

# **The Farm Report:**

## **Current Practices of Thirteen Chilkat Valley Food Producers**

*Prepared by the Food and  
Agriculture Subcommittee of the  
**Haines Energy Task Force***

**February 2008**

---

## Table of Contents

<b>Introduction</b>	<b>1</b>
<b>Type of Food Production</b>	<b>2</b>
<b>“Special” or “Different” Practices - How Replicable? Practical?</b>	<b>3</b>
<b>Pitfalls and Problems</b>	<b>4</b>
<b>Cost – Money, Time, and Effort</b>	<b>6</b>
<b>Plans for Improvement</b>	<b>8</b>
<b>Scaling Up</b>	<b>9</b>
<b>Greenhouse</b>	<b>9</b>
<b>Economical Crops and Animals</b>	<b>11</b>
<b>Food Storage</b>	<b>11</b>
<b>Amount of Food Raised</b>	<b>12</b>
<b>Seed Saving</b>	<b>12</b>
<b>Recommendations to Bolster Local Production</b>	<b>12</b>
<b>Petroleum Based Garden Supplies</b>	<b>14</b>
<b>Necessary Purchases</b>	<b>14</b>

**Appendix A: The survey questions**

**Appendix B: The Benefits of Raising Animals**

**Appendix C: Proposal for Community Food Growing Operation:  
Chickens and Eggs:**

**A Practical Proposal – a Home Operation “Scaled Up”**

## **The Farm Report: Current Practices of Thirteen Chilkat Valley Food Producers**

*Prepared by the Food and Agriculture Subcommittee of the  
Haines Energy Task Force*

### **Introduction**

Scarcity of oil and/or increasing transportation costs will be reflected in rising food costs and potential food shortages, which in turn will create incentives for Borough residents to produce more food locally. A sensible way to respond to rising fuel costs and shortages is through self-sufficiency and wise use of local resources.

Although home food production is not as wide spread as it once was in the Chilkat Valley<sup>1</sup>, a significant number of local residents currently produce some of their own food. We interviewed thirteen Chilkat Valley residents who grow gardens and/or raise animals for food. We asked them to share successful crops, techniques, and strategies particular to our area. We hope this report will provide useful information and also encourage others to produce food for local consumption.

Respondents answered 16 questions (see Appendix A: Questions) related to crop and livestock production. Stephanie Scott compiled the interview information and drafted “The Farm Report.” In alphabetical order, the respondents are:

- Bob Andrews
- Nancy Berland
- Donna Cattoti & Rob Goldberg
- Leigh Galinski
- Mardell Gunn
- Bob Henderson
- Myrna Kornelius
- Sally McGuire
- Carol Pahl
- Marlena Mooring and Gary Saupe
- Gina St. Clair
- Rich & Judy Tolles

---

<sup>1</sup> According to the Alaska Department of Community and Economic Development, “the Chilkat Valley has long been one of the region’s premier garden spots,” and “like other regions of the state...produced much more of its food before modern refrigeration and transportation made importing food more economical.”

[http://www.dced.state.ak.us/dca/aeis/Haines/Agriculture/Haines\\_Agriculture\\_Narrative.htm](http://www.dced.state.ak.us/dca/aeis/Haines/Agriculture/Haines_Agriculture_Narrative.htm)

- Carrie and Ron Weishahn

## The Food and Agriculture Subcommittee of the Haines Energy Task Force

The Food and Agriculture Subcommittee of the Haines Energy Task Force consisted of Nancy Berland, Mardell Gunn, and Mike Denker, with Berland and Gunn acting as co-chairs. The following community members attended subcommittee meetings: Mikail Denker, George Figdor, Tommie Jimmie Jr., John McClain, Burl Sheldon, Susie Scollon, Megan Sherman, Ellen Starr, and Betsy Wilson. Scott Bradford, Bob Henderson, and Leigh Galinski made subcommittee presentations.<sup>2</sup> Suggestions from various community members<sup>3</sup> also informed final Food and Agriculture Subcommittee recommendations to the Haines Energy Task Force's final report: Peak Oil & Energy Transition: Preparing for Challenges and Opportunities, February 2008.

### Type of Food Production

The thirteen respondents raise animals, vegetables, berries (strawberries, raspberries), and fruit trees (apple, plum, sour cherry, sweet cherry). One respondent raises oats.

Eleven out of the thirteen have a greenhouse in addition to a garden. Greenhouse produce includes tomatoes, green peppers, cucumber, basil, ground cherries, green beans, celery, parsley, and other herbs.

