaskan word for ‘mountain river’ named after a river in the Mat-Su valley. The majority of this soil type is found in Fairbanks but it is not entirely uncommon in lowland areas of the region. This soil is important to agriculture because it supports many varieties of aspen, birch, white and black spruce. Once these trees have been harvested the soil left behind is rich and highly productive for hay, small grains and vegetables. This soil is also productive for livestock grazing due to the rich grass that will grow on the land.

Of the 318 different soil types found in Alaska, over its 15 million acres of land suitable for farming, only a small portion of it is accessible. This logistical problem poses a threat to Alaskan sustainability. Many of the crops grown in the region grow to extremely large proportions because of the extended daylight hours. Carrots have been recorded at 19 pounds, as well as a 76 pound rutabaga and most famously, a 127 pound cabbage.



Current soil surveys being conducted in Alaska. Photo courtesy NRCS website.

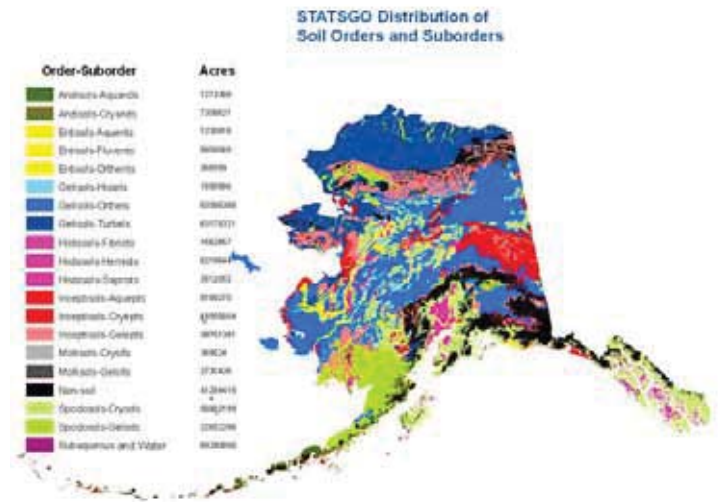
## Soil Survey History

Soils in the Mat-Su valley have been an important resource since the colonial settlement in 1952. Joint efforts from the United States Department of Agriculture Soil Conservation Service, now known as the Natural Resources Conservation Service, and the Alaska Agricultural Experiment Station have been conducting the much needed incomplete surveys. The need for soil surveys in the region has increased coincidentally with the increase in population and urbanization. For the last 90 years soil surveys have been conducted on the land. Initially surveys were performed on 31,000 acres as requested by the Alaska Railway Commission. Data was gathered on crops, surface structure, climate, soils, transportation, markets, mining and settlement. This information was useful in predicting the success of agriculture for the region. By comparing the conditions with areas in Siberia it was found that agriculture in Alaska was indeed possible.

The first soil in the region recognized was of the Knik series. Before 1939 there were no soil surveys conducted in Alaska. By 1967 a large scale soil survey was conducted in the state. Prior to this soil surveys were conducted based on individual need. Soil surveys are important to perform in Alaska due to its increasing growth in population, urbanization, and predicted agriculture growth.

## Soils Types in the Matanuska Valley

Soils in the Mat-Su Valley other than the Knik series include Yensus and Bodenburg series. These soils all contain a layer of silty loess on the soil surface. They have near neutral pH values and are very fertile. Near the area of Palmer, a nearly level terrace, these soils are best-suited for agriculture production of vegetable and grain crops. Areas on hillsides are more suitable for pastures and livestock. During the strong winds of the winter, spring, and some summer days, contribute to the risk of erosion commonplace with these Histosols. Winds can reach up to 60 mph stripping the land of its valuable organic layer.



Soil orders recognized in Alaska. Photo courtesy NRCS website.

These soils gradually change as distance is increased from the Matanuska River and are known as the Deception series. The loess layer becomes more shallow and crops have a harder time developing deep roots. The soils west of Wasilla also become more acidic making crop production more difficult and require more lime and fertilizer to achieve successful yields.

Along the Susitna River are areas consisting of Nancy, Benka and Whitsol series. These can be found along glacial outwash plains and along steep slopes and poorly drained areas. They are ideal for agricultural development but in many areas are too acidic and low in fertility also requiring large amounts of lime and fertilizer for optimal results.