Eight of the respondents raise animals in addition to growing vegetables and fruit. Livestock includes milk cows, chickens for meat and eggs, guinea fowl, pigs, rabbits, turkeys, goats, sheep, and geese. Chickens were listed most frequently (seven out of eight respondents). However, one respondent stated that she no longer raises chickens "...because of how much work it was in the winter and the expense of the food." Another respondent stopped raising pigs because the purchase of young pigs became cost prohibitive.

Vegetables grown include potatoes, broccoli, carrots, chard, corn, lettuce, fennel, sugar snap peas, zucchini.

---

<sup>2</sup> Bradford, Scott. Manager - Haines Water / Sewer Dept. Presentation on the Haines Water / Sewer Dept. Sludge Composting Research Project. June 28, 2007.

Galinski, Leigh. Chilkat Valley Farms – Covenant Life Center. Presentation of the history and operation of the Chilkat Valley Farms in Haines, Alaska. July 12, 2007

Henderson, Bob. Presentation on the history and practices of agriculture in the Haines valley. Aug 9, 2007

<sup>3</sup> Topics included local food and agriculture, school gardens and nutrition programs, waste and composting, subsistence, defining food security, historical agricultural use in the Chilkat Valley. See the Food & Agriculture Subcommittee Report on file at the Haines Borough Office.

## “Special” or “Different” Practices – How Replicable? How Practical?

All those who responded (n = 12) to the question of the “replicability” and “practicality” said that the growing practices can be easily implemented; some are labor intensive, but none are difficult or impractical. The essential ingredients are land and willing labor. The Haines growers surveyed perceive that use of **organic methods, raised beds, drip irrigation systems**, the cultivation of **fruit trees**, gardening in **harsh conditions**, raising **unusual crops**, producing **cheese and butter**, may make them “different” or “special.”

Eight out of thirteen respondents categorize their practices as “**organic**.”<sup>4</sup>

Some respondents provided an example of their organic methods.

Sally McGuire: *Annually, I pull back the dirt and place fresh manure under it. As this breaks down, it releases nutrients and heat as well.*

Carol Pahl: *Twenty-five years ago we hauled in tons of seaweed and manure from the fair grounds. We mixed this with clay. Yearly I turn all the plant residue (carrot tops, leaves, etc.) back into the beds, adding some compost as well. Then I turn it in with a shovel in the spring. I do not till my beds. My beds are so light from all these years of shovel turning that the tiller just sinks.*

Gina St. Clair: *I use a seaweed tea for fertilizer. It consists of 5 gallons of seaweed in a garbage can of water steeped for a couple of days. I use it as a foliar feeder.*

Marlena Mooring and Gary Saupe: *In the fall, we gather 12-14 big garbage bags of seaweed and cover the three vegetable gardens with it. In the spring, the seaweed is turned into the dirt. We also use spent hops from the brewery as well as wood ashes.*

Rich & Judy Tolles: *We use garlic with cayenne pepper for bugs.*

McGuire, Pahl, St. Clair, and Tolles thought that their methods would be easy for others to implement. (McGuire: *totally practical*; Pahl: *very practical*; St. Clair: *very practical*; Tolles: *very easy*.)

Five out of thirteen respondents report using **raised beds**.<sup>5</sup>

---

<sup>4</sup> According to <http://forums2.gardenweb.com/forums/organic/>, “Organic gardening is most easily defined as a philosophy that stresses the use of naturally occurring substances and friendly predators and avoiding man-made chemical fertilizers and pesticides.”

<sup>5</sup> According to <http://davesgarden.com/guides/terms/go/726/a> “raised bed” is “...a bed that has been raised above the surface of the ground. Some type of barrier such as timbers or stones

Two respondents use a **drip irrigation**<sup>6</sup> system. Gunn specified that her drip irrigation system is “automatic.”

Two respondents grow (Donna Cattoti and Rob Goldberg), or are attempting to grow (Carrie and Ron Weishahn) **fruit trees**. Cattoti/Goldberg said: “Anyone willing to put up a fence to protect the trees from moose and bears and porcupines can grow fruit trees here.” The Weishahns, who live up the highway, are attempting to grow fruit trees in the greenhouse to counter branch-breaking snow loads, and trunk girdling rodents: “All is practical, but maybe more successful where there is less snow and warmer nights than here.”

Nancy Berland grows **oats** for breakfast cereal and uses the straw for mulch. Her yield was 2-3 quarts of oat groats. She reported, “This process of removing seeds from the stalk is very labor intensive for the end result. The oats grew well in the orchard with little attention. I harvested them at the end of the growing season, mid to late September.”

### **Pitfalls and Problems**

Haines farmers and gardeners face many challenges.

Firstly, gardens and livestock have to be protected from “predators” like bear, moose, porcupines, mink, ravens, mice, voles, and insects. The most common insect pests are slugs, root maggots, and cut worms. Leigh Galinski, reporting for the Covenant Life Center, recalled a season when a bug damaged all the strawberry blossoms.

Weeds are always a problem, including chickweed, buttercup, and mares tails.

Diseases mentioned were various molds, mildew, potato scab, a fungus that attacks fruit trees, and slimy moss growing on insufficiently aerated clay soil.

There are also challenges associated with the climate, geology, and economics of the region. Soils can be too acidic or too alkaline, and can be too heavy (clay), or too light (sand). There can be too little sun for both gardens and greenhouses. A lack of sun can make it difficult to get “starts” going early enough to mature. Heavy snows have been known to damage greenhouse structures and cold temperatures have caused fatalities in rabbit litters born during a cold snap. High electrical rates can prohibit adding artificial

---

usually frames raised beds. They are often used in areas where poor soil exists; new soil can be imported and placed into the beds. “

<sup>6</sup> A drip irrigation system, defined at, [http://glossary.gardenweb.com/glossary/drip\\_irrigation.html](http://glossary.gardenweb.com/glossary/drip_irrigation.html), is a “... method of irrigation where tubes or hoses, sometimes porous, are brought close to plants and water is allowed to trickle out at a very slow, but constant rate.”

light to mitigate lack of sun. Finally, irregular ferry schedules make it difficult for commercial farmers like the Covenant Life Center to get their produce to other markets.

Respondents also reported some solutions to the above problems.

Marlena Mooring fights weeds with flowers: *“I plant flowers in the vegetable gardens to minimize the weeds growing in the patch. The flowers don’t leave much for the weeds to grow so I spend maybe a total of 4 hours throughout the total growing season weeding. I plant small marigolds, alyssum, bachelor buttons, and lobelia.”*

Mardell Gunn fights Equisetum (Mares Tail) and chickweed by lining her raised beds with abandoned roof tin. Like Saupe, Gunn also plants flowers throughout her vegetable gardens.

Other “weed fighting” strategies include bartering horse rides for weeding (Henderson) and turning to hydroponics<sup>7</sup> in the greenhouse (Covenant Life Center, Galinski).

According to Tolles, slugs are “the perennial problem” requiring constant abatement. Gina St. Clair uses copper tape around stalks. She collects slugs in grapefruit halves. Saupe uses clay saucers to collect her slugs and then drops them into salt water. She has also discovered that slugs, though lovers of green lettuce, don’t like red lettuce.

Up the highway, Bob Andrews has trained dogs to keep bears at bay. Cattoti/Goldberg and St. Clair report investing in fencing against bears and moose on the Peninsula. Berland, also gardening and growing fruit trees on the Peninsula, recommends a tip learned from Steve Kroschel: make a 45-degree angle at the top of the fence so any porcupines climbing it fall off outside of the garden. To keep out mice and voles, Berland reports putting *“a smooth surface - plastic or metal strips - on the outside of my raised beds that mice and voles can’t seem climb. I also use mousetraps, plastic circles around cabbage plants, and put human hair in mice holes.”*

Some valley soils need constant amendment. Cattoti and Goldberg write that if the clay soil is not aerated enough or if it is depleted, a slimy moss grows on it. However, adding seaweed or potting soil remedies the problem. Soil up the valley, worked by Gunn, can be very rocky, sandy, and alkaline. She has planted cover crops<sup>8</sup>, and tilled in seaweed, manure, and compost.

---

<sup>7</sup> Hydroponics is the science of growing plants without soil, by the use of water containing the necessary mineral nutrients. (Thorndike Barnhart World Book Dictionary, 1989.)

<sup>8</sup> A cover crop is “... a crop that is planted in the absence of the normal crop to control weeds and add humus to the soil when it is plowed in prior to regular planting”.  
[http://en.mimi.hu/gardening/cover\\_crop.html](http://en.mimi.hu/gardening/cover_crop.html).