Seasonal changes in precipitation may also pose a problem. Typically there is enough precipitation for most crops but lower than average measurements in spring and early summer can present as a severe deficiency in May to mid-July. If the previous winter had adequate snowfall, then snowmelt in spring can make up for this deficiency and recharge soil moisture. Irrigation via sprinkler can also offset any deficiency in mid summer. When excessive precipitation occurs late in summer this poses a threat for field access to harvest and reduces the quality of the crops as well as the yield.

Wind patterns in the Mat-Su valley also have a strong impact on these agricultural soils. Near Palmer the winds are often referred to as the 'Matanuska Winds.' These strong winds deplete the surface of the snow that is

acting as an insulating cover. When this cover is removed soil temperature drops and frost penetration is found deeper in the soil. During spring when 'break up' occurs (when the rivers of ice melt and break up) the frost will perch groundwater forming depressions and ponding. These drainage issues may last days into weeks thereby limiting planting and cultivating. In spring when the strong 'Knik Winds' occur loess may be blown 3,000 feet into the atmosphere and can darken the air. This wind blown silt is the best agricultural soil in the region so erosion is a major issue that should be addressed and conservation efforts practiced. In addition to erosion control, these winds expose roots of seedlings ultimately destroying them.

Permafrost is not found in the Matanuska Valley. Near Fairbanks, much of this wind blown silt from the valley is deposited onto discontinuous permafrost and forms lenses of almost pure ice. Permafrost is worth mentioning because it poses its own threats with agriculture by hindering soil drainage, increasing flooding, and having higher erosion and silt carrying properties as water flows downstream.

### **Developing Farmlands**

To develop agricultural land in the region large areas are cleared by 'chaining' using two bulldozers with a chain running between them. This chain knocks down vegetation then it is placed in rows and burned. Smaller areas use only a bulldozer, knocking over trees then brush is burned. Both of these methods are a wasteful use of wood resources. NRCS suggests clearing the farmland then utilizing the logs from trees as a resource and burning the remaining thatch alongside berms. Clearing land for agriculture is suggested to be accomplished after the ground has frozen in the fall and winter to minimize wind scouring.

The soils in the Mat-Su Valley are the best for agriculture Alaska has to offer. Although Alaskan soils do not meet the standard criteria established by Congress to be a Class 1 soil. Soils in this region are considered to be Class 2 soils. Congress has very specific technical criteria to identify prime farmlands. These criteria look for natural moisture content, specific soil temperatures range, pH between 4.5 and 8.4 in the rooting zone, low risk for flooding, low risk to wind and water erosion, minimum permeability, and low content of fragmented rock. Alaska has no Class 1 soils. This hinders the kind of government subsidies many of the farmers of the region are eligible for which will be discussed later in this paper.

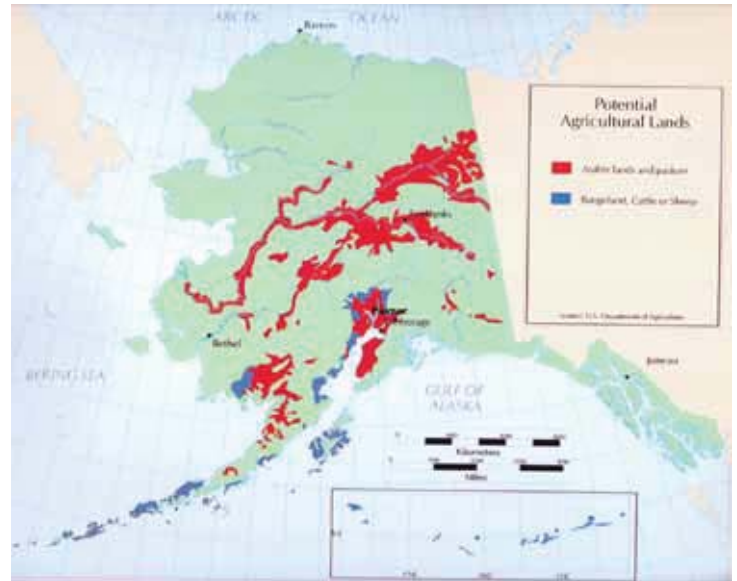
### **Soil Fertility in the Mat-Su Valley**

Soils in the Mat-Su Valley are assessed for fertility by dividing them into two different groups. These groups are determined by examining the mineral content of the soil. The majority of the area soils were deposited by the wind and minerals are either layered/crystalline (loess) or noncrystalline/allophanic originating from

volcanic (tephra/glass). The proportion of these two mineral types and the amount of weathering they have been subjected to determine the soil's fertility. Soils originating from volcanic glass are called tephra-affected soils and the remainder soils are referred to as loess (wind-blown) soils.