Root maggots are one of the biggest problems for Chilkat Valley farmers and gardeners. Bob Henderson states that his “Biggest enemy is root maggots that attack cole<sup>9</sup> crops.” In fact, he “gave up” on rutabagas, radishes, and turnips. The insecticides he tried proved too harmful. He reduces the damage in the cole crops he now raises by sprinkling wood ashes around plant bases but finds this to be ineffective when it rains.

According to Berland, Pahl, and St. Clair, using a cloth insect barrier<sup>10</sup> until the first week in July can control root maggots. One popular version of this produce is called Reemay<sup>11</sup>.

### **Costs – Money, Time, and Effort**

Answers ranged from “No idea!” to specific dollar amounts.

**Money.** Including propane for the greenhouse, but excluding capital expenditures, the six respondents who tried to estimate costs for growing vegetables, reported annual totals from a low of \$30 to a high of \$160. Bob Henderson said that he couldn’t give an estimate of the cost, but that he did “raise 5 kids on this farm and spent very little on groceries.”

Gina St. Clair reported approximate cost for livestock as \$300 to raise one 100-pound pig; and \$10 per chicken raised. Her chicken house estimate is \$800 plus another \$200 for a bear-proof electric fence.

Five respondents estimated the cost of materials to build a greenhouse. These estimates ranged from \$300 to \$1600. Tolles and Andrews kept the cost down by using recycled materials (\$1500 and \$600 respectively). Chilkat Valley Farms estimated the cost of a replacement greenhouse to be \$16,000.

Another expensive, non-recurring cost is the drip irrigation system. Gunn estimates “hundreds of dollars.” The pay off, she says, is the freedom to leave her garden for weeks at a time.

---

<sup>9</sup> "Cole" refers to any of various plants belonging to the Cruciferae or mustard family. The mustard family includes cool season crops such as Brussels sprout, cabbage, cauliflower, collards, kale, kohlrabi, mustard, broccoli, turnips, and watercress. For more information, see <http://plantanswers.tamu.edu/vegetables/colecrop.html>

<sup>10</sup> An insect barrier is “...a translucent polypropylene fabric which transmits 95% of sunlight but causes almost no heat buildup”, <http://www.gardensalive.com/product.asp?pn=2001&bhcd2=1192217372>

<sup>11</sup> Reemay is described as “...a spun-bonded, reusable polyester fabric that floats over the plants in the row while allowing 75% light transmission.” See [http://www.abundantlifeseeds.com/stores/1/Reemay\\_67\\_x\\_20\\_P648C53.cfm](http://www.abundantlifeseeds.com/stores/1/Reemay_67_x_20_P648C53.cfm) for more product information or check out any farm or garden supplier.

**Time.** The amount of time invested ranged from minimal (4 hours throughout the growing season) to a part-time job (10-28 hours/week). Despite this extraordinary range in time required, respondents reported eating their produce for a minimum of 7 out of 12 months of the year. Chilkat Valley Farms has 5 volunteer laborers. Bob Henderson advised that “if you do not enjoy it you are wasting your time as it is labor intensive.”

The following chart shows some specifically mentioned expenses including the average, the range and the number of respondents who contributed to the estimate.

Categories of expenditures	Specific Expenses
Seeds (purchased annually)	Range: \$20 - \$150 Eight respondents
Fruit Trees	\$25/each One respondent
Fertilizer/soil amendments/pest control (purchased annually)	Average (high) \$53 Average (low) \$42 Range: \$25 - \$100 Four respondents.  One respondent cited yearly expense for bone meal and lime but did not include figures.
Greenhouse (capitol expense)	Range: \$200 to \$1500, not including one estimate for \$16,000 for a commercial greenhouse.
Propane for greenhouse	Range: \$25-65 Two respondents

### Plans for Improvement

Responses ranged from “*can’t think of anything right now,*” to just “*spend more time,*” to “*try new crops,*” to very specific plans.

Two greenhouse owners intend to use more solar power. Andrews will change out his grid electric fan for a solar powered one. He reasons, “*there isn’t much need for a (fan) if the sun isn’t shining!*” The Tolles will put a rock base in their greenhouse, and heat the rocks with a solar powered fan to warm the greenhouse at night with the heat that rises from the rocks. Berland would attach a greenhouse to her home.

Two gardeners want to plant more crops. McGuire will grow more animal feed. St. Clair will grow more potatoes.

Others plan on weed abatement. Pahl will put down a weed barrier between beds to inhibit buttercup. Weishahn also wants to try weed matting. Kornelius will schedule more time to weed during the season.

Pahl wants to remake raised beds to replace those used for the past 25 years. Gunn and Kornelius plan to increase the number of raised beds they have.

Pahl, Gunn, and Cattoti/Goldberg talked respectively about “*hauling in more seaweed and manure*”, “*continually building up the soil,*” and “*getting more seaweed.*” In a similar vein, Galinski at the Covenant Life Center also hoped to “*increase the organic matter in the soil,*” maybe with the help of a manure spreader.

Cattoti and Goldberg said that they have determined not to plant any more fruit trees in the garden area, “*Especially, pie cherries as they are invasive.*”

Representing a commercial enterprise, Galinski said that she would like to come up with a way to cut costs; perhaps by cutting freight costs.

## Scaling Up

Eleven respondents replied to the question: How well would your practices translate to a larger, commercial enterprise?

Three respondents focused on **raising chickens**. The consensus seems to be that raising layer hens for eggs commercially would be cost effective. Andrews speculates that “meat” chickens could be raised cost effectively if a cheaper source of feed could be identified. He suggests “chicken tractors.” Andrews explains:

*A chicken tractor is an enclosed house or pen that is moved daily or every other day. The chickens eat bugs, scratch up the dirt, and fertilize all at once. Chicken tractors could supply much of the bird’s food.*<sup>12</sup>

Three respondents seemed positive about the possibility of translating what they do to a larger commercial enterprise, but all three had caveats. Two respondents speculated that, based on their present capacity to produce more than they need, they could expand to a commercial enterprise if they were willing to work more (Gunn) and invest in more fencing (Cattoti/Goldberg). A third respondent acknowledged the need to expand present “start” capacity. A heated greenhouse and more lighting would both be required (Weishahn).

Three respondents felt that their food producing operation would not be commercially viable because it is “*...too labor intensive to see at reasonable prices*” (Pahl). Kornelius made a similar observation stating simply that it wouldn’t work well to operate

---

<sup>12</sup> For more about chicken tractors, go to <http://www.chickentractor.net/>

commercially “...because of the amount of work necessary.” Berland said that her operation would not be commercially viable – nonetheless, she sold her only bumper crop (kale) to a local market.

Henderson and Galinski sell commercially. Henderson sells animal products and vegetables that he does not use personally. His current sales include carrots, potatoes, and green beans. The Covenant Life Center sells flowers, wholesale vegetables, and “you-pick” vegetables and berries. A local market takes all that they have to sell. Galinski states that, “*It works for us with volunteer labor, but if we had to pay for labor we would not make a profit.*”

### Greenhouses

Regardless of whether a greenhouse is heated or unheated, it is likely to give a one month “jump” to growers in the spring, and provide for a one month extension in the fall. A greenhouse does not need to be artificially lit in Haines in order to provide this advantage. The location of the greenhouse governs how much it can extend the season. For example, Berland reports that her greenhouse “*is in the tide zone and doesn’t hold heat, so I gain only a few weeks on each end of the season.*”

The nine respondents who currently operate greenhouses replied to the following series of questions:

<b>Respondent</b>	<b>How much of a jump do you get on the season?</b>	<b>Do you use artificial light?</b>	<b>Do you use a mechanical heat source?</b>
Andrews	One month start in the spring and one month extension in the fall	No	Yes, propane
Berland	A few weeks on each end of the season	No	No
Cattoti/ Goldberg	An extra month at the beginning of the season because the greenhouse. In the fall I plant kale and sometimes celery even though it is freezing outside.	No	No
Galinski (Covenant Life Center)	Several months. Starts are planted in January.	Yes	Yes
Gunn	There is a greenhouse attached to the house (indoor greenhouse) and a freestanding greenhouse. I start indoors in mid April and eat cucumbers by late May; tomatoes in July.	No	No

Respondent	How much of a jump do you get on the season?	Do you use artificial light?	Do you use a mechanical heat source?
Kornelius	Does not give me a “jump,” because I no longer heat it. I get a “jump” by buying starts.	No	No
Pahl	Only a week in the spring because the greenhouse is not heated. It is used as a cold frame with starts in the spring. Row covers help with the temperature. It can extend my fall season from a few weeks to a month.	No, not in the greenhouse, but I use 8 fluorescent bulbs in the house for 6 weeks, 24 hours/day for starts.	No
Mooring/Saupe	No season extension; greenhouse is not completely closed in.	No	Yes, propane
Tolles	One month “jump” in spring and one month extension in the fall.	No	Yes, Propane

Henderson reports that he used to use a greenhouse to get an early start but he “quit using the greenhouse as I have found that most years I can plant the seeds directly and be just as far ahead.”