### Tephra-Affected Soil Properties

These soils are made up of large amounts of volcanic glass. Most are found west of Wasilla or in the Susitna valley. Due to their advanced weathering aluminum and aluminum are abundant, and the soils are strongly to moderately acidic. They have lower base saturation and have a high aluminum saturation percent and phosphorous sorption capacity (NRCS, Soil survey of Matanuska-Susitna Valley Area, Alaska). These soils are not ideal for farming as yields are greatly decreased and fertilizer use is a must.



Viable agricultural land. Pearson, Alaska in Maps.

### Loess Soil Properties

Loess soils are made up of layered crystalline minerals but may also contain small amounts of volcanic glass. The amounts tend to be so small that it does not have a direct affect on its chemical properties. The Knik and Bodenbug are among the loess group and mostly east of Wasilla, in the Palmer area and are being threatened by urbanization from population growth and urban sprawl from Alaska's largest city, Anchorage. These soils are only slightly acidic, have a relatively high base saturation, lower active aluminum and lower phosphorous capacity (NRCS, Soil survey of Matanuska-Susitna Valley Area, Alaska). These soils also require less liming and fertilizing.

### Classifying Soils

As previously mentioned, agricultural soils in the Mat-Su Valley are classified as Class 2 soils. As defined by the Soil Conservation Service 1961 as "soils that have moderate limitations that reduce the choice of plants or require moderate conservation practices."

This Land Capability Class is designed to determine a soils limitation for field crops, risk of damage, and response to management. Soils are grouped in 3 levels; capability class, subclass, and unit. In capability class the soils are ranked 1-8. The greater a soils number, the greater the limitations. Most soils in the fertile Midwest are



ranked as Class 1 soils. Class 1 soils have few limitations restricting their use. There are no Class 1 soils in Alaska due to low soil temperature.

Subclasses are designated by the addition of letters e, w, s or c to the unit number. For example, 2e would be an Alaskan soil at risk for erosion, w stands for water in or on the soil interferes with plant growth, s would signify drought, stony, or shallow and c (rarely used) signifies very cold or very dry.

The role these numbers play in obtaining government subsidies can hinder achievement. Many farms in the region are ineligible to participate in programs due to their classification as class 2 soils. Because of Alaska's unique terrain and environment, exceptions should be made to aid farmers in receiving benefits to promote local food security.

# Government Programs

There are many government funded programs local farmers can take advantage of if they meet all the required qualifications. These range from conservation easements, state and federal government loans and grants, and tax subsidies, as well as programs that manage agriculture for conservation, preservation and resource protection. Below are some of the programs that the Alaskan farmer should be aware of.

## **Federal Programs:**

1) The Farm Bill (not all programs funded under the farm are implemented in Alaska):

Also known as the Food, Conservation, and Energy Act of 2008 the farm bill is probably the most well known by farmers and ranchers. The farm bill provides support under many different programs briefly outlined here:

Title 1, Commodities: Provides income support to farmers growing specific crops such as wheat, feed grains, cotton, rice, oilseeds, sugar, dairy, and peanuts.

Title 2, Conservation: Focuses on improving management through retiring exhausted land and working land programs. This program focuses on environmental conservation, protection, and preservation.

Title 3, Agricultural Trade and Food Aid: This program focuses on agricultural exportation and international food assistance and other issues related to the World Trade Organization (WTO).

Title 4, Nutrition: This program focuses more on domestic food and nutrition and provides food stamps and other nutritional supplemental aid.

Title 5, Farm Credit: These are focused on direct and guaranteed loans.

A) Direct Loan Programs are available through appropriated funds for purposes of ethanol production facilities, value-added agricultural products, livestock expansion, agricultural production, aquaculture development and others. These loans can be Farm Ownership Loans, Farm Operating Loans, Emergency Loans, Youth Loans, and Indian Tribal Land Acquisition Programs.

B) Guaranteed Loan Programs provide banks, credit unions with up to a 95 percent guarantee of the loss of principal and interest on a loan. The FSA allows lenders to give credit to farmers who do not meet lenders required specifications to qualify for other loans. These loans are directed to new farmers and minority groups. Loan under this program are Farm Ownership Loans and Farm Operating Loans.

Title 6, Rural Development: Funds business and community programs for planning, feasibility assessments and coordinates with local, state and federal programs.

Title 7, Research: This section of the farm bill can provide assistance for extension programs such as bio-

technology, organic production and biosecurity.

Title 8, Forestry: Focuses more on forestry management and agroforestry programs.

Title 9, Energy: Helps farmers to purchase renewable energy systems and educational programs.