## Economical Crops and Animals

### Crops:

Eleven of the 13 respondents replied to this question. The most frequently cited was potato. Seven of the thirteen people believe that potatoes are one of the most cost effective crops to grow in Haines. Next came broccoli and lettuce (5), and kale (4). Each of the following crops was mentioned 2 or 3 times: cabbage, carrots, cauliflower, chard, garlic, snap peas, and zucchini.

These garden and orchard crops were mentioned once: apples, rhubarb, cherries (sweet and sour), strawberries, leeks, onions (from starts only), spinach, and green beans.

Cherry tomatoes, tomatoes, and cucumbers were each mentioned as economical greenhouse crops.

### Animals:

Seven out of the 13 participants reported raising animals for food.

Everyone acknowledged that raising chickens, whether for meat or for eggs, was cost effective. Some people raise chickens for eggs (layer hens), and some raise meat chickens. St. Clair estimates that a home raised meat chicken costs \$10 compared to \$20 for a store-bought chicken of the equivalent size. The Andrews minimize the cost of feed for their meat chickens by butchering before 2 pounds.

Turkeys and pigs were the next most popular animal raised. Followed by goats, cited twice, and rabbits, cited once.

### Food Storage

Most participants use freezers and root cellars, but still practice canning. Food storage methods used are as follows:

Freezer: Eleven out of 13 use freezers (85%).

Root cellar or cold space: Eleven out of 13 have root cellars or cold rooms (85%)

Canning: Nine out of 13 (69)%

Drying: Three out of 13 (23%)

Fruit Leather: Mentioned once

Sauerkraut: Mentioned once

Pickling: Mentioned once

Freezing food is common, easy, and safe. But it also consumes a lot of energy. Freezers, because they are never turned off, are said to account for nearly a third of the total electrical consumption in the average home. It might be helpful to establish easily accessible up-dated data-bases that describe the kilowatt usage of various models of freezers and refrigerators, as well as data-bases describing strategies for siting and insulating freezers in such a way to reduce consumption.<sup>13</sup>

Root cellar and cold space technology is also popular in Haines. More information on building root cellars can be found at

<http://www.greenhomebuilding.com/QandA/storefoodQandA.htm>

and <http://www.greenhomebuilding.com/QandA/storefoodQandA.htm>

---

<sup>13</sup> See *Keeping your food cold: Solutions to refrigeration when electricity is scarce* by Michael Hackleman Issue #56, <http://www.backwoodshome.com/articles/hackleman56.html>

## Amount of Food Raised

Three respondents specified that home raised meat was available year round.

Seven respondents simply stated generally that they could eat something they have raised year round. Specifically mentioned were potatoes, onions, kale, peas, broccoli, cauliflower, and peas. Carrots last most of the year.

Six respondents qualified the time their produce lasts or is available with statements such as “7-8 months for some things,” “April through December,” or “depends on the year.”

## Seed Saving

Two respondents reported saving seeds. Berland saves kale, cucumber, tomato, zucchini, spaghetti squash, and potato seed. Cattoti and Goldberg save parsley, kale, lettuce, tomato, pepper, and caraway seeds. Garlic bulbs can be replanted; and some potatoes can be saved for seed potatoes.

Barriers to seed saving included disappointment with the germination rate of previously saved seeds, forgetting to “let” a plant go to seed, and seasonal conditions that do not permit maturation to the seed stage.

## Recommendations to Bolster Local Food Production

When asked for recommendations on how to increase or encourage local production of food, seven respondents focused on the concept of “community gardens.” Andrews speculated that although “*individual gardens are quite productive, groups growing together may be more fun and potentially much more productive.*” Additionally, Bob suggests that community gardens could be conceptualized as “neighborhood” gardens.

If not a community garden, Berland suggested “community tools.”

Berland and Henderson each recommended efforts to set aside land suitable for agriculture and to preserve land that has proven productive. Henderson mentioned his own farm, the Meacock field, and the McCrae place. Henderson suggested that the Little Salmon Valley and the Kelsall could be areas developed for agricultural purposes, though they are presently designated “forest land.”

Respondents were concerned with developing infrastructure to support food production: land needs to be made available (three respondents raised this issue), agricultural workers need to be trained and encouraged, and fertilizer needs to be available.

Three respondents suggested adding courses relevant to agriculture to the school curriculum as well as opportunities for youth to do community service in community gardens. One respondent suggested creating a community garden in the middle of the

track. Another respondent felt a volunteer labor force would be key to making local food production economically viable. Henderson suggested that work would have to be done to convince community members that the hard work entailed in food production has value to counter the prevailing assumption that food is easily acquired from the grocery store.

Another suggested that Haines could take advantage of its natural supply of seaweed by creating a “community seaweed fertilizer program.” Community composting was also mentioned as a way to anchor and support local food production.

Supplies, feed, and seed need to be provided. It was suggested that this need could be address through a “co-op” structure.

Taking a more classical approach to encouraging food production, one respondent suggested that more food would be produced locally if there were more demand for it. To this end, it was recommended that, “Senior citizen or other community food prep organizations could advertise for utilizing food extras others have.” The school lunch program was mentioned as one possible local market for locally grown produce.

### **Petroleum Based Garden Supplies**

Eight respondents inventoried their petroleum based products and tools. As petroleum becomes scarce, the cost of using these items may increase. Row covers, rotor tillers, and weed whackers are the most commonly used petroleum based tools.

<b>Item</b>	<b>Number of People Who Use</b>
Row Covers	10
Rotor Tiller	8
Weed Whacker	8
Tractor	6
Leaf blower/shredder	3
Plastic Mulch	4
Irrigation system, plastic pots, water pump, generator, gas for vehicle to bring seaweed to garden	Each mentioned once.

### **Necessary Purchases**

Twelve respondents inventoried the supplies they purchased in order to produce food. As petroleum becomes more expensive, transporting these key supplies to Haines may become more costly. Soil, seeds, fertilizer, and plant starts seem to be the main items purchased by Haines’ growers.

Respondents qualified their purchase of “starts” (young plants) as follows: “*only flower*”, “*very few*”, “*some*”, “*only a few if I forget or my starts fail*”, “*usually just to try something new or different.*”

<b>Item</b>	<b>Number of People Who Buy</b>
Potting soil, soil, peat moss	11
Seeds	11
Starts	8 (please read caveat above)
Fertilizer	9

Other items mentioned at least once include compost, lime, pesticide for root maggots and slug control, hoses, sprinklers, irrigation supplies, pots, and assorted tools.

## Appendix A Survey Questions

1. What type of production do you do? - plants, animals, greenhouse, exotics?
2. What is special or different about what you are doing?
3. How practical would this be for others to put into practice?
4. What pitfalls and problems have you encountered?
5. What is the cost of your setup – both financially and in time and effort?
6. How would you improve what you are doing?
7. How well would your application lend itself to a commercial enterprise?
8. Greenhouse questions
  - a. What type of greenhouse do you have and what do you grow?
  - b. How much of a jump do you get on the season in the spring?
  - c. How much do you extend your season in the fall?
  - d. Do you use artificial light?
  - e. Do you add heat?
  - f. What is the estimated cost?
9. Of the garden crops that you grow, and/or the animals you raise, which ones do you think are the most productive for the amount of money and effort put in to them?
10. How do you store the food you produce?
11. How many months of the year can you eat from your production?
12. If we as a community had to start producing more of our food do you have ideas on how we could do this?
13. Do you have suggestions for the community food production in general?
14. Do you save seeds?
15. What petroleum- based products do you use in your growing process?
16. What supplies, ingredients do you purchase to operate your growing process?

## Appendix B

### Essay on the Benefits of Raising Animals

Sally McGuire, Haines, Alaska

August 18, 2007

Recently when I wanted to discuss animal farming in Haines I was told “for every pound of grain you give a cow, you get one pound of meat and nine pounds of shit.” In other words, that in a crisis situation such as we may be looking at, it is inappropriate, wasteful, and even elitist to think of raising animals. I think it is essential to examine this. Without an understanding of animal agriculture (such as most Americans have lost), I believe we will have major problems.

The question was whether we should reasonably feed oats to our animals, or should they go directly to humans. A cup of oats would make enough oatmeal to feed a couple of humans one breakfast. It would be enough to help keep your goat producing milk while about 98% of her diet was brush and grass. To me that’s efficient and useful.