Title 10, Horticulture and Organic Agriculture: This new section of the bill will aid for fruit, vegetable and specialty crops and organic production.

Title 11, Livestock: This is also a new section of the farm bill governing livestock and poultry production. It monitors proper labeling for retailers and meat and poultry state inspections among.

Title 12, Crop Insurance and Disaster Relief: This new section of the bill covers federal crop insurance but is separate from the supplemental disaster assistance in Title 15.

Title 13, Commodity Futures: Covers reauthorization of the Commodity Future Trading Commission (CFTC).

Title 14, Miscellaneous: This section is for other programs not covered under the above titles. It can include assistance to limited resource farmers or minority groups.

Title 15, Trade and Tax Provisions: This title is directed to offset spending initiatives for some programs. It also covers the supplemental disaster assistance and disaster relief trust fund and other tax-related fees.

2) The Natural Resources Conservation Service offers the following programs if the required specifications are met: The Environmental Quality Incentives Program (EQIP) is designed dependent on what conservation practices can be met on your land. EQIP falls under the Cooperative Conservation Partnership Initiative (CCPI). It is purely voluntary and can provide financial and technical support for up to ten years. Plans are designed and on a contractual basis conservation practices are implemented on land to improve or protect the local soil, water, plant, animal, and air on agricultural land. This program is also useful to help landowners meet the federal, state, tribal and local environmental regulations.

To be eligible in Alaska you must currently have an agricultural operation and have produced a minimum of \$1,000 in 2 of the last 5 years or be able to show a loss from a farm operation or proof of ownership of the operation. This can include crops, livestock, livestock feeding grains, manure/compost materials, and forestry operations. Special considerations and payments are given to beginning farmers, limited resource farmers, and minority groups.

High Tunnels under the EQIP Program:

NRCS offers a high tunnel program as part of the EQIP program that covers crops and extends the growing season by approximately two to three weeks at the beginning and end of the growing season. These high tunnels

increase the temperature and reduce heat loss during the cold nights. High tunnels are not the same as greenhouses as they do not have electrical, heating, or ventilation systems. Ventilating high tunnels is done manually by rolling up plastic sheeting over the structure and allowing air to flow through. Crops can either be grown directly into the soil or by building raised beds inside the high tunnel. According to the EQIP program, high tunnels are not designed for growing crops on table tops or in portable pots.

3) Also under the (CCPI) falls the Conservation Stewardship Program which focuses on many different methods from practicing no-till farming to burning fields to remove crop residue. The focus is on improving air quality, animal/wildlife enhancements, energy enhancements, plant enhancements, soil quality, soil erosion protection, water quality and quantity, special needs programs and bundle programs.

4) Resource, Conservation and Development Program (RC&D):

This program is authorized under the Food Security and Rural Investment Act of 2002 and is established as a non-profit group and is strictly a leadership program consisting of government officials, farmers, ranchers and civic and business leaders whose interest is vested in what is best for their region.

5) Alaska Association of Resource Conservation and Development organizations (AARC&DO):

This group acts as a forum for organizations in the state and serves as a liaison between state, regional and national legislative directors. Its mission is to encourage responsible economic development and natural resources and the people it will affect.

6) The Conservation of Private Grazing Land (CPGL) program ensures that assistance in educational materials, technical needs and related matters is available to owners of private grazing lands. It provides opportunities for better land management practices, soil erosion, energy efficiency, water conservation, wildlife habitat, protecting regrowth of forage and grazing plants, greenhouse gas sequestration via plants, increasing organic matter in soil and using grazing lands as biomass energy and raw materials for industrial products.

7) Conservation Reserve Program (CRP) is through the Farm Service Agency and is strictly voluntary. Participants can receive annual rental payments by establishing long-term resource conserving cover crops farmland that meets the requirements. Rental payments are determined by the agriculture rental value of the land. Contracts last for 10 to 15 years. This program protects topsoil from erosion, reduces water runoff and sedimentation thereby improving and/or protecting groundwater that feeds into lakes, rivers, ponds, and streams. By maintaining a cover crop it also provides wildlife habitat thereby increasing wildlife population.

8) The Agricultural Water Enhancement Program (AWEP) is also voluntary. Its focus is on conservation efforts providing financial and technical assistance to conserve surface and groundwater ultimately improving water quality.

9) The Conservation Innovation Grants (CIG) is voluntary and its goal is to stimulate and activate conservation efforts and technology while balancing federal investment in environmental protection. These grants are awarded to non-governmental agencies, tribes, or individuals.