Pastoralists all over the world understand this perfectly well, and you often read of such people making truly heroic efforts to save their animals after various disasters. They understood that if their livestock die, there would be nothing for their children to eat. The animals are doing something that we can’t do, namely turning cellulose into protein (i.e. more cows or bugs or whatever). Cellulose is a complex sugar, the world is covered with it (we hope), and the ability to turn that huge resource into human food is what we are talking about here. We can’t use that resource directly; it has to have passed through an animal that has the ability to break it down (or more specifically, that animal’s bacteria have to do it.)

Humans like bears, can digest simple sugars, for instance those in a lettuce, and use them to run the machine. But for complex operations like growth and reproduction, we need fats and proteins, just like all other animals.

Yes, it may be possible to combine various grains and legumes to get up an amino acid profile similar to a complete protein (though it is particularly difficult and even dangerous to do this with children as they have much higher requirements and less room). But there are some important caveats to this: plants don’t want to be eaten, so you have to eat a good bit more than the charts would suggest to be sure of getting enough protein. Even more important is the amount of land and labor involved in growing them. Truly, it’s more efficient to let an animal do the work of turning dirt and sunshine into food. It’s true that there is waste inherent in the system but waste is an essential part of the whole. Every ecosystem requires “waste” to function.

It’s worth noting that in fact growing grains and legumes takes such a lot of prime land that one could easily make the case that is actually this diet that is elitist. Animals can take marginal land – rough grassland for instance, or farm ponds for ducks or brush land

for goats and so on – and turn it into food that humans can use. And they will make the land better as they do it, ready for the next generation.

The original comment – (“*for every pound of grain you give a cow, you get one pound of meat and nine pounds of shit*”) – has nothing to do with sustainable farming. It only has to do with the extremely weird world of agribusiness. Back 30 years ago, feedlot cattle were fed industrial waste: soybean pulp left from making paint or tofu or whatever, or sugar beet pulp and so on. In fact, they were basically a way to use up garbage. Certainly they were never fed grain “which could have been used to feed the world” – that stuff is expensive! Nowadays, they are fed corn. Evidently thanks to insane government subsidies and cheap oil, corn became even cheaper than garbage. (In the Midwest they burn it in their stoves). As corn reaches \$4 a bushel in the race to turn American’s farm fields into fuel factories, it will be interesting to see the ripple effect here: they won’t even be able to go back to feeding garbage when we can’t afford to produce so much – not to mention transportation costs.

At any rate, cattle are never put in feedlots until they are about a year old. Until then they follow the universal pattern of turning cellulose, water, and sunshine into cows. If the land degrades in the process that’s because of human greed (overstocking), not the fault of the process.

In earlier times, Haines people lived on a hunter/gatherer pattern with a very rich lifestyle due to the very rich resources. When white people came in, it was still possible for Haines to largely feed itself: there were dairies and large farms, with hay on the beaches for the hay burners. We can still do a lot of that, though with subsistence being problematical due to larger populations, not to mention things like global warming possibly impacting fish runs and so on. But if most families kept a cow or a couple of goats as everyone used to do, we could get by. Otherwise I truly think we have a problem. Other animals are incredibly useful too: chickens turn all kinds of foods into something we can use. Rabbits give you a lot back for minimal investment. And so on. But we need to get going. Right now people are eating their female livestock every year because no one wants them, which is really insane!

## Appendix C

### **Proposal for Community Food Growing Operation: Chickens and Eggs A Practical Proposal – a Home Operation “Scaled Up” Sally McGuire, Haines, Alaska**

The operation needs to be located centrally – preferably walking distance from town. Consider the fairgrounds. Make it a nice big laying hen operation (including electricity) with outdoor runs. There would have to be hatching and rearing areas too.

Community members would buy eggs either with money or by bringing in food scraps for the chickens with a point system set up according to the type and amount of food. Clear rules would need to be set up as to what is and is not acceptable. Enough points would equal trade for a dozen eggs.

Older residents could earn points by doing shifts at the front desk. Kids could help by gleaned foods along the roadside or from the beach.

Manure would be composted – perhaps with sawdust – and used in a good growing operation, either for humans or for animals. People could also buy or work for spent layers. Roosters would be kept with the hens so we could provide our own hatchery eggs.

**Note:** This proposal is not based on a communistic arrangement, which I don't think would work. Someone owns this operation or is otherwise in charge. People get eggs/hens if they pay/work for them.

You still need someone growing grain. Whoever did this would probably want to live there.

I think this idea has potential. If Haines can't figure out how to turn straw into gold, then Haines has the problem!

A similar program could work for meat birds or pigs.