10) Farm and Ranch Lands Protection Program (FRPP) matches funds to buy development rights to preserve farmlands and keep them in agriculture. This program works with state, tribal or local governments or non-governmental organizations to acquire conservation easements such as with the Alaska Farmland Trust. This program can match up to 50 percent of the fair market value of the conservation easement.

Each of the above programs have specific requirements for eligibility. Not all agricultural lands will qualify and areas that are at greater risk of degradation may be given consideration and priority to funding.

### **State and Non-Profit Programs:**

In Alaska there are additional programs available to aid farmers. Some are state managed while others are non-profit entities.

1) The National Council of State Agricultural Finance Program/Project has an Agricultural Revolving Loan Fund (ARLF) available to Alaskan farmers, ranchers, homesteaders, partnerships or corporations. The ARLFs mission is to promote agricultural development as an industry. There are different loans available dependent on the land-owners needs from clearing their land, purchasing equipment and livestock to building irrigation systems.

2) The Alaska Rural Rehabilitation Corporation (ARRC) was established in the colony days of the Mat-Su Valley and under the direction of the Department of Interior and the Federal Emergency Relief Administration. Today, it still provides the community with farm loans and scholarships to students entering an agricultural industry.

3) The Alaska Farmland Trust Corporation (AFTC) is a non-profit agency and works to purchase and receive land donations to protect existing farmland from urbanization through conservation easements. Many different

programs are available but funding is limited as it is a new growing entity created by the ARRC. The AFTC also addresses community outreach and raises awareness of Alaska's dwindling farmland and the importance of its preservation. It focuses on Bargain Sale of Land, Land Donations, Donating Land by Will, Donating a Remainder Interest in Land, and Conservation Easements. Many of these programs may reduce the landowners property taxes by reducing the market value of the land since it will remain zoned agriculture for a lifetime.

4) The Agricultural Revolving Loan Fund and Assets was established in 1953 to promote the development of agriculture in the state. These loans carry a moderate interest rate and there are 6 types of loans available. These range from farm development to building construction or to renovate existing buildings, chattel loans to purchase equipment of livestock, short term loans to finance expenses, irrigation loans, product processing loans and loans for clearing land.

These incentives are a useful tool for any person interested in farming in the Mat-Su Valley. There is a dire need of more agriculture production so that Alaska may offset the high cost of importing food, raising food quality, and supporting local economy.

# Conclusion

Alaska's unique environment makes agriculture a challenge. It is faced with difficulties unlike anywhere else in the United States. Since the development of the colony days, farmers in the region have been faced with extreme environmental conditions and logistic challenges. Today, because of Alaska's growing population, farmers are still faced with environmental and logistical problems but also with urbanization problems. More people are moving into the fertile Mat-Su Valley from Alaska's largest city, Anchorage, for a taste of rural living. Unfortunately, this urbanization is threatening Alaska's limited accessible farmland.

Community outreach programs, such as the one implemented by The Alaska Farmland Trust and the Division of Agriculture's 'Alaska Grown' logo, awareness is being raised of the importance of self sustainability. The growing season is shorter than in the lower 48 and lower soil temperatures make growing standard crops, like corn, nearly impossible. Vegetables produced here tend to taste better because of the higher sugar content from the nearly 20 hours of daylight they are exposed to. The majority of Alaska's produce found in grocery stores is shipped on vessels and arrives overripe with a shorter shelf life. Raising fuel prices will only add to the problem of supplying residents with fresh, healthy produce.

In a state one third the size of the lower contiguous states that has barely over a half a million people, the need for commercial farms is not large. Many smaller farms are in the valley but due to their small size and class 2 soil types they are not eligible for many of the government programs and subsidies in the valley.

Many residents have opted to having their own garden to supply fresh produce for their family. Many Alaskans rely on their family owned gardens and subsistence hunting of moose, fish, and bear to offset the high grocery costs.

Soils in the Mat-Su Valley are rich with an organic layer and ideal for growing vegetables and grazing lands. However, due to the strong winds erosion poses a threat to these fertile soils if not properly managed. Many conservation directed programs are available to farmers to preserve and protect their lands ranging from loans to practice farming, to conservation efforts for environmental degradation, or preserving the land as agriculture through a land trust system.

Alaska is still considered 'The New Frontier' and is faced with challenges unlike any other state. Its uniqueness requires management practices to be more innovative. As Alaska's development continues to grow it is pertinent to address the issues of urbanization and protect farmland and soil loss so its residents can become more self sufficient.

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